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# Contrast and the pronominal use of the demonstratives *der* and *dieser* in German

Robert Voigt

In this paper, I report the results of a forced choice experiment in which I empirically investigated whether the linguistic factor contrast between several discourse referents affects people's choice to use the German pronominal demonstrative *der* or *dieser* to anaphorically pick up the contrasted referent. The main hypothesis was according to Bisle-Müller (1991) and Ahrenholz (2007) that *dieser* is able to express contrast and therefore should be preferred in the contrastive cases. However, the results do not support the hypothesis. Instead, they are in line with Bosch & Hinterwimmer (2016), who claim that *der* can express a contrast as well.

## 1. Introduction

German has several demonstratives. Two of the most frequently used forms are from the *der/die/das* and *dieser/diese/dieses* paradigms. These forms can be used adnominally (as in (1)) or pronominally (as in (2)).<sup>1</sup> In the adnominal use, the demonstratives appear together with a noun and function like a determiner. The pronominally used demonstratives appear instead of a noun and fulfill the functions of a pronoun.

(1) Der/dieser      Hund      ist      schön  
DEM.M.NOM      dog      be.PRS.3SG beautiful.  
'The dog is beautiful.'

(German)

(2) Ich      habe      einen      Hund.      Der/Dieser      ist      schön.  
1SG.NOM      have.1SG      INDEF.SG.M.ACC      dog      DEM.3SG.M      be.PRS.3SG beautiful.  
'I have a dog. It is beautiful.'

(German)

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<sup>1</sup> For other uses of demonstratives see Himmelmann (1997); Diessel (1999), Diessel (2019); Doran & Ward (2019), and König (2020).

In this paper, I focus on the anaphoric pronominal use of demonstratives. As shown in example (2), both *der* and *dieser*<sup>2</sup> can be used to anaphorically pick up a referent in the discourse. The conditions under which speakers decide to use *der* to anaphorically pick up a referent have often been studied in comparison to the personal pronoun *er* (see Abraham 2002; Bosch et al. 2003; Schumacher et al. 2015; Hinterwimmer & Brocher 2018; Hinterwimmer et al. 2020). A substantial body of research suggests factors affecting peoples' choice to refer to a referent with *der* or *er*. According to Fuchs & Schumacher (2020), the demonstrative *der* prefers referents that are less prominent, while *er* prefers to pick up more prominent referents.<sup>3</sup>

In contrast to that, it is still not well understood which linguistic factors influence the choice of pronominal *der* or *dieser* to refer to a certain entity in discourse. Although there is some recent work directly comparing the pronominal–anaphoric use of these two demonstratives (see Fuchs & Schumacher 2020; Patil et al. 2020), it remains unclear under which linguistic conditions people prefer to use the pronominal *der* or *dieser*. A factor that has been discussed in the literature but has not been empirically tested yet is the factor contrast. Bisle-Müller (1991) and Ahrenholz (2007) formulate the hypothesis that *dieser* might be able to express a contrast between the referent it appears together with or anaphorically picks up and other referents in discourse, while *der* is not able to express this sort of contrast.

This has been claimed in the literature but to my knowledge it has never been tested empirically. To test whether theoretical claims made in the previous research can account for concrete language usage and thus to add new experimental evidence to the theoretical discussion about the uses of *der* and *dieser*, I conducted a forced-choice experiment to test this hypothesis. In a within-subjects and within-items design, I compared conditions with a contrast between the referent picked up by the demonstrative to conditions without such a contrast. People had to decide which demonstrative they prefer to pick up the referent. Based on the theoretical literature, the experiment was supposed to test two hypotheses.

(H1): *Dieser* is able to express a contrast between its referent and other referents.

(H2): The ability to express this contrast is a difference between *dieser* and *der*. In contexts with contrast, *dieser* should be preferred.

If (H1) is correct, I predict people should be able to use *dieser* at least as often in the contrast conditions as in the conditions without contrast. If (H2) is correct, I predict that people choose *dieser* significantly more often in the contrast-conditions than in the conditions without contrast.

The remainder of the paper is structured as follows: In section 2, I review the theoretical literature about contrast and the use of demonstratives. Section 3 deals with other factors affecting peoples' preferences for *der* and *dieser*. The design, results, and discussion of the experiment can be found in section 4. The paper closes with a conclusion in section 5.

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<sup>2</sup> I use the masculine form of the demonstrative pronouns to avoid case syncretism, e.g. *die* could be feminine nominative or accusative singular, or nominative or accusative plural.

<sup>3</sup> They follow the definition of *discourse prominence* proposed by von Heusinger & Schumacher (2019). According to this definition, prominence is a relational principle that singles out certain linguistic elements in comparison to other, similar elements. Following Fuchs & Schumacher (2020), subjects, agents, topics, and perspectival centers are more prominent than objects, patients, non-topics, and non-perspectival centers. Therefore, these more prominent referents are picked up by a personal pronoun, whereas the less prominent referents are more likely to be picked up by a demonstrative. For a related definition of prominence see Himmelmann & Primus (2015).

## 2. Contrast and the use of German demonstratives

In this section, I discuss important aspects of the theoretical literature regarding the linguistic factor contrast and its relationship to the use of demonstratives in general, and especially to the use of the German demonstratives *der* and *dieser*.

An essential prerequisite for the ability of demonstratives to express a contrast is their function as a device for attention orientation. According to Diessel (2006a, 2019), demonstratives have a basic communicative function to direct the attention of interlocutors. Because of their tight etymological relationship to deictic gestures (especially pointing gestures), they are able to create a new joint focus of attention between the speaker and the listener. Following Diessel (2006a), the use of a demonstrative enables the speaker to shift the joint attention from one referent to another referent in the discourse. In addition to that, Diessel (2006a) thinks that the use of a demonstrative as a referential expression enables the hearer to distinguish between the referent meant by the speaker and other referents. This basic function appears in the spoken and written modalities of language and plays an important role in discourse organization.

