Between Specification and Explanation.
About a German Discourse Particle[*]

Edgar Onea
University of Stuttgart, Germany
edgar.onea@ling.uni-stuttgart.de

Anna Volodina
University of Frankfurt, Germany
volodina@lingua.uni-frankfurt.de

Abstract

This paper provides a unified semantic and discourse pragmatic analysis of the German particle *nämlich*, traditionally described as having a specificational and an explanative reading. Our claim is that *nämlich* is a discourse marker which signals that the expression it is attached to is a short (elliptic) answer to a salient implicit question about the previous utterance. We show how both the explanative and the specificational reading can be derived from this more general semantic contribution. In addition we discuss some cross linguistic consequences of our analysis.

Keywords: *discourse particles, discourse structure, context markers, questions, specification*

1. Introduction

The most striking puzzle about German particle *nämlich* (roughly: 'namely') is this: depending on its syntactic environment, *nämlich* can either function as a specificational marker, as in (1a), or as a marker of explanation, as in (1b.).

(1) a. *Peter hat Max mit einer Frau gesehen. **Nämlich** mit deiner Schwester.*
    Peter has Max with a woman seen namely with your sister
    'Peter saw Max with a woman, namely with your sister'

   b. *Peter ist einkaufen gegangen. Er hatte **nämlich** keine Butter mehr.*
    Peter is shopping gone he had namely no butter more
    'Peter went shopping, since he had no more butter.'

While these readings may seem unrelated, we argue that a unified lexical entry for *nämlich* can be given: *nämlich* marks that the expression it attaches to is a short answer to an implicit question about the previous utterance. This paper is an implementation of this idea, there are some independent, interesting consequences though: the first one concerns specificational particles, the second more generally the presuppositional properties of discourse particles.

1.1. Specificational particles

There is a whole class of what we wish to call *specificational particles*, which have hardly been studied, and to which the analysis of *nämlich* should extend. Intuitively, specificational particles mark that some expression is used to specify some previously underspecified dis-

course referent as in (2). We will show, however, that a more indirect analysis involving questions under discussion is necessary.

(2)   *John just met a famous actress, **namely** Julia Roberts.*

Specificational particles can be found in many languages such as *a imenno* in Russian, *éspedig* in Hungarian, *érqiê* in Chinese, *ovvero* in Italian, *namelijk* in Dutch or *nämlich* and *und zwar* in German, but there are also languages which do not lexicalize or grammaticalize this function but rather use more complex expressions like French *c'est a dire* ('this is to say') or Romanian *mai precis* ('more precisely').

The interpretation of (2) is similar to a specificational sentences, as in (3a) , or pseudo-cleft constructions, as in (3b), which are much better studied, cf. den Dikken (2005), Romero (2005), Heller (2005), Gerbl (2009) etc.. Yet, as opposed to specificational particles, clefts and specificational sentences come with existential presuppositions.

(3)   a. *The actress John just met is Julia Roberts.*

        b. *Who John just met is Julia Roberts.*

Specificational particles are also similar to apposition markers like *that is*, *in other words* or *in short* (Blakemore 1996), as in (4). In fact, omitting specificational particles would often yield the same interpretational effect as the resulting apposition, as shown in (5).

(4)   *The interpretation depends on pragmatic, **in other words** non linguistic, factors.*

(5)   a. *My best friend, **namely** John, went to a party last night.*

        b. *My best friend, John, went to a party last night.*

Again, there are differences between apposition markers and specificational particles. One is that specificational markers do not attach to names (6a), whereas appositions with or without markers often do as in (6b). Moreover, some specificational markers can specify unarticulated constituents, as in (7). It is unclear, whether one would like to analyse (7) as an apposition if we replace *und zwar* with an intonational break.

(6)   a. **John, **namely** my best friend, went to a party last night.*

        b. *John, (**scilicet**) my best friend, went to a party last night.*

(7)   *Peter hat John verprügelt. **Und zwar** mit einem Besen.*
        Peter has John beaten   namely   with a   broom
        'Peter has beaten up John, namely with a broom.'

Given that specificational particles seem to constitute a hitherto unanalysed functional category that appears in many languages, our paper is not only meant to deliver an idiosyncratic analysis of a particular German particle but also to provide a general framework for the exploration of specificational particles in other languages.

1.2. Discourse particles

The semantic contribution of discourse particles goes beyond standard truth conditional meaning. It concerns expressive meaning (Kratzer, 1999), presuppositions and context marking (Zeevat, 2002, 2003) or conventional implicatures (Potts, 2005), all also known as *projective meaning*. Discourse particles often encode information about the context in which a particular utterance or expression must be interpreted or information about epistemic or emotional states of the speaker with regard to some particular proposition. In a narrower sense, the term *discourse particle* only refers to those particles that relate an utterance to the discourse context.

Often, the meaning of discourse particles can be spelled out as a presupposition, but not all discourse particles allow the accommodation of their presuppositions: some (*context markers* in the sense of Zeevat 2003) cannot be accommodated while others, such as *only* in the analy-

sis of Beaver and Clark (2008), can. Specificational particles come in both classes: *nämlich* mainly differs from *und zwar* in the non-availability of accommodation for its presupposition. Thereby the analysis of specificational particles contributes to a deeper understanding the presuppositional properties of discourse particles in general.

1.3. The structure of this paper

In section 2, we present the main puzzle about *nämlich*. In section 3, we present two existing approaches to this puzzle. We show that the existing approaches have significant shortcomings and are in need of revision. In section 4, we provide additional data which allow the extension of our former analysis (Onea and Volodina 2009) which is formally implemented in section 5. Finally, section 6 discusses additional perspectives for further research.

2. The Problem

The German particle *nämlich* appears to have two clearly distinct readings that correlate with the syntactic environment in which this particle appears. This is captured in the generalization in (8).

(8)   **Generalization:**

       If *nämlich* appears within a matrix clause, it has an explanative function, otherwise a specificational function.

As shown in (9), *nämlich* can appear in any position within a matrix clause.

(9)   *Peter   ist glücklich. Maria (**nämlich**)   hat (**nämlich**) John (**nämlich**) verlassen.*
       Peter   is happy   Mary namely   has namely   John namely   left
       'Peter is happy, because Mary left John.'

By *within a matrix clause,* in (8), we mean: between Spec CP of a non-elliptical matrix clause and the base generated (clause final) position of its finite verb. This is important because explanative *nämlich* may thereby surface in a clause final position but not in a clause initial position. A clause final position may occur if no verbal element is surfacing in situ as in (10a) but not in (10b). (We share the standard assumption that in German matrix clauses finite verbs are moved to C as originally argued in Den Besten 1989, see e.g. Zwart 2001, Fanselow 2003, Müller 2003, Nilsen 2003 for additional discussion). Surprisingly, but widely irrelevant to this paper, *nämlich* can surface between the first constituent of a matrix clause and the finite verb as in (10c), having an explanative reading (see Breindl 2008, Onea & Volodina 2009, Karagjosova *this issue* for discussion).

(10)   a. *Peter liebt Maria (**nämlich**) ~~liebt~~ (***nämlich**)*
          Peter loves Mary   namely   loves namely
          'Because Peter loves Mary.'

       b. *Peter ruft   Maria (**nämlich**) an-~~ruft~~ (***nämlich**)*
          Peter calls Mary   namely   up-call namely
          'Because Peter calls Mary.'

       c. *Peter **nämlich** ruft   Maria an.*
          Peter namely   calls Mary up
          'Because Peter calls Mary.'

In any other case *nämlich* does not trigger an explanative reading. In (11) we give a whole range of cases in which non-explanative *nämlich* can be used: as an elliptic appositive clause as in (11a), as a disintegrated structure similar to right dislocation as in (11b), see Averintseva-Klisch (2009) and Onea & Volodina (2009) for discussion, introducing a subordinated clause, as in (11c), or even within the clause boundaries of subordinated clauses as in (11d).

(11) a. *Eine sehr kluge Frau,   nämlich Maria, hat uns angerufen.*
A   very clever woman namely Mary   has us   called
'A very clever woman, namely Mary, has called.'

b. *Eine sehr kluge Frau   hat uns angerufen. **Nämlich** Maria.*
A   very clever woman has us   called   namely   Mary
'A very clever woman, namely Mary, has called.'

c. *Peter hat etwas   Dummes gesagt. **Nämlich**, dass der Direktor   verrückt   ist.*
Peter has something stupid   said   namely   that the director   crazy   is
'Peter said something stupid, i.e. that the director is crazy.'

d. *Maria hat Peter etwas   Dummes gesagt. Dass sie ihn **nämlich** nicht   liebt.*
Mary has Peter something stupid   said   that she him namely   not   loves
'Mary said something stupid to Peter. Namely, that she doesn't love him.'

