Focus on demonstratives: Experiments in English and Turkish*

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Abstract This paper deals with an unexpected contrast between demonstrative descriptions and definite descriptions on their anaphoric uses. If two (or more) discourse referents are introduced in the preceding sentence, it is perfectly natural to refer to one of them in the following sentence using a definite description. Use of demonstrative descriptions in the same context, however, is degraded, with existing accounts of anaphoric demonstratives and definites providing no explanation for this contrast. We present experimental evidence from two languages, one with definite determiners (English) and one without (Turkish), and show that the acceptability of demonstratives depends independently both on (i) whether one or two NPs are introduced in the initial sentence, and (ii) whether the follow-up sentence introduces a new situation or not. We propose a focus-driven information structural approach to demonstratives to account for this pattern. Following Dayal & Jiang (2021) (building on Schwarz 2009) in assuming that definite and demonstrative expressions in anaphoric contexts are similar in including an anaphoric index argument, we argue that demonstratives essentially differ in evoking focus alternatives on the index argument.

Keywords: complex demonstratives, definite descriptions, anaphoricity, focus, English, Turkish

1 Introduction

The starting point of any discussion of demonstratives in linguistics and philosophy is often Kaplan (1989), whose analysis focused on their deictic uses. Deictic demonstratives refer to a contextually salient entity accompanied by a demonstration such as pointing, eye gaze, *etc.* in the direction of the entity. This is shown in (1-a)

for a simplex demonstrative and in (1-b) for a demonstrative description/ complex demonstrative.

(1)   a.   That$_\rightarrow$ is a book.   [$_\rightarrow$ indicates accompanying gesture]
       b.   [That dog]$_\rightarrow$ looks happy.

Kaplan argues that demonstratives differ from definite descriptions in being directly referential terms whose reference is fixed in the utterance situation by the speaker's demonstration. In other words, unlike a definite description, which picks out an entity by satisfaction of a uniqueness requirement, a demonstrative simply returns the entity by denoting it directly. To see the difference, consider the sentences in (2-a) and (2-b) (Ahn & Davidson 2018: 1), where the demonstrative description *that person* rigidly refers to John, unlike the definite description.

(2)   (Pointing at John) If John and Mary switched places . . .

       a.   . . . that person would be a woman.   (false)
       b.   . . . the person I'd be pointing at would be a woman.   (true)

More recent studies have illustrated that demonstratives are not restricted to deictic uses and can have anaphoric (3-a) and bound variable readings (3-b) analogous to definite descriptions (Nowak 2014; Roberts 2002; Wolter 2006; Ahn & Davidson 2018; Elbourne 2008; Abbott 2002).

(3)   a.   I saw a dog. That dog looked happy.   (Ahn & Davidson 2018: 1)
       b.   Every dog in my neighborhood, even the meanest, has an owner who
             thinks that that dog is a sweetie.   (Roberts 2002: 5)

Nevertheless, demonstratives do not always seem to be a natural/ preferred option in anaphoric contexts, unlike definites, as evidenced by the contrast in (4).

(4)   I saw a dog and a cat. The/??That dog looked happy.

Here we see that if two discourse referents are introduced in the preceding sentence, use of a demonstrative description in the following sentence to anaphorically pick one of them up is no longer a natural option.

For a determiner-less language, Mandarin, where definite descriptions are denoted by bare nouns, Jenks (2018) and Dayal & Jiang (2021) report divergent patterns in the use of bare nouns and demonstratives in anaphoric contexts. However, their analyses do not explicitly address any contrast between single vs multiple referents introduced in the preceding context. Furthermore, the question of whether the competition between anaphoric demonstratives and definite descriptions differs between determiner-less languages and languages with determiners remains unexplored in

experimental research.

Our goals in this paper are (i) to experimentally investigate the robustness of the contrast between anaphoric demonstratives and definites in multiple referent scenarios across speakers; (ii) assess the cross-linguistic variability of this contrast in both languages with and without overt definite determiners; (iii) determine the critical variables that drive this contrast; and finally (iv) propose a formal account for this contrast.

