Specificity and Referential Persistence – An Experimental Study of Indefinites in German

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1 Abstract

Indefinite noun phrases introduce new discourse referents equipped with different referential and discourse properties. Indefinites can show wide or narrow scope behavior and they can be interpreted as specific or non-specific. Indefinites also show different discourse effects such as different degrees of discourse prominence. In this paper we present the results of two psycholinguistic pilot studies. We present new empirical evidence that German indefinites with the indefinite article *ein* (‘a(n)’) and with the indefinite demonstrative *dieser* (‘this’) show different degrees of discourse prominence. The high discourse prominence of *dieser* can be correlated with the referential property of being specific, while the lower discourse prominence of the indefinite article *ein* corresponds to the lower likelihood of being specific.

2 Indefinite *dieser* in German

We assume that German indefinite *dieser* has the same main properties as English indefinite *this*: (i) it is a specific or referential indefinite determiner (Prince 1981, Ionin 2006), passing the classic tests for indefiniteness and specificity (Fodor & Sag 1982), as exemplified in (1). Indefinite *dieser* allows for specific readings only, while the indefinite article *ein* allows for specific and non-specific readings. Secondly, (ii) it introduces a discourse- and addressee-new referent into the discourse which (iii) is highly relevant for the discourse in that it is referred to frequently after its introduction (Wright & Givón 1987). The example in (2) illustrates that the discourse referent introduced by indefinite *dieser* has to be mentioned again in the subsequent discourse. If it is not mentioned again, the text becomes less coherent or even unfelicitous, as in (2b).

(1)  a. *Eva will diesen Film über Eliade sehen.*
    ‘Eva wants to watch this movie about Eliade.’ [specific]
b. *Eva will einen Film über Eliade sehen.*
    ‘Eva wants to watch a movie about Eliade.’ [specific or non-specific]
Gestern im Kino hat mich **dieser Fremde** angesprochen.

‘Yesterday in the movies this stranger talked to me.’

a. **Er war sehr nett.**

‘He was very nice.’

b. ‘**Dann bin ich nach Hause gegangen und habe ein Buch gelesen.**’

‘Then I went home and read a book.’

3 **Discourse Prominence as Referential Persistence**

In order to make the discourse prominence of indefinites a measurable concept, we adopted one parameter underlying discourse prominence (Givón 1983): **referential persistence** or the number/sum of anaphoric expressions which are used to refer back to the discourse referent (cf., Arnold 1998, Chiriacescu & von Heusinger 2010, Gernsbacher & Shroyer 1989).

4 **Pilot Study 1**

In pilot study 1 we measured the referential persistence of the two indefinite determiners in neutral contexts, which allowed a specific and a non-specific interpretation for the referent marked with **ein**. We measured the referential persistence in a small story continuation task. The participants (n=20) were asked to read 2 short test items in which referents were introduced by either **ein** or **dieser** (between subject variation) and to provide continuation-stories of five sentences, which were then coded with respect to referential persistence. We expected to receive higher values of referential persistence for the versions with indefinite **dieser**, since it forces, in contrast to **ein**, unambiguously specific interpretations for its referents. (3) gives an example of one test item in the **dieser**-version with an example response of one of the participants, coded with respect to referential persistence.

(3) **Das Essen in dem Restaurant war wirklich total lecker, aber ziemlich teuer. Als ich nach fünf Gängen beim Dessert war, hab’ ich gesehen, wie **dieser Mann** Sekt bestellte.**

‘The food in the restaurant was really delicious but quite expensive. When I had dessert, after five courses, I saw how this man ordered champagne.’

S1: **Er** hatte eine riesige Nase. ‘**He** had a big nose.’
S2: **Deshalb starre ich ihn immer wieder an.** ‘That’s why I stared at **him** all the time.’
S3: **Als er** den Sekt trank, verschüttete **er** etwas. ‘**When he** drank the champagne, **he** spilled a bit.’
S4: **Die Krawatte war bekleckert.** ‘**The tie had stains.**’
S5: **Dann musste ich grinsen.** ‘**Then I had to grin.**’

The results confirm the expectations and strongly suggest that there is a correlation between the sentence semantics of indefinite determiners (specificity) and their
discourse behavior in terms of referential persistence. The mean value of referential persistence per sentence (that is the average number of how many items were used to refer back to the referent per sentence) provided by the participants for indefinite *dieser* (0.58) considerably exceeds the value for *ein* (0.16) (see figure 1 below, first column ‘neutral contexts’).

5 Pilot Study 2

In pilot study 2 we cross-classified specificity and the (lexical) type of expression (indefinite *dies* vs. indefinite article *ein*), i.e. we forced either specific or non-specific readings for both indefinite *dieser* and *ein*. Our goal was to receive stronger support for the findings of pilot study 1, in which we detected two problems: (i) we were not able to clearly differentiate between a potential influence of the indexical nature of the demonstrative on the discourse prominence and (ii) we did not control for the specificity of noun phrases with the indefinite article *ein* and *dieser*, assuming that indefinite *dieser* is always specific (as it is reported in the literature on English indefinite *this* (Prince 1981, Fodor & Sag 1982, Ionin 2006)) whereas the indefinite article is ambiguous, with a preference for non-specific interpretations. However, we found that *dieser* can receive non-specific interpretations under propositional attitude verbs with selected descriptive content, such as *Märchenprinz* (‘fairytale prince’) in (5).