The task of the rest of this paper will be to derive (8) from a single lexical meaning of *nämlich*. We will adopt the following strategy: first, we discuss some existing approaches, then, we develop three crucial properties of *nämlich* that in our view shed light on its core meaning components, and, finally, we formalize those insights.

3. Former approaches

The simplest way to look at the puzzle is denying that there is one, i.e. *nämlich* could be polysemous. Still, in the literature this has never been claimed, and, indeed, it seems that if a unified semantic account for *nämlich* can be given that has the potential to extend to other specificational particles as well such an account is superior to any polysemy account. We note, in passing, that a fully predictive polysemy account might not be easy to give either: it is at least not trivial why the explanative *nämlich₁* would be ruled out in non-root sentences, whereas specificational *nämlich₂* would be ruled out in root sentences.

There are two types of non-polysemy approaches previously proposed in the literature: there have been attempts to explain the specificational readings in terms of speech act level causality and alternatively to derive the explanative interpretation in term of specifying the answer to some implicit *why*-question. We now turn to these approaches in more detail.

3.1. *Nämlich as a causal connective*

Granito (1984) and Pasch (2008, 2009) argue that *nämlich* is a causal connective and derive the specificational reading from the causal meaning. They argue that the true nature of *nämlich* is revealed in non-elliptical contexts, as in (12): hence, *nämlich* marks a causal relation between the eventuality of the sentence *nämlich* occurs in and the eventuality of the previous utterance. However, the causal relation does not apply at the propositional level but rather at the speech act level, hence the correct representation of (12) is (12b) and not (12a), in other words: the caused eventuality is the speech act itself. Note that even if in (12) there may be a real causal relation between the two propositions, since Mary's being pretty may indeed cause Peters love, in the theory of Granito (1984) this is at best a contingent issue. What *nämlich* marks is that the speaker provides the reason for the fact that he uttered asserted that Peter loves Mary.

(12) *Peter liebt Maria.   Sie ist **nämlich** schön.*
Peter loves Mary   she is namely   pretty
'Peter loves Mary, because she is pretty.'

a. CAUSE(loves' (P, M), pretty' (M))

b. CAUSE(SAY(loves' (P, M)),pretty' (M))

The specificational use of *nämlich* is treated as a special case of speech act level causality. By specifying a discourse referent of the previous sentence the speaker (in some way) explains

the fact that he made the previous utterance. Hence, in (13) the speaker specifies who Peter loves, and by this he provides an explanation of his previous, less informative utterance that Peter loves some woman.

(13)   *Peter liebt eine Frau.* **Nämlich**   *Maria.*
       Peter loves a   woman namely   Mary
       'Peter loves a woman. Namely Mary.'

Specifying a discourse referent is not a form of explanation, however, or at least not generally. But even if it was, false predictions are made, e.g., that (14) is acceptable, since specifying the place in which an event occurs would be just as good an explanation as specifying the participants of the event. In fact, even if one would specify the exact time and whatever amount of details he could think of in addition to the location thereby showing a maximum level of competence about the described event, the example would not get any better.

(14)   #*Peter küsst   Maria.* **Nämlich**   *im*   *Schlafzimmer.*
       Peter kisses Mary   namely   in the   bedroom
       Intended reading: 'Peter kisses Mary, namely in the bedroom.'

3.2. Specificational nämlich

In Onea & Volodina (2009) we have argued that the explanative reading of *nämlich* can be derived from its specificational reading. We assumed that *nämlich* marks that the expression it is attached to is a short answer to some implicit question about the previous utterance. An utterance containing some underspecified discourse referent (some discourse referent which could be assigned different individuals in some model) often gives rise to a justified question about which individual the speaker actually refers to: for (15a) the question arises *Who did Peter see?* or *Which woman did Peter see?*, as given in (15c).[2] Now, *nämlich* marks that *Mary* is the answer to such a specificational question. Hence, *Mary* needs to be interpreted with respect to a particular question and the semantic contribution of *nämlich* is to represent that implicit question in the discourse. In Onea & Volodina (2009), this has been modelled in terms of a presupposition, but we will see later that this is not entirely appropriate.

(15)   a. *Peter hat eine Frau   gesehen.*
          Peter has a   woman   seen
          'Peter saw a woman...'

       b. **Nämlich**   *Maria.*
          namely   Mary
          '...namely Mary.'

       c. Implicit question: $\lambda x.$ saw'(P, x) & woman'(x)

       d. Interpretation: $\lambda x.$[saw'(P, x) & woman'(x)] (M)

Turning to explanative *nämlich*, the crucial observation is that the semantic type of the expression attached to *nämlich* determines the type of the implicit *wh*-question. If *nämlich* is attached to a whole sentence, the sentence will be interpreted as a short answer to a question, which admits type *t* answers. The explanative reading arises because the typical question that admits type *t* short answers is a *why*-question as shown in (16c), which, hence, yields the correct interpretation in (16d). (The formal representations are very simplified).

(16)   a. *Peter hat wohl   einen Polizisten   gesehen.*
          Peter has maybe   a   policeman   seen
          'Peter probably saw a policeman...'

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[2] These questions happen to be linguistically well-formed questions, however, this is not necessary. Implicit questions *nämlich* answers may be hard to express in natural language.

b. *Er hat **nämlich** die Geschwindigkeit reduziert.*
   he has namely   the   speed   reduced
   'Since he reduced the speed.'

c. Question: λp EXPL(p, $\Diamond(\exists x)$(policeman'(x) & saw'(P,x))

d. Interpretation: EXPL(reduced'(P,ιx.speed'(x)), $\Diamond(\exists x)$(policeman'(x) & saw'(P,x)))

The lexical entry that we provided for *nämlich* in Onea & Volodina (2009) is given in (17). Note that α corresponds to the previous sentence and Ψ is the expression which is immediately attached to *nämlich*. Further, the entailment of the main event of the previous utterance is meant to model the requirement that Θ should be a question about α[3]. Note that we take the expression *nämlich* is attached to not to be elliptic in this old version of our approach, instead it is a term answer to a question represented as an incomplete proposition which, on its turn, takes this term directly as an argument. In section 5.2 we present an ellipsis based analysis, but not much seems to hinge on this aspect.

(17) $\llbracket$*nämlich*$\rrbracket = \lambda\Psi.\lambda\alpha.\exists\Theta.$Type($\Theta$) = <Type($\Psi$), t> and $\Theta(\Psi)$ entails the main event of α.

A salience hierarchy rules out the possibility that unwanted questions that would allow a type t answer interfere with the explanative interpretation. The hierarchy is such that a) questions that are satisfied by the discourse are high in this hierarchy, and b) per default *why*-questions will be on top of the hierarchy. This yields a defeasible explanative interpretation for *nämlich* combined with a type t expression.

We consider that this is, indeed, the correct way to go, but as it stands, the analysis is incomplete (see also Karagjosova *this issue* for a critical review). For one thing, it remains mysterious why examples like (18) cannot have an explanative reading. Note that the only thing that counts, according to (17), is the semantic type of the expression *nämlich* is attached to, and in (18) this is quite clearly t.

(18) *Peter hat ein Problem. **Nämlich**: die Arbeiter wollen Geld.*
      Peter has a   problem namely   the workers   want   money
      'Peter has a problem, i.e. the workers want to be paid.'

Secondly, the analysis is not restrictive enough in non-explanative cases. In such cases, *nämlich* and *und zwar* seem to have a very similar but not identical meaning, however, the analysis cannot be used to distinguish them. First, there are examples, like (19), in which the discourse referent specified by *Maria* is in principle uniquely identifiable albeit unknown to the hearer: in such a case specificational *nämlich* can be used, but not *und zwar*.

(19) *Peter hat die beste Freundin von John geküsst, **nämlich** / $^{??}$**und zwar** Maria.*
      Peter has the best girlfriend of   John kissed   namely / namely   Mary
      'Peter kissed Mary, the best friend of John.'

