

# German Demonstratives and Topic Questions

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## Abstract

German has two demonstrative series, the *der* (*die, das*) series and the *dieser* (*diese, dieses*) series. Both have been claimed to be topic shifters, taking up a non-topical antecedent and promoting it to topichood. However, *der* can form topical referential chains, while *dieser* cannot. We operationalize discourse topichood via questions and provide evidence from a corpus study and an acceptability study that while *dieser* is indeed sensitive to topichood and avoids topical antecedents, *der* is compatible with topical antecedents. We hypothesize that only *dieser* is a discourse topic shifter, while *der* marks a sentence topic.

**Keywords:** linguistics; attention; discourse; language production; language understanding

## Introduction

Directing an interlocutor's attention towards an object of interest and creating joint attention is crucial for establishing reference and shared understanding in communication (Clark 1978, Moll 2023). Human language has developed a variety of devices to direct attention towards objects, both physical as well as objects in a discourse representation, e.g. previously mentioned entities, agreed-upon states of affairs, or what is currently talked about. Demonstratives are some of the most fundamental devices in this regard, as they belong to the most frequent lexical items in many languages, are acquired early in infancy, crosslinguistically nearly universally attested and closely linked to pointing gestures (Diessel 2006, Levinson 2018). In this contribution we are concerned with how demonstratives in German contribute to establishing shared attention by looking at their sensitivity to contextual cues to what is currently talked about in a discourse, or topichood.

German has two demonstrative series, the *der* (*die, das*) series and the *dieser* (*diese, dieses*) series. Apart from being used deictically, they can also be used anaphorically with both animate and inanimate antecedents. In their pronominal (as opposed to adnominal) anaphoric use, they have been analysed as differing from the personal pronoun *er* (*sie, es*) in contexts with multiple antecedents: while the personal pronoun shows a (flexible) preference for antecedents denoting prominent discourse referents, the demonstratives have a more rigid preference for antecedents that are less prominent (Kaiser, 2011, Schumacher et al., 2016, Bader & Portele, 2019), with discourse prominence defined as in von Heusinger & Schumacher (2019). Parameters influencing

prominence ranking include linear position of antecedents (Bosch & Hinterwimmer, 2016), grammatical role (Bosch et al., 2007), topichood (Bosch & Umbach, 2007), thematic role (Schumacher et al., 2016, Patterson & Schumacher, 2021), and contrast (Çokal & von Heusinger, 2024). The two demonstrative series have been described as differing in terms of formality/register, with *dieser* being preferred in a more formal written style (Patil et al., 2020), and in terms of sensitivity to perspective-taking, with only *der* showing a dispreference to having the most prominent perspective-taker as antecedent, but not *dieser* (Patil et al., 2023). Most pertinently for the present contribution, the demonstratives have been analyzed to function as topic shifters, i.e. that they pick up an antecedent that was non-topical in the discourse up to the current sentence and promote it to topichood from the current sentence onwards. This analysis has been made for both demonstratives (Weinrich, 1993/2007, Abraham, 2002, Ahrenholz, 2007) and individually for *der* (Bosch & Umbach, 2007) and for *dieser* (Patil et al., 2023). However, there are differences in topichood behaviour between the two types of demonstrative pronouns. While *der* can form topical referential chains across longer discourse sequences in which it occurs coreferentially in several adjacent sentences (Weinrich, 1993/2007, Ahrenholz, 2007, Repp & Schumacher, 2023), *dieser* can felicitously only occur once in a referential chain. This lets us suspect that only *dieser* actually shifts attention at a more global level, while *der* acts much more locally (cf. Buchholz & von Heusinger, 2024). Based on these observations from the literature, our contribution hypothesizes that only *dieser* functions as a topic shifter, because it is sensitive to global discourse structure, while *der* only locally marks that a referent is a topic in the current sentence and is insensitive to the more global discourse structure. We provide evidence via a corpus study and an acceptability (comprehension) experiment in both of which we operationalize topichood via questions.