Presenting experimental evidence from two languages, English (with definite determiners) and Turkish (without definite determiners), our study shows that the acceptability of demonstratives depends on two independent factors, regardless of the presence of a definite determiner in the language: (i) whether one or two NPs are introduced in the initial sentence and (ii) whether the follow-up sentence introduces a new situation or not. We explain this pattern by adopting a focus-driven information structural approach to demonstratives. Combining insights from Schwarz (2009) and Dayal & Jiang (2021), we take definite and demonstrative expressions in anaphoric contexts to include an anaphoric index argument. We further propose that demonstratives are fundamentally different from definites in evoking focus alternatives on this index argument.

In the following section, we start by reviewing previous works on demonstratives. In Section 3, we outline the design of our experiment. Section 4 discusses the results and the need for an information structural approach to demonstratives. Section 5 concludes.

2   Previous approaches to demonstratives

In the semantic literature, there are two different lines of approaches to account for the use of demonstratives that are not directly referential. One approach is to analyze demonstratives as an indirectly referential expression, similar to definite descriptions. Under one view of this approach, a definite description denotes the unique individual that satisfies the predicate denoted by its NP-complement. However, a complex demonstrative differs in denoting the unique individual that satisfies both the predicate denoted by the NP-complement of the demonstrative determiner and some additional, contextually determined property that is given in the form of a free predicate variable (King 2001; Elbourne 2008, *a.o.*) One other view that falls into the indirectly referential approach has been proposed in Wolter (2006). In this view, demonstratives are analyzed as a definite description whose uniqueness presupposition is evaluated in a different situation than the topic situation in which the main predicate is evaluated. There are also some other accounts which treat demonstratives as marked definite descriptions (Hinterwimmer 2015 *et seq*; Dayal & Jiang 2021, *a.o.*).

The second approach, taken by Roberts (2002), maintains Kaplan's direct referential view but incorporates it into an indirectly referential definite-like denotation. Roberts analyzes the demonstrative similar to a definite description in seeking a unique entity that meets the description in a given context, but distinct from it in having a directly referential component—a presupposition that there is a demonstration and that the unique entity that meets the description is identical to the entity that is being demonstrated in the utterance context. More recent work by Ahn (2022) adopts an approach that combines intuitions from both direct and indirect approaches. Ahn treats demonstratives as indirectly referential expressions with a binary maximality operator that takes two arguments, where the second argument can be a deictic pointing, an anaphoric index, or a relative clause. Direct reference is encoded not in the meaning of the demonstrative but in the meaning contributed by the pointing gesture, thus capturing both direct and indirect uses.

To sum up, complex demonstratives are treated to be a variant of definite descriptions and essentially equivalent to them with respect to anaphoric uses. The views sketched above particularly fail to predict the contrast introduced in (4) repeated below.

(5) a. I saw a dog and a cat. The dog looked happy.
     b. I saw a dog and a cat. ??That dog looked happy.

In a recent study, Jenks (2018) highlights a disparity between definites and demonstratives in Mandarin, where definites are realized by bare nouns. Jenks proposes that in Mandarin bare nouns function as weak definites, while demonstrative descriptions denote strong definites in the sense of Schwarz (2009), where anaphoric definites, i.e., strong definites, are differentiated from uniqueness-based definites, i.e., weak definites, solely by the presence of an index argument. This idea then is that in Mandarin (which one might generalize to other languages with bare definites and overt demonstratives), demonstratives add an index argument.