Second, there are examples in which *und zwar* cannot be replaced by *nämlich*: e.g., the case of unarticulated constituents such as time, place, degree etc., see (14) (repeated here for convenience as (20)).

(20) *Peter küsst Maria. **Und zwar** / $^{??}$**Nämlich** im   Schlafzimmer.*
      Peter kisses Mary namely   namely   in the bedroom
      'Peter kisses Mary, namely in the bedroom.'

Third, there are examples involving incomplete specification, i.e., in which a discourse referent is only partially specified, as in (21): the range of possible individuals that verify the discourse referent introduced by *eine Frau* ('a woman') is reduced to a smaller set which also

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[3] Daniel Hole (p.c.) and the editors of this volume have pointed out to us, is that the entailment relation in (17) may not suffice to ensure that we have a question about the previous utterance.

satisfies the condition of being a girlfriend of the speaker, but not to a singleton as in a typical *nämlich* example.

(21) … *eine Frau,   **und zwar** / $^{??}$**nämlich** eine Freundin von mir …*
       a   woman namely   namely   a   girlfriend of mine
       '… a woman, namely a girlfriend of mine…'

Moreover, in particular dialogue situations, in which it is expected that the speaker has some problem or question (e.g. at a physician, psychologist or lawyer), one may start a dialogue by using *und zwar* to express that he is now 'getting down to the task', as in (22), but not with *nämlich*.

(22) **Und zwar** / *****Nämlich** *ich habe einen Sohn und ...*
       namely   namely   I   have a   son   and ...
       'The problem is this: I have a son and ...'

If an analysis of *nämlich* is to be complete it should make correct predictions for such cases. Moreover, if the analysis is supposed to generalize to the whole class of specificational particles it should be able to explain such contrasts between *nämlich* and *und zwar* in terms of parametric variation with the same underlying semantic structure. For this reason, in the following section we turn to a much more detailed analysis of the subtle contrasts, *nämlich* may be involved in.

4. Three puzzling aspects

In this section we discuss three types of empirical puzzles, providing some deeper generalizations regarding the semantic import of *nämlich*.

4.1. Nämlich and prominence in discourse

Nämlich cannot be used to specify discourse referents that are not explicitly present in the previous utterance, as shown in (20). This is not accounted for by our previous analysis, since the question *Where did Peter kiss Mary?* can be constructed and *In the bedroom* is an acceptable short answer. If, however, we introduce the place argument by an indefinite, the continuation with *nämlich* becomes felicitous.

(23) *Peter hat Maria an einem bestimmten Ort geküsst.* **Nämlich** *im   Schlafzimmer.*
       Peter has Mary on a   particular place kissed   namely   in the bedroom
       'Peter kissed Mary in a particular place, namely in the bedroom.'

One possible solution involves the distinction between *context markers* and *presupposition triggers*. Context markers are understood as a specific class of particles such as the English *too*, German *doch* etc. which apparently trigger presuppositions, but crucially, their 'presuppositions' cannot be accommodated in the context, i.e. either the context supports these presuppositions or the utterance gets infelicitous. (23) would be, then, felicitous because the question is explicitly triggered in the discourse by the presence of the indefinite, and (20) is infelicitous because the question cannot be accommodated.

Further evidence for this diagnostic comes from the observation that *nämlich* is more likely to occur in cases in which the discourse referent it specifies is particularly prominent in the discourse. (24a), under default intonation (main stress on *Polizistin*), only has one interpretation, namely that Mary is the police officer. However, if we make *eine Freundin* heavier, as in (24b), the interpretation that the friend is Mary is much more likely.

(24) a. *Peter hat einer Freundin eine Polizistin vorgestellt.   **Nämlich** Maria.*
          Peter has a   friend   an officer   introduced   namely   Mary
          'Peter introduced a police officer, namely Maria, to a friend.'

b. *Peter hat einer bestimmten Freundin eine Polizistin vorgestellt.* ***Nämlich*** *Maria.*
Peter has a specific friend an officer introduced namely Mary
'Peter introduced a police officer to a particular friend, namely Maria .'

Another way to increase the prominence is the addition of *nur* ('only'), which insures that the discourse referent to be specified by *nämlich* has maximal discourse prominence, since it is the answer to the current discourse question (cf. Beaver & Clark 2008): in (25), *ein junger Mann* ('a young man') is just not prominent enough, as compared to *einen großen Wunsch* ('a big wish'), to get specified by *nämlich.* Omitting *nur* ('only') makes the continuation (25b) acceptable.

(25) *Ein junger Mann hat nur einen großen Wunsch.*
A young man has only one big wish
'A young man has only one big wish.'

a. ***Nämlich*** *seine große Liebe zu finden.*
Namely his great love to find
'Namely to find his great love'.

b. ^?? ***Nämlich*** *Peter.*
namely Peter
'Namely Peter'

While the contrast in (20) vs. (23) seems hard, the others are more subtle and not necessarily shared by all speakers.

This translates to implicit questions as follows: any discourse referent that, in a particular discourse context, (at least from the point of view of the hearer) could correspond to different individuals in a model potentially gives rise to a *wh*-question of specification. If several specification questions are triggered by an utterance, they are ranked according to the discourse prominence of the triggering discourse referent, whereby unarticulated constituents are so low on prominence that they don't trigger specification questions at all.

An anonymous reviewer observes that several referents may be specified at the same time, as well, like in (26). This doesn't mean, however, that several specificational questions are ranked highest at the same time, but rather, that a specificational double question may arise of the type: *Who of my colleagues met who of pretty women*?

(26) *Einer meiner Kollegen traf eine schöne Frau,* ***nämlich*** *Peter Maria.*
One my colleague met a pretty woman namely Peter Mary
'A colleague of mine met a pretty woman, i.e. Peter (met) Mary.'

Another anonymous reviewer points out that not every indefinite would introduce a new specification question. For instance, (27a) doesn't seem to trigger the question *Which fish did Peter catch*?. This patterns with the fact that (27b) seems a very odd continuation. However, (27a) could license a *What kind of fish?* question, and indeed, in an appropriate context, in which, the kind of fish, Peter has caught is relevant, (27c) seems an acceptable continuation.

(27) a. *Peter hat einen Fisch gefangen.*
Peter has a fish caught
'Peter caught a fish.'

b. # ***Nämlich*** *den großen auf dem Tisch.*
Namely the big on the table
'Namely the big one on the table'

c. ^? ***Nämlich*** *eine Forelle.*
namely a trout
'Namely a trout.'

This shows that the discourse prominence of the antecedent indefinite as well as general world knowledge and contextual information play an important role in the triggering and or-

dering of specification questions. It seems, hence, that once we can model the prominence of discourse referents and the questions their referential underspecification gives rise to the acceptability of *nämlich* boils down to whether or not such a question is actually present in the discourse or not. If not, *nämlich* cannot be used to introduce such a question by means of accommodation. Hence, *nämlich* is a typical context marker in the sense of Zeevat (2003) and not a classical presupposition trigger.

4.2. Nämlich and complete answers

The question is, why, in (28), *nämlich* is way worse than *und zwar*.

(28) *Vor   der Tür steht   eine Frau.   **Und zwar / *nämlich** eine Freundin von mir.*
     In front the door stands a   woman namely   namely   a   girlfriend of mine
     'A woman stands in front of the door, namely a girlfriend of mine.'

Replacing *eine Freundin von mir* ('a girlfriend of mine') with a proper name would make the example acceptable, hence *nämlich* would only be possible with referential expressions. This is not correct, though, for, in (29), *wenig* ('little') can hardly be considered a referential expression in the given context – many similar examples can be found with different types of quantifiers in the corpora.

(29) *Er hatte vom   Französischen genausoviel Ahnung   wie vom   Deutschen.*
     He had   from French   as much   knowledge as   from German
     ***Nämlich** wenig.*
     namely   little
     'He new as much French as German, namely littlee.'

Even only considering referential expressions, interesting contrasts may arise. While the definite *meine beste Freundin* ('my best girlfriend') in (30a) only marginally improves the example (28) for many speakers (at least as long as it is not granted that the hearer knows the best girlfriend of the speaker), *deine beste Freundin* ('your best girlfriend') makes the example perfectly acceptable, as in (30b).

(30) *Vor   der Tür   steht   eine Frau.*
     In front the door stands a   woman
     'A woman stands in front of the door.'

     a. ? ***nämlich** meine beste Freundin.*
     namely my   best   girlfriend
     'Namely my best girlfriend.'

     b. ***nämlich** deine beste Freundin.*
     namely your   best   girlfriend
     `Namely your best girlfriend.'