The literature distinguishes between two types of topics acting at a more local and a more global level: the sentence or aboutness topic (Reinhart, 1981), and the discourse topic (van Dijk, 1977). The sentence topic is defined as the referent that a sentence is about in a given context. It often coincides syntactically with the subject of a sentence and semantically with the (proto-)agent (Givón, 1983). Crosslinguistically, the most persistent tendency seems to be to place a topical constituent sentence- or utterance-initially (Roberts, 2011). For German, a constituent in the prefield, i.e. before the verb

in a main clause, is very compatible with an interpretation as sentence topic (Frey, 2005). As its name implies, the sentence topic has local scope, restricted to the current sentence and its immediate context. The discourse topic, on the other hand, is what a larger chunk of discourse, i.e. a paragraph, is about. It thus acts at a more global level of discourse management. As such it can be coreferential with a sentence topic that is continued across a sequence of sentences, but it can also be more abstract and does not have to correspond to a single constituent in a given sentence (Reinhart, 1981). Instead, it serves to maintain a sense of thematic continuity (Givón, 1983) across a sequence of sentences. Roberts (2011) equates the discourse topic with the *question under discussion* (QUD, Roberts, 1996/2012) and thus relates it to the idea that individual sentences in a discourse serve to answer (implicit) sub-questions that are hierarchically subordinate to a larger super-question connected to a paragraph. In our study, we expand on this idea by operationalizing topichood via questions explicitly posed in a discourse, and we combine this with our hypotheses based on the findings on the different behaviours of *der* and *dieser* in referential chains. The idea that different demonstratives refer to more local or more global levels of discourse is not new. Sidner (1979: 198) already observed that different demonstratives can shift attention at a more local or global level. She compares the function of propositional *this* and *that*. If both are used in a contrast, *this* refers to the “main focus” or “main concern” (what we would now call discourse topic or the superordinate QUD), while *that* refers to the “secondary focus” or “secondary concern”. We think that German *dieser* and *der* have a similar functional distribution, but they are not only used for inanimates, but also for animate referents, as in our examples. *Dieser* is sensitive to a more global level of discourse structure and shifts attention away from the discourse topic (=superordinate QUD), while *der* is insensitive to this more global level and only marks topichood locally, i.e. a sentence topic. This is the way in which we refer to ‘more global’ and ‘more local’ discourse structure, parallel to more and less superordinate QUDs. We do not mean global in the sense of ‘high-level’ cues such as perspective, vs. local, or ‘low-level’ cues. The predictions we derive are that in contexts in which a discourse topic is clearly established via a question, *der* should be able to pick up antecedents that are coreferential with the topical referent, because *der* only marks a sentence topic and is not sensitive to the more global discourse structure. *Dieser*, on the other hand, should not be able to pick up such antecedents, because its function is to shift the topic and it is incompatible with a context in which it is continued. An example like (1) from the German newspaper *Spiegel Online*<sup>1</sup> demonstrates that *der* can indeed pick up an antecedent that has been made into a topic by the topic question *Und Bundestrainer Hansi Flick? ‘And (what about) national coach Hansi Flick?’*.

- (1) Die Vorstellung der deutschen Nationalmannschaft gegen Japan war desaströs. Beim 1:4 zerfiel das Team zum Schluss in seine Einzelteile. Und Bundestrainer Hansi Flick? Der möchte weitermachen.  
*The German national team’s performance against Japan was disastrous. During the 1:4 game the team fell apart towards the end. And national coach Hansi Flick? Der wants to continue.*

## Corpus Study

We conducted a corpus study to gather evidence for our hypothesis that *der* can pick up such an antecedent that has been made into a topic via an explicit topic question like in (1), while *dieser* cannot. We ran a corpus search in the tagged newspaper archive (TAGGED-T öffentlich, containing material from the 1990s and 2000s) of the German national reference corpus *DeReKo* (Institut für Deutsche Sprache, 2019), searching for target sentences like *Und der Bundestrainer? ‘And (what about) the national coach?’* (the search term was “Und” /+w1 MORPH(ART) /+w1 MORPH(N nn) /+w1 \?’). From the 2.462 total hits we analyzed the first 478 (excluding doublets) that were real instances of our target sentence type, from several different German-language newspapers from Germany, Switzerland and Austria. We looked at the sentence following the target sentence and analyzed whether it contained a referential expression whose antecedent is the target referent asked about in our target sentence as well as the form of that referential expression. The results are given in Table 1. The first 4 rows list the cases when the target expression was picked up via a pronominal expression. “NP” and “NP-bridge” count those cases when the target referent was picked up again by a full NP, either the same NP as in the target sentence or an NP derived at via bridging, e.g. *Nachwuchs – Lehrlinge* (‘next generation’ – ‘trainees’). “Other” means that an anaphoric relation was created but not directly to the target referent, e.g. via a propositional anaphor. “None” means that the target referent was not picked up in the subsequent sentence.