Since demonstratives are able to shift the joint attention from one referent to another, according to Diessel (2006a:477–478), they are especially well suited to initiate a topic shift or a contrast between several referents. A similar idea is formulated in Zifonun et al. (1997:559–560) who also assume that anaphorically used demonstratives can create a new focus of attention. They further assume that *dieser*-demonstratives are very well suited to highlight an object contrastively. This hypothesis is also supported by theoretical work of Bosch & Hinterwimmer (2016:208). They argue that the use of a demonstrative to pick up a referent that is already in the focus of joint attention might be felicitous when the referent is contrasted to another referent.

To sum up, the function of demonstratives as an attention orienting device is an essential prerequisite for their ability to contrast one referent with other ones. The sort of contrast I try to empirically investigate is a contrast where a demonstrative is used to anaphorically pick up a discourse referent and thereby is expressing a contrast between this referent and potential other, similar referents. However, there is another type of contrast typically discussed when it comes to the use of demonstratives. This contrast is based on the local distance of the referents towards the speaker with one demonstrative being used in connection with the closer referent, while the other demonstrative is used together with the referent further away. An example for German is given in (3). I do not think that this type of contrast is useful for this study, but I will mention it and explain why I think it is not suited to explain differences in the use of *der* and *dieser*.

- (3) Dieser            Junge    und    jener            Mann.  
       this.M.NOM    boy        and    that.M.NOM    man.  
       ‘This boy and that man.’

(German)

In this form of contrast, the demonstratives are organized as contrastive pairs and a contrast is expressed between the referents that appear together with the two demonstratives (see Diessel 2006b, Diessel 2019; König 2020). This sort of contrast has been discussed for the use of the German demonstratives *dieser* and *jener*. Authors like Himmelmann (1997:49–50) and Bisle-Müller (1991:69) have discussed that in contrastive pairs like (3), the demonstrative *dieser*

might be used to refer to a closer referent, while the demonstrative *jener* might refer to a referent further away.

Even though this concept has been widely discussed in the literature, I think there are at least two reasons why this type of contrast cannot account for differences between *der* and *dieser*. Firstly, even though the theoretical literature sometimes assumes a locality constraint for *dieser*, usually *der* is assumed to be neutral regarding distance. Thus, even if *dieser* would have a semantic component expressing closeness of a referent, it would not make sense to build a contrastive pair based on locality with *dieser* and *der*, because *der* is most likely neutral to distance (Ahrenholz 2007:128–129). Secondly, the hypothesis that *dieser* and *jener* are a pair expressing a contrast with regards to distance might not be true. Ahrenholz (2007) conducted a large corpus study investigating the use of *dieser* and *der* in spoken German.<sup>4</sup> One result of the study was that Ahrenholz (2007:207–208) could not find a contrast like (3) between *dieser* and *jener* in the corpus. Therefore, he concluded that the hypothesis that *dieser* and *jener* express a distance-based contrast is not true, at least for the spoken language modality. These results question whether *dieser* is restricted to nearer referents at all. Since *der* is neutral to distance anyway and *dieser* might be as well, I do not believe one can build a contrastive pair with these two demonstratives to express a distance-based contrast.

- (4) Ich kenne einen Mathe-lehrer und einen  
 1SG.NOM know.PRS.1SG INDEF.SG.M.ACC math-teacher and INDEF.SG.M.ACC  
 Deutsch-lehrer. Im Gegensatz zu dem Mathelehrer war  
 German-teacher In contrast to DEF.SG.M.DAT math-teacher. be.PST.3SG  
 dieser sehr nett.  
 DEM.3SG.M very nice.  
 ‘I knew a math teacher and a German teacher. Unlike the math teacher, he was really nice.’

(German)

The sort of contrast I am investigating is an alternative-based contrast as in (4). Unlike in the distance-based contrast in (3), there is no paradigmatic pair of demonstratives expressing contrast between their referents. In the alternative-based contrast as in (4), there is only one demonstrative. This demonstrative anaphorically picks up a referent (the German-teacher) that is contrasted to other referent(s) (the math-teacher). The different referents are similar in several aspects. The referents from example (4) are both teachers. However, they must differ in a relevant way, so a contrast can be expressed. The difference between the two teachers from the example is that one of them is nice and the other one is not.

The idea that this sort of contrast might affect the use of the German demonstratives *der* and *dieser* mainly goes back to Bisle-Müller (1991). The author investigates the adnominal use of German demonstratives. Based on the concept of *indexicality markers* by Auer (1981, 1984)<sup>5</sup> and theories by Clark et al. (1983) on the shared knowledge by the speaker and hearer, Bisle-Müller (1991) concludes that a difference between the adnominal use of *der* and *dieser* might

<sup>4</sup> More details about the corpus study are discussed later in this section.

<sup>5</sup> According to Auer (1981, 1984), indexicality markers are expressions signaling possible difficulties in the resolution of a referent based on the linguistic utterance alone and the need of additional contextual information, shared knowledge or world knowledge to do so. Auer (1984:636–639) assumes the adnominal *dieser* to be the most important indexicality marker in German, because it explicitly marks that one might need extra information from outside the utterance to identify the referent. In contrast to that, he assumes the adnominal *der* signals that the linguistic utterance is sufficient to identify the referent and no additional information is needed.

be their ability to express a contrast. According to Auer (1981, 1984), *dieser* is an *indexicality marker*. This means that it can be used by the speaker to signal possible upcoming differences in reference resolution, because there are several potential antecedents for one referential expression. Therefore, the hearer needs contextual information to identify the correct referent. Bisle-Müller (1991) combines this concept with the idea by Clark et al. (1983) that certain referents are more present in the mental representation of the speaker and hearer than other ones. Based on these ideas, he formulates the hypothesis that the German adnominally used *dieser* expresses a contrast between several possible referents that are similar in a certain way (indexicality marking) in the direction of the referent that is most present in the discourse, because it significantly differs from the other potential referents. Therefore, people choose *dieser* to appear together with this contrasted referent.