In their response to Jenks (2018), Dayal & Jiang (2021) present new data and argue against a distinction between bare nouns and demonstratives in terms of weak vs. strong definites. They claim that in Mandarin, bare nouns can function as both weak and strong definites, akin to definite descriptions in English, whereas demonstratives behave as standard demonstratives. Intriguingly, Dayal & Jiang identify what appears to be the reverse of the English contrast in (5) between demonstratives and (definite) bare nouns in Mandarin (Dayal & Jiang 2021: 23):

(6) Jiaoshi   li   zuo zhe yi ge nansheng yi ge nüsheng.
     classroom inside sit PROG one CL boy   one CL girl
     'There is a boy and a girl sitting in the classroom.'

    a.   Nüsheng zuo zai   nansheng pangbian.
             girl   sit DUR boy   side
             'The girl was sitting next to the boy.'

    b.   Wu zuotian   yudao {#∅/ na ge} nansheng.
             I   yesterday meet   that CL boy
             'I met the boy yesterday.'

The sentence in (6) introduces a boy and a girl sitting in a classroom. Dayal & Jiang note that while both bare nouns and demonstratives are grammatical in the follow-up sentences (6-a) and (6-b), speakers prefer the bare noun in (6-a) and the demonstrative in (6-b). They argue that if the initial situation in (6) remains unchanged, speakers have a choice between two felicitous options—the definite denoted by the bare noun and the demonstrative description—and in this case speakers prefer the simpler option, the bare noun, as in (6-a). Once the situation is extended (e.g., including a new participant), as in (6-b) the demonstrative description is preferred instead.

Under their view, this is because definites might end up infelicitous if the extension in situation is drastic enough to fail the uniqueness requirement of the definite. In contrast, demonstratives would remain felicitous, because they have an anti-uniqueness requirement, and this requirement can be satisfied in a wider situation. As first proposed in Robinson (2005), a demonstrative requires that its referent not be the only member in the set denoted by its NP complement (i.e. "anti-uniqueness"). This is evidenced by the infelicity of a sentence like *That sun is hot*, in contrast to *The sun is hot*.

Crucial for our purposes, while the sentence in (6) happens to introduce two discourse referents, Dayal & Jiang do not linguistically manipulate and control for single vs multiple referents in their paper. They also note that definite and demonstrative descriptions are equally available options in anaphoric contexts in English. Based on the following example, which is similar to our (5), they point out that demonstratives only differ in suggesting a slight sense of contrast. However, they do not discuss how English definites and demonstratives pattern in comparison to Mandarin, particularly in contexts where the situation may involve a new participant.

(7)   a.   A woman and a man came into the room. The woman sat down.
       b.   A woman and a man came into the room. That woman sat down.
          (Dayal & Jiang 2021: 20)

This leads us to our experiment whose task is two-fold: (i) experimentally evaluate the robustness of the observational claims in (5) and (ii) tease apart the effects of multiple discourse referents and the presence or absence of a new situation in the follow-up sentence. We design an experiment where we cross these two

variables hypothesized to affect the acceptability of anaphoric demonstratives, in both a language with a definite determiner (English) and one without (Turkish). In the following section, we outline the design of the experiment.

3 Our experiment

We conduct two experiments, one in English and one in Turkish, to test the acceptability of definite and demonstrative descriptions in anaphoric contexts.

Turkish is classified as an SOV language with nominative-accusative case alignment, and its definite descriptions are conveyed through bare nouns due to the lack of an overt definite determiner. In the context of our Turkish experiment, bare singulars functioned as definite descriptions, demonstrating clear definiteness in case-marked argument positions. However, in non-case-marked argument positions, bare singulars exhibit weak indefinite interpretations as a result of pseudo-incorporation (e.g., Öztürk 2005 and Sağ 2022). Throughout our experiment, all Turkish items involved case-marked arguments, thereby removing any potential ambiguity in interpreting bare singulars. It should be further noted that subject arguments in Turkish are widely accepted to carry null nominative case.

3.1 Design

The experiments employed a 2x2x2 design testing the acceptability of definite and demonstrative descriptions (DEF vs DEM) in anaphoric contexts that differed on the number of competing referents (ONE vs TWO) and situation (NEW vs SAME).