Table 1: Results of the corpus study

Type of referential expression	Counts	%
personal pronoun	73	15.27
<i>der</i> -demonstrative	79	16.53
<i>dieser</i> -demonstrative	3	0.63
zero pronoun	65	13.6
NP	38	7.95
NP-bridge	69	14.44
other	23	4.81
none	128	26.78
total	478	100

<sup>1</sup> <https://www.spiegel.de/sport/fussball/fussball-deutschland-zeigte-bei-der-niederlage-gegen-japan-einenoffenbarungseid-a-571d78f9-02a0-49a1-a4a9-89e81346b8a9> (10.09.2023)

As can be seen from the results, the referent established as topic by the target sentence was directly picked up again in the following sentence in 68.41% of all cases (excluding “none” and “other”). This was done via a pronoun, including a zero pronoun, in 46.03% of all cases. Within this group, personal pronouns (15.27%), zero pronouns (13.6%) and *der*-demonstrative pronouns (16.53%) were all used with broadly the same frequency, but *dieser*-demonstrative pronouns were used far more rarely, in only 0.63% of all cases. We take it as validation of our approach that the number of zero pronouns is so high here, since only topical pronouns can be omitted in German, but not all pronouns can (‘topic drop’ but no ‘pro-drop’, cf. Trutkowski, 2016, Schäfer, 2021). This is evidence that the context established by this type of question really turns the target referent into a topic. The results thus indicate that *der* (and the personal pronoun) is similarly compatible with such cases as the zero pronoun is, while *dieser* is clearly much more infrequent. To put this into broader perspective, we tried to compare the relative frequencies of the *der*-demonstrative pronoun and the *dieser*-demonstrative pronoun in this context with their overall relative frequencies. However, this is not entirely straightforward. We searched for all cases of pronominal *der* and *dieser* in their male and female forms in the same corpus archive (search term ‘der/[die/dieser/diese] /w0 MORPH(PRON dem sub)’). We did not include neuter forms because *das* is the propositional anaphor in German and therefore a special case. Even though the TAGGED-T archive is tagged and allows to specify looking for these word forms only in their use as demonstrative pronoun, we still received many results especially for *der* and *die* that were actually instances of use as articles or relative pronouns, and some for *diese/r* that were adnominal uses. Thus the comparison has to be taken with a grain of salt. For what it is worth, we found 73696 cases of forms of *der/die*, and 26664 cases of forms of *diese/r*. This ratio of 2.76 : 1 compares to 79 cases of *der* vs. 3 cases of *dieser* in Table 1, a ratio of 26.3 : 1. Even with the caveats mentioned, we cautiously take this as indication that *dieser* compared to *der* is less frequent in our target context than in general. Overall, we therefore take the corpus results as evidence in favour of our hypothesis that *der* is compatible with referents that are topics, while *dieser* is not used in such cases because it is a topic shifter and avoids antecedents that are already topics.

### Acceptability Study

We aimed to gain further evidence for our hypotheses by conducting an acceptability experiment in which we directly compared the two demonstrative pronouns in their ability to pick up antecedents that we established as topics, again via questions. We also manipulated contexts so that they allowed us to test for sensitivity to topichood at a more global and a more local level.