Furthermore, Bisle-Müller (1991) assumes that only the demonstrative *dieser* is able to express this type of contrast. According to him, this is a difference between the adnominal *der* and *dieser*. He claims that only *dieser* is able to express a contrast between the referent it appears together with and other potential referents, while *der* is not able to do this. In his opinion, *der* will only be used in cases where only one referent is contextually available in the discourse.

This theoretical concept only applies for the adnominal use of demonstratives. In addition to that, Bisle-Müller (1991) does not explicitly distinguish between the adnominally used demonstrative *der* and the regular definite article in German.<sup>6</sup> Still, it has been highly influential with regard to the discussion about contrast and the (pronominal) use of demonstratives. His concept of contrast is discussed in several empirical studies about differences in the pronominal use of *der* and *dieser*, even though it is usually rather a side topic in these investigations (see Bader et al. 2020, Fuchs & Schumacher 2020). In addition to that, it inspired the contrast concept by Ahrenholz (2007) that explicitly deals with the pronominal use of the two demonstratives.

Ahrenholz (2007) builds on theoretical work of Bisle-Müller (1991) among others<sup>7</sup> and formulates the hypothesis that the pronominal *dieser* can be used to identify a referent and at the same time differentiate it from several other possible referents (Ahrenholz 2007:68–75). He adopts the view of Diessel (1999) that *dieser* has an internal component that expresses a contrast. Unlike Diessel (1999), he does not think it is a pragmatic but rather a semantic quality of the demonstrative. According to Ahrenholz (2007), this semantic quality is a difference between *dieser* and *der*. In his view, only *dieser* has a semantic component that enables it to express identification and contrast. Unlike *dieser*, the demonstrative *der* only has a semantic quality to express identification. If one wants to express a contrast via the use of *der*, one has to use additional prosodic cues (for example a heavier stress). Since the contrastive use of *dieser* is based on a semantic quality of the demonstrative, it holds for the adnominal and pronominal use of the demonstrative (Ahrenholz 2007:37–38, 68–75, 129).

To test this and other claims about German demonstratives, Ahrenholz (2007) conducted a corpus study with several corpora of spoken German. One result of this corpus study was that Ahrenholz (2007) was indeed able to find pronominal uses of *dieser* where a contrast is expressed between its referent and other potential referents in the discourse and the utterance

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<sup>6</sup> Demonstratives of the *der/die/das*-paradigm have a similar morphological form as the German definite article. Hence, it is difficult to distinguish adnominally used *der*-demonstratives from regular definite articles. In the literature, it is often assumed that the adnominal *der* carries a full stress, whereas the definite article has a weaker stress. However, this distinction might be problematic as well (Gunkel 2017).

<sup>7</sup> Other important works to Ahrenholz (2007) are Pause (1991) and Diessel (1999).

situation. Therefore, he concludes that his results support the hypothesis that *dieser* has a semantic component expressing a contrast (Ahrenholz 2007:204–213).

Bisle-Müller (1991) and Ahrenholz (2007) assume that a potential difference between *der* and *dieser* is that *dieser* is able to express a contrast between the referent it appears together with or anaphorically picks up and other referents that are similar but differ from it in a significant way. However, there are also other positions on the influence of contrast regarding speakers' choice to use *der* and *dieser*: Bosch & Hinterwimmer (2016) investigate potential differences between the personal pronoun *er* and the demonstrative *der*. They claim personal pronouns preferably pick up topics, while demonstratives are ill-suited to do so, because they are expressions that reorient the interlocutors' attention. However, they assume that a reference to a topical entity via the use of a demonstrative might be felicitous when there is a contrast between this referent and other referents. Unlike Bisle-Müller (1991) and Ahrenholz (2007), they therefore assume *der* to be able to express a contrast between the referent and other potential referents. Furthermore, they hypothesize that this might be a difference between the anaphoric demonstrative *der* and personal pronouns like *er*. This hypothesis is not based on empirical data but on personal judgements by the authors (Bosch & Hinterwimmer 2016:206–209).<sup>8</sup>

### 3. Other factors affecting the pronominal use of German demonstratives

In this section, I deal with other factors discussed in the theoretical and empirical literature affecting the pronominal use of *der* and *dieser*. The factors discussed in this section only affect the backward-looking functions of the two demonstratives, since the forward-looking functions are not investigated in this paper. For more information regarding the forward-looking functions, see Fuchs & Schumacher (2020). The factors discussed in this section are last-mentioned preference, register, modality, and perceptual center. Since most experimental research about pronominal demonstratives in German has been conducted in contexts with no more than two referents, most results of the research discussed here can only be applied to those contexts. One exception to this trend is the study by Patterson & Schumacher (2021) who investigate the behavior of *er*, *der*, and *dieser* in contexts with three antecedents. The results of their study will be discussed in the last subsection.

#### 3.1. Last-mentioned preference

The first factor I want to discuss here is a so-called last-mentioned-preference of the demonstrative *dieser*. Zifonun et al. (1997) argue that the linear order of the potential antecedents is the most important factor in determining whether a referent will be picked up by *der* or *dieser*. According to them, the anaphoric demonstrative *dieser* is only able to pick up the referent of the preceding sentence which has the smallest linear distance to the referential expression in the following sentence. If *dieser* cannot pick this referent up, because of a gender mismatch or other semantic constraints, it is not or only hardly able to pick up another referent of the preceding sentence. However, the demonstrative *der* only has a weaker locality constraint. It is able to refer to the last mentioned referent but it can also refer to an entity that is further away (Zifonun et al. 1997:555–559).