The generalization regarding referential expressions seems, hence: if, in a given discourse, the speaker initially wished to refer to a particular individual and but has chosen a non-referential expression and he assumes that the hearer doesn't know who he refers to from chosen description, he may choose to specify the referent, but only if the specification he gives helps the hearer to identify the referent exhaustively. For (30) the hearer may or may not know the best girlfriend of the speaker, but in a neutral context he is definitely supposed to know his own best girlfriend. Of course, if the hearer has only partial knowledge of the referent, a less precise specification is also conceivable in an appropriate context.

This is in line with an observation by an anonymous reviewer, who notes that *nämlich* cannot specify explicitly non-specific indefinites, whereas *und zwar* can, as shown in (31). Probably more needs to be said about the relation between specificity and specification, though, cf. von Heusinger & Chiriacescu (*this issue*) and Ionin (*this issue*) for additional discussion. A this point, we only observe that complete specification can, indeed, only be given if the speaker

has both the ability and the intention to do so: the use of an explicitly marked non-specific expression marks that either the ability or the intention of the speaker to become more explicit about the referent of the indefinite (if there is one at all) is not available.

(31) a. # *Ich suche   irgendeinen Drachen, **nämlich** einen roten.*
      I   search any   dragon   namely a   red
      Intended reading: 'I'm looking for a dragon, namely a red one'

   b. *Ich suche   irgendeinen Drachen, **und zwar**   einen roten.*
      I   search any   dragon   namely   a   red
      'I'm looking for a dragon, namely a red one'

These observations translate into our question-based approach as follows: we assumed that *nämlich* indicates that the expression it is attached to must be interpreted as an answer to an implicit question about the previous utterance; now we add that this answer must be complete regarding the communicative task at hand.

It is hard to say, though, and an interesting research question, what it is for an answer to be complete. One way to circumvent the problem is to assume that after the *nämlich*-expression has been processed, the question that it answers must be eliminated from the stack of open questions in the sense of Roberts (1996). Hence, *nämlich* conventionally signals that the speaker wants the question he answers to disappear from the QUD-stack. Whenever this is not possible, *nämlich* cannot be used. And, since there is a certain amount of contextual flexibility regarding the removability of questions from the QUD-stack, the judgements regarding examples like (30) are expected to be gradual and to vary greatly from speaker to speaker.

As an anonymous reviewer pointed out, one can think of this from a quite different perspective as well. One could say that the specification takes up an entity that is available for pronominal reference.[4] From this, if follows that the entity cannot be fully specified yet in the CG, and that the host of *nämlich* must offer a proper specification.

There are two obvious problems with this alternative approach: first, how does this relate to explanative instances of *nämlich*? And, second, how is proper specification to be understood, so as to still permit the formal modelling of the contrast between the level of specification required by *nämlich* and the one required by *und zwar*. For the first problem, one can think of some kind of bridging mechanism between an event to be specified and its explanation, which could, actually be hard wired into the semantics of *nämlich* in some sense, and for the second problem, some distinction regarding the number of possible verifying individuals in the model (*cases* in terms of Dynamic Semantics) or the pragmatic usefulness of specification must be introduced. Obviously, however, questions under discussion would be perfectly suitable to model these distinctions: for an explanation is an answer to a *how-come* question, and completeness of an answer is an elegant measure of its pragmatic use. So, in a way, the two perspectives boil down by and large to the same. Since a question-based discourse model might ultimately be needed anyway, our way of thinking about a more direct connection between *nämlich* and questions seems more parsimonious.

Finally, let us consider a surprising, but correct, prediction of the idea that completeness of answers correlates with removal from the QUD-stack: If *nämlich* marks that the implicit question it answers must be removed from the QUD-stack, the speaker should assume that the answer to that question is definitive and there is nothing else to add. Hence, by using *nämlich* the speaker gives information he takes not to be further under discussion, i.e. uncontroversial.

Indeed, it has been observed for a long time in the descriptive literature that *nämlich* is similar to the German *bekanntlich* (`scilicet') in that it is used to express information that is assumed

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[4] See, Kaiser (this issue) and Zeevat (this issue) for discussion of pronominal reference and discourse in this volume.

to be known to both the speaker and the hearer (cf. for detailed critical discussion Frohning 2007, similar results have been discussed in Gyuris 2009 regarding the Hungarian particle *ugye*). Clearly, the information marked by *nämlich* is not hearer-old. This led scholars to assume some semantically coded uncontroversiality of the specification, but in our view, this effect comes from the fact, that the question it answers disappears from the stack of open questions.

4.3. Subordinate clauses vs. matrix clauses

In our prior approach, we have argued that the explanative reading of *nämlich* can be derived from the fact that *nämlich* attaches to a full clause, i.e. to some semantic entity of type *t*. Unfortunately, we have shown above that *nämlich* cannot always have an explanative reading if it appears attached to a type-*t* semantic entity. Hence, the question is: why don't (32a) and (32b) exhibit an explanative reading, whereas (32c) does.

(32) a. *John hat etwas   Blödes gesagt:* **Nämlich** *dass Maria klug   ist.*
John has something stupid said   namely that   Mary clever is
'John said something stupid, namely that Mary is clever.'

  c. *John hat etwas   Blödes gesagt:* **Nämlich:** *Maria ist klug.*
John has something stupid said   namely   Mary is clever
'John said something stupid, namely that Mary is clever.'

  d. *John ist glücklich. Maria ist* **nämlich** *klug.*
John is happy   Mary is namely clever
'John is happy because mary is clever.'

As for (32a), the answer seem easy to find: *nämlich* marks that the expression it is attached to is a short answer to a question and, in (32a), the embedded clause is simply no good answer to a *why*-question for syntactic reasons (that may or may not have a semantic reflex). As opposed to this, the *nämlich*-clause in (32c) is a good answer to a *why*-question. This nice explanation is prima facie discredited, however, by the unfortunate fact that (32b) patterns with (32c) in being a perfect answer to a *why*-question, yet, an explanative reading is not available for (32b).

(32b) seems related to a much more prominent problem of German syntax also known as *V2 embedded clauses* or the *V to C movement* problem in embedded clauses, (cf. among others Reis 1997, Gärtner 2000, Gärtner 2002 and Truckenbrodt 2006). It has been observed that verbs of saying, belief or knowledge allow both for verb-final (33a) and V2 complement clauses (33b), while other verbs, such as verbs of regret or fear as well as negated verbs, only accept the former kind of complement clauses, (33c) vs. (33d):

(33) a. *Peter glaubt/ weiß/ sagt, dass Maria klug   ist.*
Peter believes knows says that   Mary clever is
'Peter believes knows says that Mary is clever.'

  b. *Peter glaubt/ weiß/   sagt, Maria ist klug.*
Peter believes knows says Mary is clever
'Peter believes knows says that Mary is clever.'

  c. *Peter befürchtet/ bedauert, dass Maria klug   ist.*
Peter fears   regrets   that Mary clever is
'Peter fears regrets that Mary is clever.'

  d. * *Peter befürchtet/ bedauert, Maria ist klug.*
Peter fears   regrets   Mary is clever
intended reading: 'Peter fears regrets that Mary is clever.'

The same verbs which do not allow for a V2 complement clause also fail to allow for a V2 clause in combination with *nämlich* to specify their complement, as shown in (34a-d).

(34) a. *Peter glaubt etwas,* ***nämlich*** *dass Maria klug ist.*
Peter believes something namely that Mary clever is
'Peter believes something, namely that Mary is clever.'

  b. *Peter glaubt etwas,* ***nämlich****: Maria ist klug.*
Peter believes something namely Mary is clever
'Peter believes something namely that Mary is clever.'

  c. *Peter befürchtet etwas,* ***nämlich*** *dass Maria klug ist.*
Peter fears something namely that Mary clever is
'Peter fears that Mary is clever.'

  d. * *Peter befürchtet etwas,* ***nämlich*** *Maria ist klug.*
Peter fears something namely Mary is happy
intended reading: 'Peter fears something, namely that Mary is clever.'