### Materials & Methods

We constructed contexts in which two human referents were introduced via proper names in a first sentence (S1), a female referent as initial subject (*Anna* in Table 2), and a male target referent (*Peter*) as a prepositional object. We introduced the target referent always as a prepositional object to avoid cueing it as topic already at this point. A second sentence (S2) introduced an inanimate referent denoting an event or situation in a presentational construction (*Auseinandersetzung*). The third sentence (S3) then was a question asking either about the human male target referent in relation to the event referent (*er*-condition) or about the event referent that the two humans were involved in (*neutral*-condition). We assumed that this question would make either the male referent (*er*-condition) or the event referent (*neutral*-condition) into the discourse topic. In the question, we always mentioned all three referents, so that all anaphoric relations could be felicitously resolved. The final sentence, the critical sentence, then had a demonstrative pronoun (*der* in the *er*-condition, *dieser* in the *dieser*-condition) in initial sentence position. It was always unambiguously coreferential with the target referent (all other referents in the context were either female or neuter). The female referent was also mentioned again with a form of the personal pronoun. Table 2 gives an example item in all conditions.

Table 2: Example item for the acceptability study

<b>Context:</b>	
S1: Anna arbeitet mit Peter; im gleichen Team. S2: Heute Morgen gab es eine große Auseinandersetzung. <i>Anna works with Peter in the same team. This morning there was a big argument.</i>	
<b><i>er</i>-condition</b>	<b><i>neutral</i>-condition</b>
S3: Und Peter, was hat er zur Auseinandersetzung mit Anna beigetragen? <i>And Peter, what did he contribute to the argument with Anna?</i>	S3: Und die Diskussion von Anna mit Peter, worum ging es? <i>And the discussion by Anna with Peter, what was it about?</i>
<b>Critical sentence</b>	
Der/Dieser <sub>i</sub> hat sie beim Chef angeschwärzt und dann wurde ihr Gehalt gekürzt. <i>Der/Dieser<sub>i</sub> ratted on her to the boss and then her salary got reduced.</i>	

The experiment had a 2x2 design, with two conditions: *context* with the two levels *er* and *neutral*, and *pronoun* with the two levels *der* and *dieser*. We created 24 critical items in 4 conditions and distributed them across 4 lists via Latin-square design such that each item only appeared once per list and all conditions were distributed equally across the lists. Each list also contained 24 filler items with similar structure but full noun phrases in the critical sentences. 12 of the filler items were intended to be rated about as well as the experimental stimuli, 6 were intended to be rated high, and 6 low due to being contextually infelicitous, but none were

outright ungrammatical. Participants were randomly assigned to one of the four resulting lists and the items were presented in randomized order. Participants were shown each item individually. At the beginning of the experiment, participants were told to read through each item carefully and then to judge the acceptability of the final sentence in its preceding context. They were told that this meant judging how well the final sentence fitted as a continuation of the preceding story. They were asked to rate the critical sentence's acceptability on a 7-point Likert-scale, with 1 = totally unacceptable and 7 = absolutely acceptable. The experiment was conducted in German and implemented online via *Qualtrics*.

We recruited 111 participants who were university students and participated for course credit. They participated voluntarily and gave their informed written consent to the anonymous use of their data. We excluded participants who did not speak German natively or did not complete the experiment. This left 102 participants (96 female, 6 male; mean age = 21.1, *sd* = 3.7, range 18-41 years) whose data was included in the statistical analysis.

## Predictions and hypotheses

As stated above, we hypothesize that *der* only marks a sentence topic and is insensitive to whether its antecedent previously was a topic, while *dieser* necessarily shifts discourse topichood. From this, we derive the following predictions: first of all, we predict that *der* should be better than *dieser* overall, because in the *er*-condition, the demonstrative picks up a referent that has been made into a discourse topic via the preceding question. *Der* should be acceptable in this case, because it only marks a (sentence) topic, but *dieser* should receive a penalty here because it refers to a referent that has already been turned into the discourse topic, in the preceding sentence. We expect this to be the case even though *dieser* is preferred in written contexts like ours, and *der* is actually dispreferred in them (cf. Patil et al., 2020). However, this might mean that the difference in acceptability will not be very large. Overall, this also meant that we didn't expect any of the experimental items to be rated near ceiling. In the *neutral*-condition, we also expect *dieser* to be worse than *der* but the argument is different: we assume that the question in S3 here turns the event referent into a discourse topic. However, since the two human referents are both involved in the event, the critical sentence, which describes the contribution by the human referents to the event, provides a good answer to the question posed by S3 without changing the discourse topic. We designed this context condition so that a global shift of the discourse topic would not be possible, while a local shift of a sentence topic might be possible. This is because even if *dieser* picks up the male target referent and indicates a discourse topic shift, turning the male referent into a topic would still be understood as contributing to answering the superordinate question via the strategy of inquiring about the action of individuals (cf. Büring, 2003, Roberts, 1996/2012). *Dieser* thus cannot possibly achieve its function of actually shifting