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<sup>8</sup> See Voigt (2021) for a more in-depth theoretical discussion of the linguistic concept of contrast and the use of demonstratives.



- (4) Peter will einen Benz kaufen. Der/\*Dieser  
 Peter want.PRS.3SG INDEF.SG.M.ACC Benz buy.INF DEM.3SG.M  
 hat wohl zu viel Geld  
 have.PRS.3SG probably too much money  
 ‘Peter wants to buy a Mercedes Benz. He must have too much money.’

(German; Zifonun et al. 1997:558–559)

Zifonun et al. (1997:558–559) discuss how in a context like (4), the demonstrative *dieser* is not able to refer to the referent *Peter*, since the linear distance between the potential antecedent and the referential expression is too long. *Der*, on the other hand, seems to be able to refer to the referent further away.

These ideas have been highly prominent in research about the referential preferences of *der* and *dieser* and are discussed in several recent empirical investigations (see Bader et al. 2020; Fuchs & Schumacher 2020; Patil et al. 2020). However, they have a major issue: empirical research has only partly been able to confirm this hypothesis. Patil et al. (2020) conducted a forced choice experiment in which they empirically investigated whether *dieser* indeed has a last-mentioned preference or whether the pattern observed by Zifonun et al. (1997) is rather due to the fact that the last-mentioned entity in canonical word order typically is a less prominent object. In order to test these two claims, they presented sentences in canonical and non-canonical word order containing two referents each to participants followed by a sentence containing an ambiguous *dieser* as a pronoun. The task for the test persons was to answer a question, which led them to resolve the ambiguous pronoun towards one of the referents. The results showed that in both word orders, people preferred *dieser* (just as research has repeatedly shown for *der*) to pick up the object of the sentence, irrespective of its linear position. Therefore, the authors concluded that the factor last-mentioned preference only has a marginal effect on the pronominal use of *dieser*.

For my experimental study, it is important to note that a last-mentioned preference might have a small effect on the pronominal use of *dieser*. However, this effect does not seem to be very strong, since it can be overridden by the factor grammatical role with respect to that *dieser* and *der* pattern alike. Taken this into consideration, a last-mentioned preference does not seem to be able to explain all differences in the pronominal use of *der* and *dieser*.

### 3.2. Register

Another line of research suggests that register might be a factor affecting the pronominal use of *der* and *dieser*. The basic idea behind this concept is that *dieser* might be preferred in more formal language, while people tend to use *der* more often in an informal language register.

Patil et al (2020) conducted two forced-choice experiments to investigate the behavior of *der*, *dieser*, and the third person personal pronoun *er*. They chose a between-participants design, so the items in experiment 1a were written in formal language, and the items in experiment 1b were written in a rather informal language. Participants had to decide which pronoun they preferred to pick up the referents in the different sentences. The results showed that the three referential expressions behaved similarly in both language registers regarding their chosen referents. However, the demonstrative *dieser* was used significantly more often in the formal register than in the informal register, whereas the demonstrative *der* was chosen more often in the informal register (Patil et al. 2020:4–18).

The results of this study clearly support the hypothesis that the language register strongly affects participants' choice of *der* or *dieser*. Still, there are a couple of hints this is not the only factor affecting the pronominal use of these demonstratives. Patil et al. (2020) themselves suggest that the modality of the language could also have affected the use of the demonstratives, since *der* appeared more often in the informal register but still appeared relatively few times across all registers. One explanation for this observation could be that *der* might be dispreferred in the written modality. In addition to that, there are many factors influencing the degree of formality a text has. All of these factors could also influence the use of the two demonstratives in these texts (Patil et al. 2020:15–18).

Another counterargument comes from Weinert (2007). In a corpus research, she investigated the use of personal pronouns and *der*-demonstratives in informal and formal conversations. Her corpus data clearly show that *der* often appears in the formal conversations. Based on these results, she concludes that the use of *der* does not seem to be bound to the informal language register (Weinert 2007:1–6). Another example for the appearance of *der* in a written formal register comes from Bader et al. (2020). They present an example of the prestigious German magazine *Der Spiegel* where a pronominal *der* appears and argue that *der* can also be used in formal language (Bader et al. 2020:17–18).

This small discussion shows that even if language register does have an effect on the pronominal use of *der* and *dieser*, it does not solely explain all differences in the use of these two demonstratives.

### 3.3. Language modality

In the previous subsection, I already mentioned that language modality could also be a factor that influences peoples' choice to use *der* or *dieser* to refer to a discourse referent. It is often assumed that *dieser* will be preferred in the written modality and *der* in the spoken modality. In her research about the scientific article, Graefen (1997) concludes that adnominal and pronominal *dieser*-demonstratives are the most commonly used deictic forms in scientific articles. She explains this with the tight connection of the *der*-demonstratives to the speech situation. Since the *der*-demonstratives have more or less the same morphological form as definite articles and relative pronouns in German, she argues, one needs prosodic cues to distinguish these forms from each other. This, of course, is not possible in the written modality and therefore they are dispreferred in written texts (Graefen 1997:217–225).

These thoughts are in a line with corpus -research by Weinert (2011), who claims that *der*-demonstratives appear in spoken German as often as personal pronouns while this is not the case for written German. Especially interesting here is that she explicitly states that she does not see this difference between formal and informal conversation. Instead, this difference seems to be due to the language modality (Weinert 2011:71).

Portele & Bader (2016) conducted a corpus study and an experiment to investigate which factors affect the pronominal use of *der* demonstratives and personal pronouns in the production of written language. They could show that in written language, the personal pronouns were also preferred in linguistic context in which one would expect the use of a demonstrative. Therefore, they conclude that *der* appears more often in the spoken than in the written modality.