For each trial, participants read a short context scenario sentence, in bold, at the top of the screen, and were asked to rate the two possible continuations (DEF and DEM), which were always presented below the context in a random order with continuous response bars underneath them. The slider bar responses were stored as an integer from 0 - 100, with 0 being "least natural" and 100 being "most natural". Figure 1 gives an example for the *2 NP New Situation* condition in both English and Turkish for the experimental item 'boy'. In the experimental training it was highlighted that in many contexts both continuations might be acceptable, and responses can reflect this, along with relative contrasts. In general, participants were instructed to rate continuations based on whether they would naturally use them in their everyday speech, even if both were natural, or both unnatural, or if they had a clear preference. After the instructions, participants were given three warm-up trials. In English, one of the trials involved a grammatical number mismatch between the context and one of the target sentences, another involved a bare singular NP in one of the target sentences with a grammatical number mismatch in the other. The Turkish warm-up trials were constructed in the same way except that one of the trials differed

from the English one in involving a bare singular NP that mismatched with the noun introduced in the context sentence.

A boy and a girl entered the classroom.

I had noticed that boy at a coffee shop yesterday.

Least natural   **Most natural**

I had noticed the boy at a coffee shop yesterday.

Least natural   **Most natural**

Sınıfa bir kız ve bir oğlan girdi.

O oğlanı daha önce bizim kafede görmüştüm.

en az doğal   **en doğal**

Oğlanı daha önce bizim kafede görmüştüm.

en az doğal   **en doğal**

Figure 1 Screenshot of experiment for English (top) and Turkish (bottom) in 2NP New Situation condition

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The experiments adopt the dual presentational design (directly comparing the conditions of interest with each other by a single participant) advocated in Marty, Chemla & Sprouse (2020). They report that even subtle contrasts between conditions can be drawn out more effectively via joint presentation of conditions with a continuous scale and labeled endpoints. Allowing direct comparisons between conditions on the same screen attune participants to small judgment differences, and additionally provides a benefit of highlighting the aspect of the judgement which the experimenter intends the participant to focus on (not, for example, choices of nouns and verbs, overall likelihood of the scenario, etc.) Needless to say, this comes at the cost of participant naivety. However, we believe that the benefits outweighed

the costs in the case of demonstratives and definites—where we are not aware of a prescriptive rule that participants might bring strategically to the task—because this permitted us to capture a wider range of subtle linguistic judgments that might otherwise cluster together in a broader context of possible conditions.

3.2   Materials and Participants

Materials. For each experiment, we used 12 experimental items across 4 conditions [See (8) - (11)]. The items were balanced for both animacy and syntactic positions of the target NPs. In the two referent conditions, both target NPs were introduced in the same syntactic positions (on this point, see contrast with Hinterwimmer & Patil (2022) below in our Discussion section). New situations always differed from same situations in being marked by both a new event participant (e.g. speaker or someone else) and a temporal change from the scenario in the context situation.

We used a Latin Square design where each participant saw one condition each from the 12 items, and conditions were evenly presented across participants. These were interspersed with 12 fillers which also functioned as catch trials to ensure participant attention. The fillers were constructed of comparable length and complexity and consisted of clearly grammatical or ungrammatical target sentences. Ungrammatical sentences all had the root of the ungrammaticality inside the DP, such as grammatical number mismatch, presupposition failure, gender mismatch, etc.

Following is a full example of one experimental items across all the conditions in English [(8) and (9)] and Turkish [(10) and (11)].