the discourse topic here, which is why we also expect it to be worse than *der*. *Der* should again incur less of a penalty, since it marks a sentence topic. Marking as sentence topic a referent that is involved in an event that is the discourse topic is compatible with a strategy of sub-inquiry to answer the superordinate QUD. Note that this also allows us to distinguish between sensitivity to local (sentence) or global (discourse) topichood for *der*: if *der* marks a discourse topic, it should also incur a penalty here, since it would make the human referent topical at the same level of discourse as the question in S3 made the event topical. Thus, in the *er*-condition we test between topic marking and shifting: *dieser* should incur a penalty because it redundantly shifts a referent to discourse topichood that has just been shifted to that status already. In the *neutral*-condition, *dieser* should incur a penalty because it cannot fulfil its function at all: its referent cannot possibly become the discourse topic. In addition, in this condition we can test for the level of topichood that *der* is sensitive to. In sum, we assume *der* to be rated better than *dieser* in both context conditions. However, we expect that the difference in acceptability should be stronger in the *neutral*-condition than in the *er*-condition, because in the *er*-condition *dieser* is merely redundant, while in the *neutral*-condition it cannot fulfil its function.

## Data analysis

Data was analyzed in R (R Core Team, 2023) using *tidyverse* (Wickham et al., 2019) and *ggplot2* (Wickham, 2016) for visualization. We used Bayesian statistics because this allows to fit complex models with relative ease and because they provide us with a quantification of the uncertainty about our effects of interest via Credible Intervals (CrIs). In Bayesian statistics, the 95%-Credible Interval indicates the interval within which values for the estimated parameter drawn from the posterior distribution lie with 95% certainty, given the model and the data. When the CrI does not include zero, we take that as evidence that the effect in question is reliable, again given the model and the data. In addition, we conducted one-side hypothesis tests based on the posterior distribution. The hypothesis tests indicate the probability that the effect is either negative or positive, depending on the sign of the estimated parameter, based on the proportion of the posterior distribution that is negative or positive.

## Results

Boxplots with raw median and mean values for the four crossed conditions are given in Figure 1. The figure indicates that in both context conditions, *der* seems slightly more acceptable than *dieser*, more so in the *neutral*-condition than in the *er*-condition. Using *brms* (Bürkner, 2017, 2018, 2021) and *cmdstanr* (Gabry & Češnovar, 2022), we fitted a Bayesian generalized mixed-effects model with cumulative link function to the data, with *pronoun* (*der* coded as -0.5, *dieser* as 0.5) and *context* (*neutral* coded as -0.5, *er* as 0.5) as fixed effects, and random intercepts, slopes, and their correlations for participant and item. The model was sum-

coded. It used weakly informative priors, replacing the uniform default priors for class *b* with normally distributed priors with mean = 0 and sd = 3.5 and otherwise using the non-uniform default priors for the other classes. Fixed-effects model results together with the results of relevant one-sided hypothesis tests are given in Table 3.

Table 3: Fixed-effects results of the model with one-sided hypothesis check results.