We may conclude that our problematic example (32b) at least involves an embedded clause. If so, an explanative reading may not arise because *why*-questions cannot be answered with embedded V2-clauses in general. This is a plausible assumption, since, in German, V2 embedded clauses, indeed, cannot answer overt *why*-questions even if they are headed by *weil* ('because'): (35b) is at least marginal with normal intonation, cf. Reis (1997).

(35) *Warum/ Wieso liebt Peter Maria?*
Why how come loves Peter Mary
'Why/ How come Peter loves Mary?'

  a. *Weil sie schön ist.*
because she pretty is
'Because she is pretty' .

  b. # *Weil sie ist schön.*
because she is pretty
'Because she is pretty'

Again, this seems a syntactic constraint. While being a mere stipulation at this point, this constraint at least solves our puzzle in an empirically sustainable way: *nämlich* with V2 embedded clauses is not explanative, because V2-embedded clauses are not good answers to *why*-questions.

The solution is incomplete, though: *nämlich* can appear inside a V-final complement clause, without triggering an explanative reading but not inside a V2 complement clause. While (36a)[5] means roughly the same as (34a), (36b) is completely different from (34b), in fact (36b) can only be interpreted in a specific context, in which the fact that Mary is clever somehow explains the assumption that Peter believes something (e.g. we believe that Peter, the well known sceptic, now finally believes something, since Mary the ingenious philosopher managed to convince him.)

(36) a. *Peter glaubt etwas, dass Maria* ***nämlich*** *klug ist.*
Peter believes something that Mary namely clever is
'Peter believes something, namely that Mary is clever.'

  b. *Peter glaubt etwas, Maria ist* ***nämlich*** *klug.*
Peter believes something Mary is namely clever
'Peter believes something, since Mary is clever'.

It has been argued by many scholars including Gärtner (2002) or Truckenbrodt (2006) that V to C movement in German is connected to illocutionary force that ultimately triggers the addition of the proposition into the common ground or some belief system. If this is correct, then

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[5] An anonymous reviewer pointed out that (36a) is not acceptable for all speakers. Adding an intonational boundary between the clauses makes the sentence somewhat more acceptable, though, and in (38), structurally similar examples are given that illustrate the same point and are accepted by more speakers.

some interaction between the position of *nämlich* and the illocutionary force triggered by V to C movement must be assumed, since the position of *nämlich* seems irrelevant in this respect in V-final clauses but relevant in V to C clauses. We cannot spell out the details here, but we suggest the generalization in (37). Herein, by *assertion* we mean at least a commitment to the truth of the sentence, in some domain.

(37)   A CP can only be asserted by the speaker if *nämlich* is c-commanded by spec CP, and cannot be asserted by the speaker, whenever *nämlich* c-commands the whole CP.

Since an explanative context requires the commitment of the speaker to the truth of some proposition, it immediately follows, that (34b) cannot answer an explanative question. At the same time, (36b) clearly asserts a proposition, and hence may answer a *why*-question. The difference between (34b) and (36b), hence, boils down to different questions that the two *nämlich*-clauses answer: *What does Peter believe?* for (34b) and *Why/How come Peter believes something?* for (36b).

(37) is also compatible with the fact that in V-final complement clauses *nämlich* can appear also inside the clause boundaries. This is so, because, as argued in Truckenbrodt (2006), V-final clauses do not have the illocutionary potential to be asserted by the speaker. Therefore, the position of *nämlich* in these clauses is completely irrelevant.

Finally, let us consider other types of embedded clauses. In German, V-final clauses can be embedded by means of a number of particles such as *weil* ('because'), *damit* ('so that'), *wenn* ('if' or 'when') etc. *Nämlich* can appear in any of the corresponding embedded clauses as shown in (38).

(38)   a.   *Maria wird   John   nur   unter bestimmten   Bedingungen   küssen.*
             Mary   will   John only   under certain   circumstances   kiss
             *Wenn er sie   **nämlich** bezahlt.*
             if   he her   namely   pays
             'Mary will only kiss John under certain circumstances, i.e. if he pays her.'

       b.   *Maria hat   John   aus einem bestimmten Grund geküsst.*
             Mary   has John   out one   particular   reason kissed
             *Weil   er sie   **nämlich** bezahlt   hat.*
             because he her   namely   paid   has.
             'Mary kissed John because of a particular reason, i.e. because he paid her.'

       c.   *Maria hat John eingeladen, damit   er   ihr **nämlich**   kocht.*
             Mary   has John invited   so that he   her namely   cooks
             'Mary has invited John, so that he cooks for her.'

In all of these cases *nämlich* signals that the clause it is attached to answers the particular kind of question determined by its syntactic structure. Often it is not so clear whether in a particular sentence we have an explanative or a specificational use of *nämlich*. This is perfectly in line with our analysis which assumes that *nämlich* is in fact always specificational and an explanative interpretation can only be derived pragmatically in the context. In a sentence like (38c) the distinction is not clear because an aim of a human action is very often at the same time its explanation. For precisely this reason we don't see any clear contrast between (38c) and (39).

(39)   *Maria hat John mit   einem bestimmten Ziel eingeladen, damit   er ihr **nämlich**   kocht.*
         Mary has John with a   particular   aim invited   so that he her namely   cooks
         'Mary has invited John with a particular aim, namely so that he cooks for her.'

5. Nämlich revisited

In this section we sum up the above observations and develop a lexical entry for *nämlich* that is superior to the one presented in Onea & Volodina (2009). In the next step we present some of the merits of this lexical entry.

5.1. Background assumptions

We assume that a discourse can be modelled in terms of a question hierarchy, as suggested in Roberts (1996). While the ultimate goal of a dialogue/discourse is to maximally increase the common ground, modelled as a context set (Stalnaker 1973, 1974), i.e. to achieve agreement on the ultimate question: *What is the way things are?*, or, *From all possible worlds which one is ours?,* for such a bold enterprise the interlocutors may choose better strategies than enumerating randomly ordered true propositions in an epic effort. One such strategy could be to narrow down the domain of investigation by means of sub-questions. For instance they may start by discussing the weather in Stuttgart or what people do in New York. Once such a sub-question is settled, they may again, find sub-sub-questions, which allow for a more systematic treatment of their new task, for instance they may start with people who live in a particular district etc. Once a particular sub-question is settled, they can proceed to the sister-question, e.g. after we find out what people in Manhattan are doing, we may go on to Brooklyn etc.

Such strategies can be modelled in terms of a QUD-stack. Once a strategy consisting of a number of sub-questions is chosen, all questions come on top of the QUD-stack. Obviously if a question is answered two things happen: we are able to clear it from the QUD-stack, hence the question immediately below it becoming the new QUD and we exclude a few possible worlds from the context set (assuming that we have a useful answer).

Such a model has obvious merits beyond providing a conceptually solid discourse model, since it is congruent to some conventional aspects of natural language: in particular, natural language often explicitly marks what question or what kind of question a particular utterance answers, hence there seems to be an interface between discourse structure and information structure, cf. Roberts (1996), Büring (2003) or Beaver & Clark (2008).

To make this idea more precise let us assume some definitions, which are nothing but a simplified version of the discussion in Roberts (1996). As a background assumption, we assume that questions are sets of alternative answers. For explicitness, we assume that the alternative answers needn't be exhaustive, as in Beaver & Clark (2008), however, all we say is in principle compatible with a partition semantics of questions in the sense of Groenendijk & Stokhof (1984).

In (40) we define a question stack as a set of pairs of questions and time indices (numbers). The numbers are used for ordering reasons, and the definition makes sure that the same question cannot appear with two different time indices in the stack. Nothing in the definition of the question stack makes sure that super questions and sub-questions are ordered properly. We have chosen this simplification, simply because for the semantics of *nämlich* this part of the QUD-stack problem is irrelevant, but of course, we are aware of the fact that a more complex model of discourse and QUD-stacks is needed. In (40a-c) three operations are defined on the simplified question stack. In (40b) and (40c) we define an operation that adds a question to a question stack and an operation that deletes a question from the question stack, while (40a) simply picks out the last element of the QUD-stack.