English:

(8)   {[$_{OneNP}$ A boy]} entered the classroom.

    a.   The/That boy sat down in the front row.   **S**(ame) **S**(ituation)

    b.   I had noticed the/ that boy at a coffee shop yesterday. **N**(ew) **S**(ituation)

(9)   {[$_{TwoNP}$ A boy and a girl]} entered the classroom.

    a.   The/That boy sat down in the front row.   **SS**

    b.   I had noticed the/ that boy at a coffee shop yesterday.   **NS**

Turkish:

(10)   Sınıf-a   {[$_{OneNP}$ bir oğlan] gir-di.
       class-DAT   one boy   enter-PAST
       'A boy entered the classroom.'

      a.   {∅/O} oğlan ön   sıra-lar-dan biri-ne   otur-du.   **SS**
           ∅/that boy   front seat-PL-ABL one.of-DAT sit-PAST
           'The/That boy sat down in one of the front seats.'

      b.   {∅/O} oğlan-ı   daha önce bizim kafe-de   gör-müş-tü-m.   **NS**
           ∅/that boy-ACC before   our   cafe-LOC see-ANT-PAST-1SG
           'I had seen the/that boy at our coffee shop before.'

(11)   Sınıf-a   [$_{TwoNP}$ bir kız ve bir oğlan]} gir-di.
        class-DAT   one girl and one boy   enter-PAST
        'A girl and a boy entered the classroom.'

      a.   {∅/O} oğlan ön   sıra-lar-dan biri-ne   otur-du.   **SS**
           ∅/that boy   front seat-PL-ABL one.of-DAT sit-PAST
           'The/That boy sat down in one of the front seats.'

      b.   {∅/O} oğlan-ı   daha önce bizim kafe-de   gör-müş-tü-m.   **NS**
           ∅/that boy-ACC before   our   cafe-LOC see-ANT-PAST-1SG
   'I had seen the/that boy at our coffee shop before.'

Participants. Participants (N = 55 for English and N = 62 for Turkish) were recruited via Prolific.co. Participants could only participate in the study if object language of the experiment was their first and primary language. The survey was presented via Qualtrics software and took about 15 minutes to complete. Participants were paid for their participation. Participants for the English study were all located within the US. However for the Turkish experiment, participants were recruited from all countries available on Prolific due to the overall low number of Turkish native speakers on the platform. To ensure we analyzed data from participants who were attending to and comprehending our task, data from participants were removed from all further analysis if they did not rate ungrammatical sentences in the catch trials in the bottom half of the response bar (this resulted in removal of 9 participants in English and 2 in Turkish).

3.3 Results

We fit a linear mixed-effects model in R, with experimental conditions as predictors and random by-participant and by-item slopes for experimental conditions. (`fit = lmer(Rating ∼ Definiteness*NP*Situation + (1|ID) + (1|Scenario), data=dataframe`)). There was significant positive main effect of Definites vs. Demonstratives ($p < 0.05$) in both English and Turkish. Since definites were generally acceptable across contexts and our main question was the acceptability of demonstratives given contexts, we repeated our analyses on both our full data and on the subset of data with only demonstratives, and in each language, we generally found the same pattern both in the overall dataset and within demonstrative responses

(Figure 3): we found a main effect of number of prior referents—demonstratives were significantly more acceptable in One NP contexts. We also found a main effect of Situation—demonstratives were significantly more acceptable in New Situations. In addition, while we did not find an interaction between New Situation and Two NP cases in English (p = 0.61), the Turkish data showed an interaction between the two (p = 0.01) in this model. We further analyzed data from each language via an *anova* model comparison, finding the model with an interaction (`NP*Situation`) to be significantly better in accounting for variance in both English and Turkish.