Effect	Est.	Error	CrI	Hypothesis
<i>context</i>	0.32	0.17	[0; 0.65]	$p(\text{context} > 0) = 0.98$
<i>pronoun</i>	-0.25	0.12	[-0.48; -0.02]	$p(\text{pronoun} < 0) = 0.98$
<i>pronoun x context</i>	0.18	0.19	[-0.2; 0.55]	$p(\text{pronoun} \times \text{context} > 0) = 0.83$

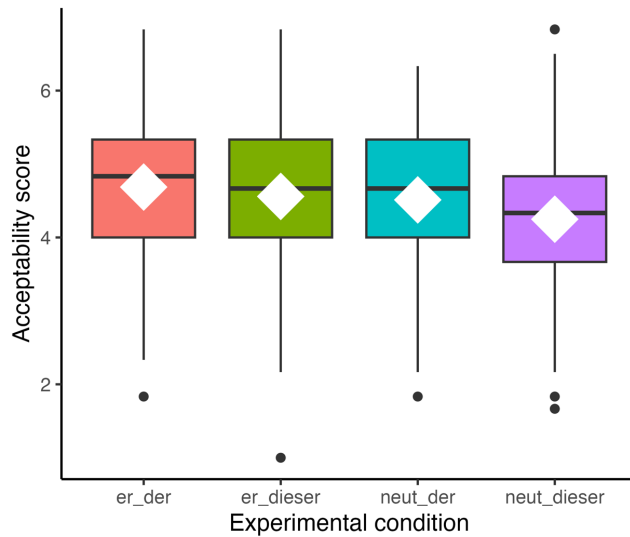


Figure 1: Boxplots with median (black line) and mean (white diamonds) results across combined experimental conditions

According to the results of the model, as predicted, the difference due to *pronoun* ( $\beta = -0.25$ ,  $\text{CrI} = [-0.48; -0.02]$ ) is reliably negative (from *der* to *dieser*) given the data and the model, with a posterior probability of 0.98. Again as predicted, the difference due to *context* ( $\beta = 0.32$ ,  $\text{CrI} = [0; 0.65]$ ) is reliably positive (from *neutral* to *er*) with a posterior probability of 0.98, given the data and the model. The posterior distribution for the interaction effect ( $\beta = 0.18$ ,  $\text{CrI} = [-0.2; 0.55]$ ) clearly straddles zero and it therefore cannot be said to be reliable, against our predictions. We used *conditional effects* to visualize the predicted values per combined condition, see Figure 2. This treats the ordinal 7-point Likert-scale like a continuous scale, but it facilitates visual representation. As the figure shows, numerically the difference between *der* and *dieser* is slightly larger in the

*neutral* condition than in the *er*-condition, but again, this is not a reliable effect given the model and the data.

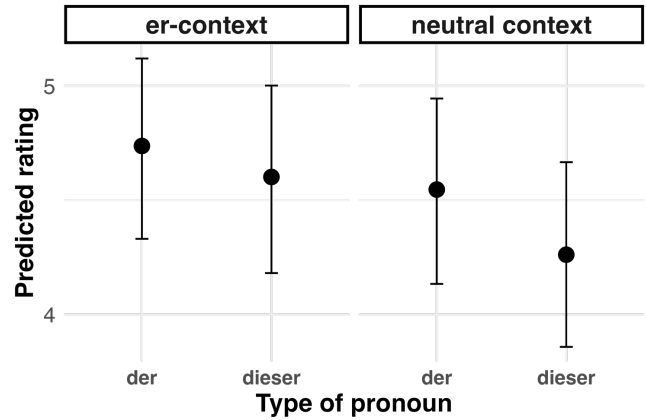


Figure 2: Model-estimated average responses per condition combination, treating the 7-point Likert-scale like a continuous scale. Error bars indicate 95% CrIs.