5.1 Design

Thus, in pilot study 2 we created unambiguously specific and non-specific contexts for the two indefinite determiners which were embedded under propositional attitude verbs. The specific context was triggered by referring to the indefinite with a personal pronoun in the past tense in the subsequent sentence after its introduction, see (4).

In order to force non-specific readings for both determiners we offered a continuation sentence after the introduction of the indefinite, in which its referent was picked up by a personal pronoun under a modal operator, which is an instance of modal subordination (Karttunen (1969/1976)), see (5).

The design of the follow up experiment was again a story continuation task, similar to the one described above. The participants (n=28) were asked to read the test items and to provide 6 continuation sentences which were coded with respect to referential persistence. Each participant saw 6 test items. The realization form of the target referents in the test items was manipulated and varied between *ein* and *dieser*-marked referents in either forced specific (test items 1 – 4) or forced non-specific (test item 5 – 6) readings (inter subject variation). An example response to the test item in (5) (in the *dieser*-version) coded for referential persistence is given in (6).

(4) Peter will nächste Woche eine/diese Spanierin besuchen. Er hat sie letztes Jahr in Barcelona kennengelernt.
‘Peter wants to marry a/this Spaniard next week. He met her last year in Barcelona.’

(5)  
‘Jenny is still single. She hopes to meet a/this fairytale prince at one point. He should be good looking and charming.’

(6)  
S1: Am besten soll er auch noch reich sein.  
S2: Die hat vielleicht Vorstellungen.  
S3: Und anstatt sich mal auf die Suche zu machen hockt sie nur zu Hause…  
S4: Sie geht ja auch nie weg, in Discos oder so.  
S5: Als würde der auf einmal vor ihrer Tür stehen  
S6: Am besten hat er noch einen Schimmel.  

‘He should be rich as well.’  
‘She has lots of fantasies.’  
‘And she always just sits at home, instead of looking for.’  
‘She never goes out, to clubs or the like.’  
‘As if he stood in front of her door one day.’  
‘It would be best if he had a white horse as well.’

5.2 Results

The results for referential persistence in pilot study 2 are depicted and compared to the results of pilot study 1 in figure 2 below.

Fig.1: referential persistence in neutral contexts (pilot study 1, test item 1 (in (3)) mean values/sentence), specific contexts (pilot study 2, mean values / sentence of test items 1-4) and non-specific contexts (pilot study 2, mean values / sentence of test items 5+6)

1. The increase of the values for referential persistence in the [+specific] condition for dieser, compared to the neutral cases, was expected, since the critical referents were referred to again one more time in the test items in pilot study 2, increasing the general salience of the referents.

2. Comparing the values for dieser in the [+specific] and dieser in the the [-specific] column, we see that the values for referential persistence of specific dieser (0.82) and non-specific dieser (0.28) in pilot study 2 differ strongly. The same holds for specific
ein (0.26) and non-specific ein (0.025). The difference between specific and non-specific readings of both dieser and ein confirms the hypothesis that specificity correlates with the expression’s discourse prominence in terms of referential persistence.

3. Comparing the values for dieser and ein within the either [+specific] condition in pilot study 2, we find that dieser (0.82) still receives higher values compared to ein (0.26). The same holds for the [–specific] readings. Thus, independent of specificity, the values for referential persistence for dieser are always higher compared to the one of ein, even in the non-specific readings. This allows the conclusion that for indefinite dieser additional factors increasing the degree of referential persistence must be at work as well. These additional factors might most probably be related to the indexical nature of demonstratives

6 Conclusion

Asking questions after the interrelation between referential properties with respect to sentence semantics (specificity) and discourse effects of indefinite determiners, we investigated the indefinite article ein and the indefinite demonstrative determiner dieser in German and can come up with the following conclusions: firstly, we showed that dieser usually behaves like a specific indefinite expression. Secondly, in pilot study 1, we came up with quantifiable means to prove that indefinites marked with specific indefinite dieser introduce discourse referents equipped with a greater degree of referential persistence compared to [+/ - specific] ein. This suggested that specificity and a high degree of referential persistence are correlating parameters. Thirdly, the results of the follow-up pilot study 2 which allowed us to control for specificity, supported these findings and strongly suggest that specificity is one factor that can be correlated with a high degree of referential persistence of indefinite determiners and that for indefinite dieser further parameters, independent of specificity must be at work.

7 Outlook

We are currently annotating the data of a large-scale experiment which focuses on the discourse behavior of ein vs. dieser in exclusively specific contexts, in order to statistically validate the tendencies suggested by the findings above. In this experiment we include more parameters underlying the concept of discourse prominence such as topic shift potential (Chiriacescu & von Heusinger 2011), more participants, more balanced and parallel test items and a more elaborate design including inter subject variation.
References