In written modality the linguistic factor determining the choice between *der* and *dieser*? As with register, there are also some arguments against this hypothesis. As mentioned in the last subsection, it is often hard to disentangle the factors modality and language register. Therefore,

the results of Graefen (1997) could also be due to language register, since scientific articles are usually written in a highly formal register. And Weinert (2011) explicitly writes about formal written language as well. In addition to that, Portele & Bader (2016) themselves argue that it is not sufficient to just compare the two different modalities, because the use of demonstratives can vary between different subtypes of the written language. Texts in social media contexts are often closer to the oral language than to written language and therefore the use of anaphoric expressions in these texts resembles the use in the spoken modality (Portele & Bader 2016:36–37).

To sum up, even though there are results showing that *der* appears less often in the written modality than in the spoken modality, while *dieser* often appears in written texts, it is unclear whether this observed pattern can be solely explained by the language modality.

### 3.4. *Perspectival center*

The last factor discussed here is highly connected to the perspective of a speaker. According to Kaiser & Fedele (2019:311), current research suggests that perspective could be a factor influencing the choice of antecedents for personal pronouns and demonstratives in several languages.

For German, relevant studies regarding the effect of perspective on the use of personal pronouns and demonstratives have been conducted by Hinterwimmer & Bosch (2018) and Hinterwimmer et al. (2020). The main hypothesis of these studies is that *der*-demonstratives are not able to anaphorically pick up so-called perspectival centers. Discourse referents are perspectival centers if the rest of the sentence can be interpreted as expressing their thoughts, utterance or perception (see Hinterwimmer & Bosch 2018). In a sentence like *Peter thinks the weather is nice*, the referent *Peter* functions as the perspectival center of the rest of the sentence. The authors empirically investigated this hypothesis in Hinterwimmer et al. (2020) with two offline-rating tasks. They interpret their results to mean that *der* indeed does not seem to be able to pick up the discourse referent that is the perspectival center and that the most-prominent topical referent automatically functions as perspectival center if there is no clear center in the utterance. Therefore, they conclude, *der*-demonstratives typically avoid to pick up perspectival centers or topics in their absence.

Patil et al. (2020) hypothesize a difference between *der* and *dieser* might lie in their ability to pick up perspectival centers. They suggest that *der* avoids picking up the perspectival centers as antecedents, whereas *dieser* avoids the most prominent referents irrespective of their role as perspectival centers (see Patil et al. 2020:17–18).

This theoretical concept is highly interesting and would be able to explain cases where *der* and *dieser* cannot be interchangeably used. However, at present it has not been empirically tested. Therefore, we need to wait for an empirical validation of this hypothesis.

### 3.5. *More than two antecedents*

Most studies investigating these factors have been conducted with maximally two potential antecedents for the demonstratives. Therefore, the results of these studies and the conclusions regarding the single factors can only account for linguistic contexts with these numbers of po-

tentially available referents. According to Patterson & Schumacher (2021), this might be problematic because the limitation to two potential antecedents could mask differences between *der* and *dieser* which maybe only come to light in contexts with more possible referents (see Patterson & Schumacher 2021:1432).

To overcome this methodological limitation, they conducted three acceptability judgement studies with ditransitive constructions that always contained three referents which were ordered by their relative prominence according to their semantic roles. Building on Primus (1999), the authors assumed the agent to be more prominent than the recipient and the recipient to be more prominent than the patient. Their items consisted of two sentences each. The first sentence contained the three referents and the second sentence always included a pronoun of the type *er*, *der*, or *dieser* unambiguously referring to one of these referents. Participants had to give acceptability ratings for the sentences. The authors conducted this experiment to find potential differences between the two demonstratives masked in contexts with two referents and to further explore the nature of the linguistic concept of discourse prominence (see Patterson & Schumacher 2021:1427–1453).

The results of the experiments show a high sensibility of both demonstratives for the relative prominence of the potential antecedents. Both demonstratives preferred the less prominent patient and recipient referents. In addition to that, an effect of linear order occurred. In experiment 1a and 1b, the least-prominent patient referent was also the last-mentioned referent of the first sentence. Participants gave the highest ratings for continuations where the demonstratives referred to this referent. However, in experiment 2, the middle-prominent recipient was in the sentence-final position. In this subexperiment, the participants gave the best ratings for continuations where the two demonstratives picked up the recipient. Therefore, the authors concluded that in contexts with three potential antecedents, the semantic role and the linear order are the most important factors affecting peoples' choices to refer to a referent with the two demonstratives. Even though the experiments were able to show some interesting choice patterns for the two demonstratives with regards to the factors discussed here, no significant differences between *der* and *dieser* could be found in contexts with three antecedents either (see Patterson & Schumacher 2021:1445–1456).

The section discussed different factors that are currently debated to have an effect on peoples' choice to use *der* or *dieser* to refer to a certain referent in discourse. While the discussion could show that some of these factors indeed have a minor influence on the choice between these two demonstratives, it also became quite clear that no factor alone is strong enough to explain all the differences in the use of *der* and *dieser*. Therefore, one can assume there must be other factors at work as well. In the following section, I discuss a forced-choice experiment I conducted to test whether contrast might be one of these further factors.

#### 4. Experiment

In the first section of this article, I formulated the hypothesis that a potential difference between the German pronominal demonstratives *der* and *dieser* might lie in their ability to express a contrast between several discourse referents. Based on Bisle-Müller (1991) and Ahrenholz (2007), I assume that *dieser* is able to express a contrast between the referent it picks up and other referents in the discourse that share similar properties but differ from it in a crucial way, while *der* is not able to express this sort of contrast. Furthermore, I hypothesised that the ability to express this sort of contrast leads to differences in the use of these two demonstratives. This

section reports a forced-choice experiment I conducted to test these claims. In the following subsections, I present the design (4.1), the experimental procedure (4.2), the results (4.3), and the discussion of the experiment (4.4).