Visual presentation of our results can be seen in Figure 2, which plots participants' acceptability ratings on the y axis versus number of NPs on the x axis. Red bars represent the ratings for demonstratives and blue bars represent definites. Graphs for the New and Same situations are presented side-by-side for comparison.
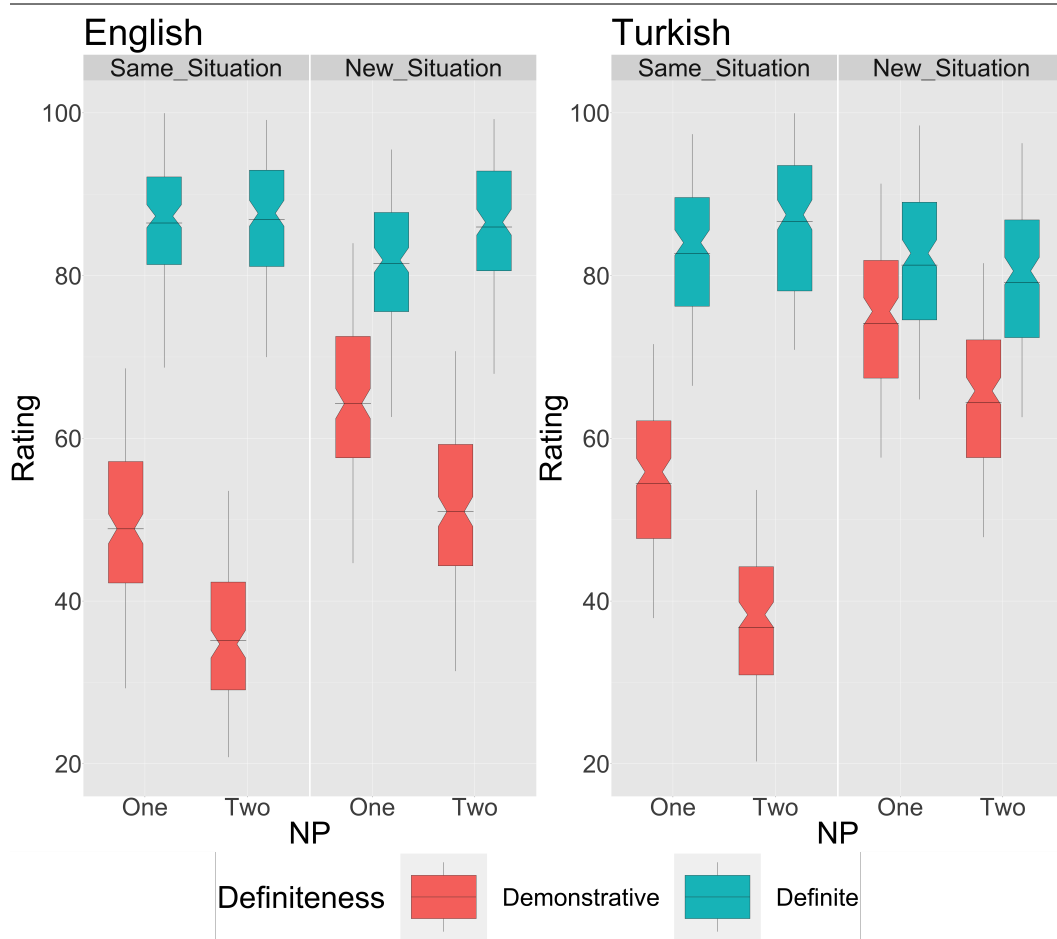
Figure 2   Results from the English (left) and Turkish experiments (right)

English		
parameter	*estimate*	*p-value*
Definites (main effect)	39.412	p < 0.05
Demonstratives		
2 NP	-15.069	p < 0.05
New Situation	15.392	p < 0.05
New Situation*2 NP	1.803	p = 0.61

Turkish		
parameter	*estimate*	*p-value*
Definites (main effect)	28.548	p < 0.05
Demonstratives		
2 NP	-17.913	p < 0.05
New Situation	19.723	p < 0.05
New Situation*2 NP	8.092	p = 0.01

Figure 3   Statistical summary of results

4   Discussion

Participants' ratings of continuations using definite descriptions were generally highly acceptable, unsurprising given the unique, previously mentioned matching NP. In these same scenarios, however, continuations using demonstratives showed acceptability that ranged from near definite levels in the case of a single NP in a new situation to much lower levels in the case of two NPs in a same situation. The relevant examples are repeated below for English:

(12)   {[$_{OneNP}$ A boy]/ [$_{TwoNP}$ A boy and a girl]]} entered the classroom.
      a.   The/That boy sat down in the front row.   **(Same Situation)**
      b.   I had noticed the/ that boy at a coffee shop yesterday. **(New Situation)**

In a nutshell, our findings revealed that the acceptability of demonstratives can vary depending on both of the factors that we tested independently, and also seem to show

some interaction effects. First, the acceptability of a demonstrative can depend on whether one or two NPs are introduced in the initial sentence. Second, acceptability of a demonstrative is influenced by whether the follow-up sentence introduces a clearly new situation or not. Our experiment tested the effect of these two factors across both argumental positions (subject and object) and for both inanimate and animate referents across different contexts. Additionally, the pattern is robustly borne out irrespective of how languages choose to express definiteness—with overt lexical exponent, as in English, or with bare nouns, as in Turkish.

4.1 Proposal

What do our results mean for the semantics of demonstratives and definites? Dayal & Jiang (2021) argue that in anaphoric contexts both demonstratives and definites involve an anaphoric index argument, building on Schwarz's (2009) analysis of strong vs. weak definites. They further argue that demonstratives differ in having an anti-uniqueness presupposition that *can* be satisfied in a larger situation (introduced by the second sentence) despite the value of the demonstrative expression itself being evaluated in the smaller situation (introduced by the first sentence).

Slightly modifying their view, we instead argue that demonstratives are evaluated in the maximal situation, wherein their anti-uniqueness requirement *must* also be met, and this can be met in multiple ways with a context (overtly mentioning another NP and/or significantly extending the situation to potentially include a new NP). We propose that a maximal situation s is the sum of the situation s_1, in which the initial sentence is evaluated, and the new situation s_2, introduced in the subsequent sentence, if it involves an additional participant and a temporal change from the previous situation, as manipulated in our experiment. Following Elbourne (2005) in introducing the index argument before the property argument, we represent definite and demonstrative determiners in anaphoric contexts as illustrated below:[1]

(13)   a. $[\![\text{DEF}]\!] = \lambda s.\lambda y.\lambda P : \exists!x\,[P_s(x) \wedge x = y].\ \iota x\,[P_s(x) \wedge x = y]$
           (Schwarz 2009)
    b. $[\![\text{DEM}]\!] = \lambda s.\lambda y.\lambda P : Maximal(s) \wedge\ \exists!x\,[P_s(x) \wedge x = y] \wedge |P_s| > 1.$
         $\iota x\,[P_s(x) \wedge x = y]$

The definite determiner takes a situation s and an index argument y besides a property P and returns the unique individual that both satisfies P and equals y in

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[1] Schwarz's strong definite determiner introduces the index argument last, though he notes that there are no substantive differences between his and Elbourne's version. We prefer Elbourne's approach because, as detailed below, we propose that demonstratives involve focus on the index. Since focus needs to be realized on an overt item and the index is null, we propose that the focus placement is on the demonstrative determiner. This is more feasible if the index is introduced as the first argument.

s, if defined. The demonstrative determiner differs in its definedness conditions. That is, it presupposes the existence of a unique individual that both satisfies *P* and equals *y* in the maximal situation *s* ($s_1 \oplus s_2$) and requires the set denoted by *P* to have cardinality greater than 1 in that maximal situation.

We take our data to be best explained in a focus-driven information structural approach in the sense of Rooth (1992) and Roberts (2002) to demonstratives.[2] We argue that demonstratives essentially differ in evoking focus alternatives on the index argument, besides the presuppositional distinctions laid out above. Basically, we claim that the definite determiner is used in the absence of focus in the DP (14) or when focus is on the entire DP (15), while the demonstrative is used when focus is within the DP on its index argument (16). Since semantic focus is on the null index argument, focus placement is on the demonstrative determiner as it combines with the index before the property argument. Therefore, demonstrative determiners are predicted to be overt across languages in contrast to the definite determiner, which may be covert, as in Turkish.