(40) Let A be a question stack iff $(\forall a,t)$ $(<a,t> \in A \rightarrow a$ is a question & t is a time index & $(\forall q,t_1,t_2)((<q,t_1> \in A) \rightarrow (t_2 \neq t_1 \vee <q,t_2> \notin A)))$

   a. $LAST(M) =_{def}$ the unique q such that $(\exists t)(<q,t> \in M$ & $\{<a,b>|<a,b> \in M$ & $b \geq t\} = \varnothing)$

  b. DELETE(M)=$_{\text{def}}$ M \ {<LAST(M),t>|t is a time index}
  c. ADD(Q,M) =$_{\text{def}}$ M $\cup$ {<Q,t>} where t is the actual time index

Given these definitions, we can think of a context as a pair containing a common ground (CG), which is a set of possible worlds, which are compatible with the knowledge states of the speaker and hearer, and a QUD-stack. Each communicative move has the effect of creating a new context. Communicative moves operate on the CG and the QUD-stack. An assertion, for instance, may be felicitous in a discourse, only if it is relevant to the last QUD, which, again, may be defined in terms of Roberts (1996) in more detail.

5.2. The meaning of nämlich

In (41) we propose a lexical entry for *nämlich*.

(41) $[\![nämlich]\!]$ = $\lambda r.\lambda p.$

  a. Felicity conditions:
   (i) $(\forall q)(q \in \text{LAST(QUD)} \rightarrow q \vDash p)$
   (ii) $(\exists X,Y)(X \neq Y\ \&\ X \in \text{ALT}(r)\ \&\ Y \in \text{ALT}(r)\ \&\ X \in \text{LAST(QUD)}\ \&$
     $Y \in \text{LAST(QUD)})$

  b. Semantic contribution:

   (i) $\text{CG}_{\text{new}} = r \cap \text{CG}_{\text{old}}$
   (ii) $\text{QUD}_{\text{new}} = \text{DELETE(QUD)}$

  c. Syntactic constraint:
   (i) At least a part of the expression, denoting *r* must be elliptical.

Nämlich, hence, combines with two propositions, as suggested by the structure in the example (42). *p* is the previous utterance and *r* is the proposition in which *nämlich* appears.

(42) *Peter liebt eine Frau. ~~Peter liebt~~ **nämlich** Maria.*
   Peter loves a woman Peter loves namely Mary
   'Peter loves a woman, namely Mary.'

   $[\![nämlich]\!]\,([\![Peter\ liebt\ Maria]\!])\,([\![Peter\ liebt\ eine\ Frau]\!])$

Nämlich is has two felicity conditions. The first one, (41a-i), is that the current question is about the previous utterance. This makes sure that *nämlich* doesn't answer any non-specificational question. Technically, this is modelled, by requesting that every element of the last element of the QUD-stack (which is a set of possible answers) entails the previous utterance p. Clearly, if all possible answers of a question entail a proposition, that question, is, in a sense, about that proposition. For instance, any answer to *Which woman does Peter love?* entails *Peter loves a woman*. The second, felicity condition (41a-ii), says that the clause, *nämlich* combines with, must be an answer to the current question under discussion. This is technically achieved by assuming that the focus alternatives of *r* (ALT(r) sensu Rooth 1992) include at least two elements which are also elements of the current question, i.e. the last element of the QUD-stack. One of these can, of course, be *r*.

We note, in passing, that under a partition semantics account, an exhaustification operator EXH, like the one in (43a), needs to be added to (41a-ii), as shown in (43b). At the same time, due to the nature of the exhaustification operator and the specific way the partition semantics for questions works, (43b) is equivalent to (43c), as the reader can reconstruct for herself.

(43) a. EXH(*a*, A) =$_{\text{def}}$ *a* & $(\forall b)$ ($b \in$ A & $b \neq a \rightarrow$ $\neg b$)

  b. $(\exists X,Y)(X \neq Y\ \&\ X \in \text{ALT}(r)\ \&\ Y \in \text{ALT}(r)\ \&\ \text{EXH}(X,\text{ALT}(r)) \in \text{LAST(QUD)}\ \&$
    $\text{EXH}(Y, \text{ALT}(r)) \in \text{LAST(QUD)})$

  c. $\text{EXH}(r,\text{ALT}(r)) \in \text{LAST(QUD)}$

Finally, we mention, that there is a difference between felicity conditions and presuppositions in our terminology. Felicity conditions cannot be accommodated. This reflects the intuition described above that *nämlich* is a *context marker* and not a full-fledged presupposition trigger.

The semantic contribution of a *nämlich*-utterance amounts to a simple assertion, (41b-i), and to the exclusion of the last question under discussion from the question under discussion stack, as required in (41b-ii).

We assume that there is a general discourse rule that makes sure that questions are removed from the QUD-stack as soon as they are answered or acknowledged to be unanswerable in a given discourse situation. Our stipulation that *nämlich* triggers the exclusion of the last question from the stack is unrelated, however, since excluding a question from the stack via a discourse rule involves a former negotiation: the speaker and the hearer must both accept the answer or the conclusion that no answer to the question can be given. By virtue of (41b-ii), however, no negotiation is necessary. The speaker hereby signals, that the information marked by *nämlich* answers the current question to the maximal possible extent, and he expects no further reaction from the hearer in this regard, in fact: the question, the hearer ought to address is the previous question in the stack, namely the one, that the previous utterance addressed. This way, the information marked by *nämlich* is not negotiable. Intuitively, this amounts to saying that the speaker is specifying what he meant by his own previous utterance, and this is – indeed – in his sole competence. If the hearer has any problem accepting that information he should rather comment on the previous utterance that, in a way, includes the information specified by *nämlich* already, at least as far as the speakers original communicative intentions are concerned. (Note, of course, that this rule can be broken for achieving special rhetorical effects, but we will ignore this in this paper.)

An additional syntactic stipulation is that at least some part of the background of *r* must be elided and recoverable from the context. This makes sure that if in (42) *Peter liebt* were overtly present the whole proposition that Peter loves Mary could only be a part of the first proposition (*r*) *nämlich* combines with. In other words, *nämlich* combines with a short (elliptical) answer to the current question.

The reconstruction of the ellipsis is an issue independent of our concerns in this paper. Note that we treat ellipsis as a purely technical issue here, we could just as well define a non-elliptical version of the lexical entry, in which the expression *nämlich* combines with is some term that combines directly with a question modelled as an incomplete proposition. There is a whole discussion about this issue, cf. recently Merchant (2004, 2008) vs. Ginzburg & Sag (2000) and Jacobson (2008). We remain neutral with regard to this issue. In our former approach, in Onea & Volodina (2009), we have argued for a non-elliptical analysis of short answers. The above shows that *nämlich* is not only compatible with elliptical answers, but, in fact, ellipsis is quite convenient, since it allows us to rule out explanative interpretations for embedded complement clauses without further stipulations.

It is important to note a very clear prediction of our analysis: since *nämlich* always combines with an elliptical clause according to our theory, in cases, in which there is an overt clause attached to *nämlich*, as in (1b), any overtly observable information structure of the corresponding clause will be irrelevant for the interpretation of *nämlich*. The reason is that due to its elliptic nature, the overt material *nämlich* attaches to is already a focus, and any embedded information structure inside this overt material is irrelevant for the matrix focus background structure of the whole *nämlich*-sentence.

One exception is discussed in Onea & Volodina (2009), namely the case of (10c), in which *nämlich* appears in an unexpected syntactic position (the *postinitial* position) and triggers a topic shift effect, originally observed in Breindl (2008). In our 2009 paper we have argued, that in this particular construction, the topical element is also part of the normally elided

background material (the reason for being overt being a contrastive feature), hence, being relevant for the global final information structure of the sentence. We do not go into details here, cf. also Karagjosova (*this issue*) for discussion of that argument and some empirical problems it faces. We concede that our 2009 argument regarding examples like (10c) needs refinement. We wish to address this problem in a distinct paper, however, since the analysis of postinitial topic shift is not only available with and, hence, not directly related to the semantics of *nämlich*.

5.3. Nämlich in pragmatic interpretation

Let us, at this point, consider some applications of the analysis given above and demonstrate how the different readings of *nämlich* can arise in the process of pragmatic interpretation starting out from the minimal semantic contribution given in (41). First we discuss an example for the specificational reading and in the next step we discuss how the explanative reading can be derived, where applicable. We start with the example (44), in which *nämlich* clearly has a specificational reading.

(44) *Peter hat ein Buch   gelesen,* **nämlich** *Harry Potter I.*
      Peter has a   book   read   namely   Harry Potter I
      'Peter has read a book, namely Harry Potter I.'