#### 4.1. Design

I conducted a forced-choice experiment to test whether the linguistic factor contrast affects the choice between the two demonstratives *der* and *dieser* in German. The independent variable was an alternative-based contrast. It had two levels: contrast and no-contrast. The dependent variable was the participants' pronoun choice between *der* and *dieser*. A prototypical experimental item is shown in (5).

- (5) a. Für die Renovierung meines Hauses habe ich einen Dachdecker, einen Fliesenleger und einen Elektriker kommen lassen. Ich fand den Dachdecker am besten. Im Gegensatz zu dem Fliesenleger und dem Elektriker war **dieser/der** extrem fleißig. *For the renovation of my house, I had a roofer, a tiler and an electrician come. I found the roofer the best. Unlike the tiler and the electrician, he was extremely hardworking.*
- b. Für die teure Renovierung meines sehr baufälligen Hauses im Vorort der Stadt habe ich einen Dachdecker kommen lassen. Ich fand den Dachdecker sehr gut. Im Rahmen der Renovierungsarbeiten am Haus war **dieser/der** extrem fleißig. *For the expensive renovation of my very dilapidated house in the suburbs of the city, I had a roofer come. I found the roofer to be very good. During the renovation work on the house, he was extremely hardworking.*

(5a) is a prototypical item with contrast. In the first sentence, three referents are introduced via indefinite DPs. All of them have one feature in common. In this case, all are handymen. After the first sentence, only one of them is mentioned again in the second sentence via a definite DP. The third sentence is the critical sentence. It expresses a contrast between the two referents and the first one which is picked up by a pronominally used demonstrative. Participants saw a gap at the position of the demonstrative and were asked to choose *der* or *dieser* depending on which one they thought fits better. (5b) is a prototypical item without contrast. The structure and length are similar to (5a). However, there is only one referent and no contrast is expressed. Similar to (5a), participants saw a blank at the place of the demonstrative and had to decide whether they preferred *der* or *dieser* to pick up the referent. The items were supposed to test (H1) and (H2) of the introduction (repeated here for convenience).

(H1): *Dieser* is able to express a contrast between its referent and other referents.

(H2): The ability to express this contrast is a difference between *dieser* and *der*. In contexts with contrast, *dieser* should be preferred.

My predictions were as follows: If (H1) is correct, people should be able to use *dieser* at least as often or more often in the contrast conditions (5a) than in the conditions without contrast (5b). If (H2) is correct as well, people should choose *dieser* significantly more often in the contrast-conditions (5a) than in the conditions without contrast (5b).

Section 3 discussed several other factors that might affect peoples' choice to use one or the other demonstrative. The items of my experiment were carefully controlled for these factors: I kept the factors modality and perspectival center constant across all conditions and items. Therefore, potential differences across the conditions could not be due to these factors. I tried to keep all items in a register that is not to formal and not to informal, so no register effects should affect the dependent variable. As can be seen in (5a), in the contrast-conditions with three referents, the demonstrative always refers to the first-mentioned referent to avoid effects of a last-mentioned preference. In the conditions without contrast, there is only one referent and therefore no effects of linear order can emerge. In sum, no differences measured in the dependent variable can be caused by one of those factors.

#### 4.2. Procedure

To test (H1) and (H2), I constructed 20 items with two levels each. This led to a total number of 20 mini-discourses with contrast (as (5a)) and 20 mini-discourses without contrast (as (5b)). The fillers<sup>9</sup> consisted of 18 items with three levels each. In total, I had 54 filler-items and 40 critical items.

For my experiment, I used a within-subjects and within-items design. Every participant saw items of each condition (contrast and no-contrast), but not more than one condition of each item. Using the latin-squares design, I equally distributed the items on two lists (list A and list B). I used the same method to equally distribute the fillers on three lists (list i, list ii, list iii). After that, I distributed the three lists containing the fillers onto the two lists containing the items which led to a total number of six lists (list Ai, list Aii, list Aiii, list Bi, list Bii, list Biii).

I pseudo-randomized the order of the items and implemented them on *Google Forms*. This platform was chosen, because I expected many participants to be familiar with it through private contexts or their working experiences. In addition to answering the items, participants were asked to provide information regarding their age, gender, and L1.

Before the start of the study, every participant had to sign a data privacy statement. After that, they could see the instructions. In these instructions, they were informed that they were about to see sentences with gaps instead of pronouns and that their task was to pick one of the two presented pronouns which seemed intuitively more fitting. The order of presentation of the pronouns was randomly varied between the items.

57 people participated in the experiment. All of them had German as L1. The age range of the participants was between 13 and 64. No participants were excluded from the statistical analysis.

#### 4.3. Results

Figure 1 shows the pronoun choice of the participants across the two conditions of the items. On the y-axis, one can see the number of answers in percent. On the x-axis, one can see the two conditions (contrast and no-contrast). The boxes show how many times *der* and *dieser* were chosen across the two conditions in percent.

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<sup>9</sup> The fillers served as a pretest for another experiment on pronominal demonstratives in German.