## Discussion

The results confirm our prediction that *der* is better than *dieser* overall, in line with our hypotheses that *der* is not sensitive to the topichood of its antecedent and can take antecedents that are topics, but *dieser* necessarily shifts the topic and thus cannot take topics as antecedents. The differences are not overly large, as we suspected might be the case. We assume that this is because there is a strong preference for *dieser* in written contexts (Patil et al. 2020). The *er*-condition turned out to be reliably better than the *neutral*-condition for both pronouns, with this difference only slightly larger for *dieser* than for *der*. The *neutral*-condition was designed to block a shift of the discourse topic, and this seems to be reflected in the lower acceptability of both demonstratives. In our predictions, we made the assumption that in the *neutral* contexts, *dieser* cannot fulfil its function as discourse topic shifter because the critical sentences always provided a felicitous answer to the question and thus necessarily maintained the discourse topic, with the antecedent of *dieser* being only ever a subordinate topic but not actually a different one. We correctly predicted that this would incur a larger penalty than in the *er*-context, at least numerically, because here *dieser* is only redundant, rather than unable to fulfill its function of shifting. Thus the results provide evidence that *dieser* is a real discourse topic shifter. Our results show that *der* is actually also less acceptable in the *neutral*-condition than in the *er*-condition. Since we hypothesize that *der* marks a sentence topic and is thus insensitive to discourse topichood, we predicted that *der* should not incur a strong penalty in the *neutral*-condition because its marking of the human target referent as a sentence topic should serve as a felicitous strategy for answering the question about the event as discourse topic. We could interpret the results as indicating that rather than making a categorical distinction between sensitivity to sentence vs.

discourse topichood, we should phrase our hypotheses in terms of a gradient sensitivity to more local or more global discourse structure.

## General Discussion

The results of the corpus study taken together with those of the acceptability study confirm our hypotheses. Both studies operationalized topichood via questions and investigated how sensitive *der* and *dieser* are to this topichood. The results are compatible with each other and point in the same direction. In the corpus study, we found that in contexts where a question like *Und der Bundestrainer* establishes a referent as a discourse topic, *der* is used to pick up this referent with a frequency comparable to that of the personal pronoun and a zero pronoun, both very compatible with topical referents, while *dieser* is almost not used at all, indicating that it is incompatible with an established topic. In the acceptability study, we also established discourse topichood via questions with a preceding context, and found that *dieser* is reliably rated worse than *der*. We take this as evidence for our hypothesis that *dieser* is especially sensitive to discourse structure in the form of topichood, while *der* seems less affected by it. This aligns with the analysis that *dieser* is a discourse topic shifter, requiring a non-topical, non-prominent antecedent and making it into a discourse topic, while *der* only marks sentence topichood and can thus also take antecedents that are topical. Comparing our two studies, it is interesting to observe that the corpus study seems more unequivocal in its results, while in the acceptability study, the effects are smaller and somewhat more complex to interpret. In part this is probably due to the corpus study reflecting production preferences, while the acceptability study tested comprehension. Above we also already made the assumption that the differences in the acceptability study are smaller because *dieser* has been shown to have an affinity for a more formal, written style, while *der* is often dispreferred in such a style (Patil et al. 2020). This tallies with our own impressions from emails written by German students in a university context, who reach for *dieser* when aiming for a formal style. Arguably, the topic questions themselves are more formal (at least syntactically more complex) in our acceptability study than in the corpus study. This might have contributed to the difference in the strength of the effects, as a reviewer suggests. The results of the acceptability study, in particular regarding the *neutral*-condition, have also given us reason to consider that what is local or global in discourse structure is probably a question of gradual, rather than categorical, difference. For the moment, we have provided evidence that one factor that differentiates the two German demonstrative series is that while *dieser* is sensitive to more global topic structure in the sense that it only takes non-topical antecedents and promotes them to discourse topichood, *der* is only sensitive at a local level and not a topic shifter. Future research should seek to corroborate these findings via other operationalizations and different tasks. A reviewer asks whether the phenomenon might be restricted to a certain age. That we find evidence for it in both the

participants of the acceptability study (early 20s as of the time of writing) and the writers of the corpus data (half a generation or more older) at least lets us believe that it is not a totally recent development. However, it is an open question whether demonstratives in other languages show a similar functional separation. Our findings about more local and more global levels of discourse structure also in principle make predictions about *der* and *dieser* behaving differently in forward-looking contexts. We have only investigated backwards-looking contexts here and can thus only say something about e.g. *dieser* having a greater *potential* for shifting a discourse topic. Fuchs & Schumacher (2020) did not find very reliable differences between *der* and *dieser* with regards to whether their referents are continued for longer, but their data was very heterogeneous. Another task for future research will be to investigate more in-depth the forward-looking component of the topic-shifting potential of the demonstratives.

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