In the first step, we observe that when the speaker introduces the proposition that Peter has read a book into the common ground a number of possibilities are still open: Peter might have read "The Buddenbrooks" or "War and Peace" or "Harry Potter I" or some other book. Since all of these possibilities are open, if the discourse referent introduced by *ein Buch* is prominent enough in the discourse, e.g. because it is the answer to a former question under discussion or because the speaker intends to refer to a specific book, this gives rise to a specificational question, namely *Which book did Peter read?*

If such a question does not arise in the discourse, or, if the speaker cannot assume that this question is present in the discourse, he may not use *nämlich* to answer it. Only if this question is the current question under discussion, *nämlich* may be used.

Let us, now, assume that the correct syntactic representation of (44) is in (45).

(45) *Peter hat ein   Buch gelesen,* ~~*Peter hat*~~ **nämlich** *Harry Potter I* ~~*gelesen*~~.
      Peter has a   book read   Peter has namely   Harry Potter I read
      'Peter has read a book, namely Harry Potter I.'

It is easy to see that the felicity conditions given in (41) are fulfilled, since any alternative propositional answer to *Which book did Peter read?* entails that Peter read a book, and, in addition, *Peter read Harry Potter I* is an answer to *Which book did Peter read?* The proposition *nämlich* combines with is also elliptical, as required in (41c). Once *Peter read Harry Potter I* is added to the common ground, indeed, the question under discussion can be removed from the QUD-stack, since it is completely answered.

Note that in an absurd situation in which the current question were *What did John read?* the felicity conditions would not be satisfied, since not every alternative propositional answer to this question entails that Peter read some book, Peter also could have read a newspaper. In addition, if we assume that the elided material is not ~~*Peter hat*~~ ... ~~*gelesen*~~, the felicity conditions will, again, be violated, since this way, the proposition will be no answer to the current question, and, moreover, the elided material will not be recoverable from the context. Hence, given our lexical entry for *nämlich*, we get the correct interpretation and rule out incorrect interpretations.

Let us consider an explanative example such as (46).

(46) *Peter hat ein   Buch gelesen. Er war   **nämlich** in der Bibliothek.*
      Peter has a   book read   he was   namely   in the   library
      'Peter read a book, since he was in the library.'

In a typical situation in which this kind of example could occur, the speaker realizes after uttering that Peter has read a book that his utterance may not seem fully justified to the hearer for whatever reasons. Hence, a *why-* or rather *how come-* type of question arises. Such a question is represented as a set of alternatives of the type {I may truthfully utter that Peter has read a book, since I know that p | p is a proposition}. Of course, other questions could also arise, such as *Why did Peter read a book*? etc. crucially, however for such questions the continuation in (46) would not be an appropriate answer, given our general world knowledge: people don't read books because they are at the library, but rather they go to the library in order to read books. As soon as the correct question is established as the current question under discussion, the derivation will work out exactly as above and the inference we end up getting is: *I may utter that Peter has read a book, since I know that he was in the library*. With this inference being added to the common ground, the question is removed from the QUD-stack and we can go on with the old discourse topic. Note that, again, we had to assume an elliptical structure.

It should be clear that any kind of question that presupposes the first utterance can be the current question, and hence, not only explanative readings are predicted. Karagjosova (*this issue*) observes that not any kind of question will do, for instance, one cannot use *nämlich* to mark the answer to a question like *What happened aftewards*? In Onea & Volodina (2009) a question hierarchy based on salience in the context, has been proposed which make *why-* or *how-come*-questions particularly salient, hence indirectly ruling out the kinds of questions.

This problem doesn't even arise, however, under the present approach. *Nämlich* guarantees that the question under discussion is about the previous utterance and must be immediately removed from the QUD-stack (hence insuring a return to the previous question). This, on the one hand, yields discourse subordination in terms of SDRT (Asher & Lascarides 2003), and thereby rules out typical narrative questions such as *What happened afterwards*?. On the other hand, it rules out discourse subordinating but at the same time topic changing questions such as elaborative questions. This is because elaboration introduces new, negotiable information. Since, however, *nämlich*, by virtue of the fact that the question it answers disappears instantaneously from the discourse representation doesn't allow any negotiation for the pieces of information added elaboration is ruled out.

Karagjosova (*this issue*) argues that ruling out elaboration is, in fact, a false prediction. In (47), she argues, we have a clear case of elaboration. At the same time, this example also shows, in her view, that *nämlich* interacts with overtly observable foci in its scope. As depicted above, we predict this to be impossible. For (47), she argues that the question *Er hat ein Hemd befleckt* with focus on *ein Hemd befleckt* answers the question, (47a).

(47) *Fred hat   ein Kleidungsstück beschädigt.* [*Er*]$_T$ *hat **nämlich** * [*ein Hemd befleckt*]$_F$.
      Fred has   a   garment   damaged.   He   has   namely   a shirt   stained.
      'Fred has damaged a piece of garment. He stained a shirt.'

    a. *What did Fred specifically do to damage a garment*?

We do not consider this example to be counterevidence for our theory, however. The continuation in (47) doesn't answer *What did Fred do?*, even though the overtly available sentence does. In our view, the superordinate question at the level of which *nämlich* is interpreted is something like *How come you can truthfully assert that Fred damaged a garment*? and the local information structure of the overt clause (which is only the non-elliptical part of the actual *nämlich*-clause) marks an embedded strategy of answering this superordinate question. If

this is correct, (47) is not an instance of elaboration, but a somewhat opaque case of explanation, and, hence, *nämlich* also does not interact with the local information structure.

We acknowledge that in such cases our rigid distinction between elaboration and explanation might seem somewhat superfluous for practical purposes. However, we think that one shouldn't generally allow elaboration as an interpretation option for *nämlich* inside matrix clauses for this would make predicting the correct reading of (36b), repeated here as (48), very hard or even impossible. The main problem with this example is that Mary being clever is just not a likely explanation for Peters believing something, but at the same time a very likely belief content. Still, (48) simply forces an explanative interpretation. The reader can reconstruct for herself, how our own theory predicts an explanative reading for (48).

(48)   P*eter glaubt   etwas,   Maria ist **nämlich**   klug.*
       Peter believes something Mary is namely   clever
       'Peter believes something for/since Mary is clever.'

6. Conclusion and further research

In this paper we have solved an empirical puzzle about *nämlich*, i.e. that it has an explanative readings whenever it appears inside a matrix clause but looses this reading in any other case. The key argument is that *nämlich* always specifies the answer to an implicit question about the previous utterance. Hence, *nämlich* has a specificational meaning. The explanative reading arises in the process of pragmatic interpretation if the implicit question that is answered by the clause *nämlich* is attached to is a *why-/how come*-question.

What we would like to highlight in this concluding section is the question what we generally learn from this analysis and how it can be applied to other specificational particles. We will show that our analysis easily transposes to the German *und zwar*.

Recall that there are two main differences between *und zwar* and *nämlich*. First, *nämlich* must give complete answers to the specificational question, while *und zwar* allows for incomplete answers, as shown in (28), repeated here for convenience as (49). The second difference is that *und zwar* can specify unarticulated constituents as shown in (7) repeated here as (50).

(49)   *Vor   der Tür steht   eine Frau.   **Und zwar** / *nämlich* eine Freundin von mir.*
       In front the door stands a   woman namely   namely   a   girlfriend of mine
       'A woman stands in front of the door, namely a girlfriend of mine.'

(50)   *Peter hat John verprügelt. **Und zwar** mit   einem Besen.*
       Peter has John beaten   namely   with a   broom
       'Peter has beaten up John, namely with a broom.'

We can easily account for both of these differences by assuming that, as opposed to *nämlich*, the existence of a special kind of current question is not a felicity condition for *und zwar* but rather a presupposition. So, accommodation is possible. In addition we may remove the constraint that the the question *und zwar* answers must be deleted from the QUD-stack. The result is given in (51).

(51) $[\![$ *und zwar* $]\!]=$ $\lambda r.\lambda p.$

   a. Presupposition:
      (i) $(\forall q)(q \in \mathrm{LAST(QUD)} \to q \vDash p)$
      (ii) $(\exists X,Y)(X \neq Y$ & $X \in \mathrm{ALT}(r)$ & $Y \in \mathrm{ALT}(r)$ & $X \in \mathrm{LAST(QUD)}$ &
            $Y \in \mathrm{LAST(QUD)})$

   b. Semantic contribution:
      (i) $\mathrm{CG}_{new} = r \cap \mathrm{CG}_{old}$

    c. Syntactic constraint:
       (i)   At least a part of the expression, denoting *r* must be elliptical.
       (ii) *und zwar* must c-command its semantic argument

This accounts for the third striking property of *und zwar*, as well, i.e. that it can be used to start a discourse. The explanation is this: the question *What is the problem? / How can I help you?* can be accommodated for *und zwar* and since the question is still open after the processing of the *und zwar*-sentence/-phrase the whole discourse can elaborate on this question.