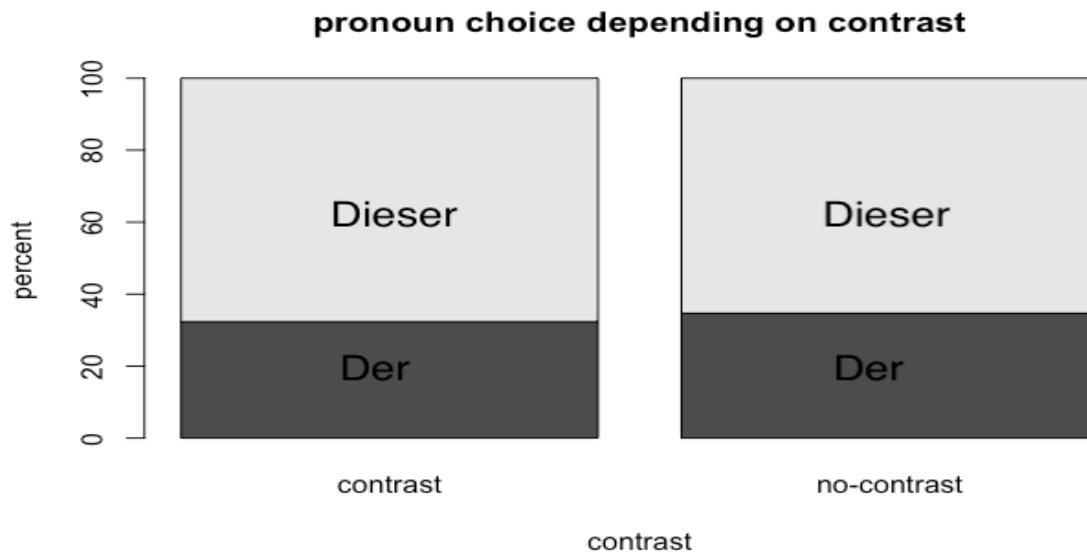


Figure 1. Percentage of *der/dieser* chosen for both the contrast and no-contrast condition. *Dieser* was chosen the majority of the time in both conditions, with only a marginal difference between conditions.

As can be seen in Figure 1, *dieser* was used immensely more often in both conditions. In the contrast-condition, participants chose *der* 183 times and *dieser* 383 times. In the condition without contrast, participants chose *der* 197 times and *dieser* 371 times. The results show that people used the pronominal demonstrative *dieser* slightly more often in the condition with contrast than in the condition without contrast. However, this difference is only marginal.

In order to test whether this small difference in the pronoun choice between the two conditions is statistically significant, I ran a generalized linear mixed effects regression model (glmer) using the lme4 package (Bates et al. 2015) in R (R Core Team 2021). The independent variable of the model was the factor contrast with its two levels contrast and no-contrast, which I coded as *kon* (for contrast) and *norm* (for normal), as independent variable for the statistical model. The dependent variable were the answers which I coded binary (*der*=0 and *dieser*=1) for the statistical analysis. The items and participants were included as random effects (random intercepts and random slopes each for items and participants) in the model. However, to make the model converge, I had to exclude the random slopes for the items.

In the calculation with this reduced model with *kon* as reference level, the estimate was -0.1657. This value shows that *dieser* indeed was used less often than *der* in the condition without contrast. However, since the p-value was 0.626, this small effect is insignificant. To sum up, the results of the descriptive statistics and the results of the inferential statistics show that there is a small contrast effect that affects peoples' pronoun choice in the direction of *dieser*, but this small effect is not statistically significant.

#### 4.4. Discussion

Based on theoretical literature about contrast and the use of *der* and *dieser*, the experiment was supposed to test the following two hypotheses (H1) and (H2). The results of the experiment

could be interpreted as speaking in favour of (H1). *Dieser* seems to be compatible with contexts including a contrast between the discourse referent it anaphorically picks up and other referents in discourse. Otherwise, it would have been used less often in the contrast-condition than in the condition without contrast. The experimental results clearly show that this is not the case. In fact, across both conditions *dieser* has been used almost equally often and even slightly more often in the condition with contrast. Therefore, one could conclude that *dieser* is indeed able to express a contrast between its referent and other potential referents sharing similar properties but also differing from the chosen referent in a significant way, or is at least compatible with a contrast like that.

(H2) is not supported by the experimental results. If the ability to express this sort of contrast was a difference between *dieser* and *der* in a way that only *dieser* is able to express contrast, *dieser* should have been used more often in the contrast-condition than in the condition without contrast. The results indicate that this is not the case. As stated before, *dieser* and *der* were used almost equally often in both conditions. Even though the descriptive statistics showed a numerical *dieser*-preference in the condition with contrast, the results of the inferential statistics indicate that this small effect is not statistically significant. Therefore, one can conclude that the results do not support the hypothesis of Bisle-Müller (1991) and Ahrenholz (2007) according to which only *dieser* expresses a contrast between several discourse referents and that this ability of *dieser* leads to differences in the use of the two demonstratives.

Across both conditions, both *dieser* and *der* were chosen almost equally often. One question to discuss is whether a possible reason for these results can be explained by inherent qualities of the experimental items. Maybe *dieser* is contrast-sensitive but not to the type of contrast in my items. For my experimental design, I decided to produce constructions that resemble constructions with the information structural notion of a contrastive focus (see Umbach 2004; Repp 2010, Repp 2016 for contrast in information structure). I chose these constructions, because I thought they underlie a similar mechanism as the contrast in Ahrenholz (2007) and Bisle-Müller (1991) as well as the examples I found conducting a small corpus study investigating contrastive uses of *dieser* in spoken and written German (Voigt 2021). However, there would have been other types of contrast which could also fit the contrast concept by Ahrenholz (2007) and Bisle-Müller (1991) and the corpus examples. For example, Bader et al. (2020) discuss partitive constructions as in (6) to express a contrast similar to the concept of Bisle-Müller (1991). Another possibility would be investigating constructions where a topic contrast is established between several referents. Further experiments with partitive and contrastive topic constructions would be fruitful in order to test to what extent the absence of the expected contrast effect is due to my items.

- (6) Ich            habe            mein-e            Söhne            mit-gebracht.  
 1SG.NOM    have.1SG.PRS    1SG.GEN-M.ACC.PL    sons.PL.M.ACC    with-bring.1SG.PRF  
 [pointing gesture]  
 Dieser/Der    ist            Linguist.  
 DEM.3SG.M    be.PRS.3SG    linguist.  
 ‘I brought my sons. This one is a linguist.’

(German; Bader et al. 2020:(2))

Another possible reason for the observed results could lie in the experimental design. Perhaps a forced-choice design is not fine-grained enough to capture the differences between *der* and *dieser* with regards to contrast. It might be possible that experimental designs eliciting more



fine-grained measurements (such as acceptability judgement tasks or self-paced reading tasks) would be more suitable to show more subtle differences in the use of *der* and *dieser*.

Nevertheless, if one assumes that the lack of a contrast-based difference between *der* and *dieser* in the results is not due to inherent properties of the items or the experimental design, one has to conclude that the results speak against the hypothesis from Ahrenholz (2007) and Bisle-Müller (1991). Instead, they might be more in line with the hypothesis of Bosch & Hinterwimmer (2016) that *der* is able to express a contrast between several discourse referents. Since *der* was chosen almost equally often in the contrast-condition and in the condition without contrast, the results might be interpreted as supporting the part of the hypothesis by Bosch & Hinterwimmer (2016) stating that the demonstrative *der* can be used to express a contrast. Still, it remains unclear whether this is a difference between the pronominal demonstrative *der* (and *dieser*) and the personal pronoun *er* as the authors hypothesize. To test this hypothesis, I conducted another forced-choice experiment using the same items but with an additional *er* to choose. The results are reported in Voigt (2022), and they indicate that the ability to express a contrast might be a difference between the two demonstratives *der* and *dieser* and the personal pronoun *er* as Bosch & Hinterwimmer (2016) hypothesize. Still, given the very small number of items and participants, further research needs to be done.

Another question arising from the results of this study regards the adnominal use of *der* and *dieser*. My results could show that there is no contrast-driven difference between *der* and *dieser* in the pronominal use. However, both Bisle-Müller (1991) and Ahrenholz (2007) hypothesize about a contrast-based difference in the adnominal use as well. Since there was no such difference in the pronominal use, it might be interesting to experimentally investigate whether one can find such a difference in the adnominal use. However, setting up an experimental design that investigates the adnominal use of *der* and *dieser* could be very difficult, because the adnominal demonstrative *der* in German is hardly distinguishable from the definite determiner *der* which has a very similar morphological form.

In addition to revealing insights about the behavior of the pronominal *der* and *dieser* in contrastive context, the results can also be discussed with regards to the factors presented in section 3. One result of the experiment is that *dieser* was chosen almost twice as often as *der* in both conditions. A question arising from this pattern is what factor evokes such a strong preference for *dieser* across conditions. A possible answer for this question could lie in the modality of the items. The items were presented in the written modality. As discussed in section 3.3., some authors assume *dieser* preferably occurs in written language, while people tend to use *der* more often in spoken language. Perhaps the strong preference for *dieser* across both conditions goes back to this. However, this is just one possible interpretation of the results. Since all conditions were presented in written form, it cannot be verified. If the modality indeed has an effect on the pronominal use of *der* and *dieser*, it might be possible that there is an interaction between the factors language modality and contrast: maybe there is a contrast effect in the direction of Bisle-Müller (1991) and Ahrenholz (2007), but since the effect of the written modality is so strong, the contrast-effect gets overridden by the modality effect. To disentangle these two potential factors, it might be interesting to conduct a similar experiment with the same items and to additionally vary the modality of the language in a between-items design.

Finally, the results give clear implications for the discussion of a possible last-mentioned preference of *dieser*. As presented in section 3.1. and 3.5., there is the hypothesis that the linear order of referents affects the interpretative preferences of *dieser* and *der* in such a way that *dieser* is only able to pick up the last mentioned entity while *der* is more flexible in its referential choice. The results of Patil et al. (2020) and especially the results of Patterson & Schumacher

(2021) suggest a small effect of linear order. Contrary to that, my experiment cannot support this claim. In my experimental design, both demonstratives do not pick up the last mentioned referent. Still, participants do not seem to have a problem picking up this referent with the demonstrative *dieser*. In fact, they even prefer *dieser* over *der* to do so. These results clearly speak against a strong influence of a last-mentioned preference. Again, perhaps there is an interaction between the factors modality and linear order in such a way that the effect of the written modality is stronger than the linear order effect. An experiment as outlined in the paragraph above could also be fruitful in order to disentangle these two potential factors.

### 5. Conclusion

In this paper, I presented the results of a forced-choice experiment investigating the pronominal use of the demonstratives *der* and *dieser* in German. The main hypothesis following Bisle-Müller (1991) and Ahrenholz (2007) was that *dieser* is able to express a contrast between its antecedent and other similar referents in discourse, whereas *der* is not or only hardly able to do this. Therefore, one would expect people to prefer to use *dieser* over *der* in linguistic contexts with such a contrast.

The results of the experiment can be interpreted as supporting the hypothesis that *dieser* is able to express a contrast between its antecedent and other referents or at least is compatible with such a contrast. However, they are not in line with the hypothesis that the ability to express this sort of contrast is a difference between *dieser* and *der* which leads to differences in the use of these two demonstratives. Instead, the results show that both demonstratives seem to be equally able to be used in a contrastive way. This is in line with the hypothesis of Bosch & Hinterwimmer (2016) who state that *der* might be able to express a linguistic contrast.

As the discussion has shown, the results offer many starting points for further experimental research on *der*, *dieser*, and *er*. In addition to this, they provide new insights into the other factors possibly affecting the pronominal use of the two demonstratives. Thus, they speak against a strong effect of a last-mentioned preference for *dieser*. Furthermore, they might support the idea that language modality is a strong factor determining the choice between *der* and *dieser*.

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### Abbreviations

1, 2, 3	first, second, third person	INF	infinitive
ACC	accusative	M	masculine
DAT	dative	NOM	nominative
DEF	definite	PL	plural
DEM	demonstrative	PRF	perfect
GEN	genitive	PRS	present
INDEF	indefinite	PST	past

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