Note, that the syntactic constraint in (51c-ii) also accounts for another, obviously even more important, difference between *nämlich* and *und zwar*, namely, that *und zwar* cannot have an explanative reading. This falls out directly from the generalization given in (37): since *und zwar* must c-command its semantic argument, it automatically blocks its illocutionary force that would be needed for an explanative interpretation. How this exactly relates to the above mentioned fact that *und zwar* can start very special kinds of dialogues, is still mysterious, however. We suspect that those cases involve extreme syntactic disintegration that leads to a bleached *und zwar* interpretation that ignores this constraint.

The semantic difference between *und zwar* and *nämlich*, hence, boils down to the difference between a presupposition trigger and a context marker in the sense of Zeevat (2003). This result seems natural, since most discourse particles in the narrower sense specified in section 1 are in fact context markers, i.e. they trigger presuppositions about the shared knowledge between interlocutors, about their communicative aims and generally about information states and information retrieval strategies, such as question hierarchies, but these presuppositions cannot be accommodated. The theoretical question should be, hence, raised, whether there is a more general similar pattern that can be observed across languages with regard to specificational particles in both types of presuppositional expressions. Onea (2010) shows that an extension Hungarian *éspedig* and *mégpedig* is possible along the line of our analysis.

We hope to have shown that the analysis of *nämlich* presented in this paper not only helps solve the empirical puzzle we started with in a straightforward and comprehensive manner but also opens the way for a wider analysis of so called specificational particles. We also hope that the analysis of further specificational particles will help in solving the remaining puzzles about *nämlich* in future research.

7. References

Asher, Nicholas & Alex Lascarides. 2003. *Logics of Conversation*. Cambridge/New York: Cambridge University Press.

Averintseva-Klisch, Maria. 2008. *Rechte Satzperipherie im Diskurs. NP-Rechtsversetzung im Deutschen*. Tübingen: Stauffenburg. (=Studien zur deutschen Grammatik 78).

Beaver, David and Brady Clark. 2008. *Sense and Sensitivity*. Oxford: Blackwell.

den Besten, Hans. 1989. *Studies in West Germanic Syntax*. Amsterdam: Atlanta.

Blakemore, Dianne. 1996. Are Apposition Markers Discourse Markers. *Journal of Linguistics* 32: 325-347.

Breindl, Eva. 2008. Die Brigitte nun kann der Hans nicht ausstehen. Gebundene Topiks im Deutschen. *Deutsche Sprache* 36: 27-49.

Büring, Daniel. 2003. On D-Trees, Beans, and B-Accents. *Linguistics & Philosophy* 26: 511-545.

Den Dikken, Marcel. 2005. Specificational Copular Sentences and Pseudoclefts. In M. Everaert and H. Riemsidjk (eds.), *The Blackwell Companion to Syntax*, Volume 4, Chapter 61. Oxford: Blackwell.

Fanselow, Gisbert. 2003. Münchhausen-Style Head Movement and the Analysis of Verb Second. *UCLA Working Papers in Linguistics*.

Frohning, Dagmar. 2007. *Kausalmarker zwischen Pragmatik und Kognition. Korpusbasierte Analysen zur Variation im Deutschen.*. Tübingen: Niemeyer. (=Linguistische Arbeiten 516).

Gärtner, Hans-Martin. 2000. Are there V2 Relative Clauses in German. *Journal of Comparative Germanic Linguistics* 3: 97-141.

Gärtner, Hans-Martin. 2002. On the Force of V2 Declaratives. *Theoretical Linguistics* 28: 33-42.

Gerbl, Niko. 2009. *An Analysis of Pseudoclefts and Specificational Clauses in Head-driven Phrase Structure Grammar*. Ph. D. thesis, University of Göttingen.

Ginzburg, Jonathan and Ivan Sag. 2000. *Interrogative Investigations: The Form, Meaning and Use of English Interrogatives*. Stanford: CSLI publications.

Granito, Marius. 1984. Nämlich, und zwar: étude syntactique et sémantique. *Cahiers d'Études Germaniques* 8: 165-209.

Groenendijk, Jeroen and Martin Stokhof. 1984. On the semantics of questions and the pragmatics of answers. In: F. Landman and F. Veltman (eds), *Varieties of Formal Semantics*. Dordrecht: Foris, 143-170.

Foris, 143-170. Philosophy 5, 175-233.

Gyuris, Beáta. 2009. Sentence-types, Discourse Particles and Intonation in Hungarian. In A. Riester and T. Solstad (eds.), *Proceedings of SUB13*, Stuttgart, 157-170.

Heller, Daphna. 2005. *Identity and Information: Semantic and Pragmatic Aspects of Specificational Sentences.* Ph. D. thesis, Rutgers University.

Jacobson, Pauline. 2008. Answers in short. Rutgers Workshop in Semantics. Brown University.

Kratzer, Angelika. 1999. Beyond `ourch' and `oops'. How Descriptive and Expressive Meaning Interacts. In: Cornell Conference on Theories of Context Dependency. Cornell University. Ithaca, NY. Downloadable at http://semanticsarchive.net/Archive/WEwNGUyO/.

Merchant, Jason. 2004. Fragments and Ellipsis. *Linguistics and Philosophy* 27: 661-738.

Merchant, Jason. 2008. Variable Island Repair under Ellipsis. In K. Johnson (ed.), *Topics in ellipsis*, 132-153. Cambridge: Cambridge University Press.

Müller, Gereon. 2004. Verb-Second as vP-First, *Journal of Comparative Germanic Linguistics* 7, 179–234.

Nilsen, Oystein. 2003. Eliminating Positions. Ph.D dissertation, Utrecht University.

Onea, Edgar. 2010. Dimensionen der Spezifikation. Talk given at SPSW Göttingen.

Onea, Edgar and Anna Volodina. 2009. Der Schein trügt nämlich. *Linguistische Berichte* 21: 291-321.

Pasch, Renate. 2008. Metakommunikative Konnektoren. MS. IDS Mannheim.

Pasch, Renate. 2009. Nochmals „nämlich" vs. „und zwar". Talk given at Satzverknüpfung und Textstruktur" in Berlin (ZAS).

Potts, Chris. 2005. *The Logic of Conventional Implicatures*. Oxford Studies in Theoretical Linguistics. Oxford: Oxford University Press.

Reis, Marga. 1997. Zum syntaktischen Status unselbstständiger Verbzweit-sätze. In C. Dürscheid, K. H. Ramers, and M. Schwarz (Eds.), *Sprache im Fokus. Festschrift für Heinz Vater zum 65. Geburtstag*, 121-144. Tübingen: Niemeyer.

Roberts, Craige. 1996. Information Structure in Discourse. Towards an Integrated Formal Theory of Pragmatics. In J.-H. Yoon and A. Kathol (eds.), *Ohio State University Working Papers in Linguistics*, Vol. 49, 91-136.

Romero, Maribel. 2005. Concealed Questions and Specificational Subjects. *Linguistics and Philosophy* 28: 687-737.

Stalnaker, Robert. 1973. Presuppositions. *Journal of Philosophical Logic* 2: 447–457.

Stalnaker, Robert. 1974. Pragmatic Presuppositions. In: M. Munitz and P. Under (eds.), *Semantics and Philosophy*, New York: New York University Press. 197–213.

Tuckenbrodt, Hubert. 2006. On the Semantic Motivation of Syntactic Verb Movement to C in German. *Theoretical Linguistics* 32: 257-306.

Zeevat, Henk. 2002. Explaining Presupposition Triggers. In K. van Deemter and R. Kibble (eds.), *Information Sharing*, 61-87. CSLI publications.

Zeevat, Henk. 2003. Particles: Presupposition Triggers, Context Markers or Speech Act Markers. In R. Blutner and H. Zeevat (eds.), *Optimality Theory and Pragmatics*. New York: Palgrava-McMillan.

Zwart, C. Jan-Wouter. 2001. Syntactic and Phonological Verb Movement. *Syntax* 4:36-62.