(14)   the boy/∅ oğlan   (*no focus with DP, e.g. 1 NP cases*)
$[\![[[\text{DEF 1}]\text{ boy}]]\!]^o = \iota x\,[boy(x) \wedge x = g(1)]$

(15)   the BOY/∅ OĞLAN   (*as opposed to the girl, e.g. 2 NP cases*)
$[\![[[\text{DEF 1}]\text{ boy}]_F]\!]^o = \iota x\,[boy(x) \wedge x = g(1)]$
$[\![[[\text{DEF 1}]\text{ boy}]_F]\!]^f = \{\iota x\,[boy(x) \wedge x = g(1)], \iota x\,[girl(x) \wedge x = g(2)]\}$

(16)   THAT boy/O oğlan   (*as opposed to another boy*)
$[\![[[\text{DEM 1}_F]\text{ boy}]]\!]^o = \iota x\,[boy(x) \wedge x = g(1)]$
$[\![[[\text{DEM 1}_F]\text{ boy}]]\!]^f = \{\iota x\,[boy(x) \wedge x = g(1)], \iota x\,[boy(x) \wedge x = g(3)]\}$

In terms of predicting our data pattern, definites are highly acceptable across the board as expected given that all scenarios are consistent with a unique boy. In terms of where participants may be placing prosodic focus, our stories set up no expectation for DP focus at all in One NP cases. In the Two NP cases the natural focus is on the DP itself (*the boy*, contrasted with *the girl*), which is acceptable focus placement with a definite determiner.

On the other hand, demonstratives are degraded in 2 NP cases. We take this to be because the presence of 2 NPs biases towards the placement of focus on the whole DP, naturally invoking a contrast between the two discourse referents introduced in the first sentence. Demonstratives are also generally degraded in Same Situation

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2 In Roothian focus semantics, $[\![\alpha]\!]^f$ is the focus semantic value of the phrase α, which is a set of alternatives from which the ordinary semantic value is drawn. The ordinary semantic value of an expression, i.e., $[\![\alpha]\!]^o$, is the regular semantic value assigned by the interpretation function.

trials as opposed to New Situations trials. We take this to be because continuation with a New Situation is most compatible with considering a maximal situation involving other boys (e.g., $g(3)$), which under our analysis is the best scenario for focus on the index argument of *that*.

That we find the same pattern in languages that express definites through articles (English) or bare nouns (Turkish) reinforces the potential crosslinguistic breadth of our proposal.[3] We suggest that the contrast in Mandarin (see (6-b)) is obfuscated since bare nouns in Mandarin can also have generic readings owing to the lack of tense and aspectual marking, as well as indefinite readings in postverbal positions (Cheng & Sybesma 1999). Demonstratives, though, would be unambiguously anaphoric.

Recall that we departed from Dayal & Jiang (2021) in proposing a demonstrative expression is evaluated in the maximal situation. This is to derive the desired focus alternatives, involving $g(3)$ (another boy) as an alternative to $g(1)$ (that boy) in (16), for instance. To see this point, assume that the demonstrative expression is evaluated in the situation of the first sentence (s_1) and picks the unique boy with the index 1 ($g(1)$) introduced in this situation as its referent. This is the ordinary value of the DemP *that boy*, but it requires at least one other boy to be a member of the set of alternatives denoted as its focus value. Now, if s_1 does not involve an alternative boy, then the focus value will be equal to the ordinary value, failing to create a contrast between that boy and another boy. However, if the demonstrative is always evaluated in the maximal situation $s_1 \oplus s_2$, it will still refer to $g(1)$ introduced in s_1 and will be able to involve other boys that are part of the new situation s_2 in the alternative set.

It should be emphasized that $g(3)$ does not have to be explicitly introduced in the discourse. All that matters is how easily we can consider the potential presence of other boys in the situation where the demonstrative expression is evaluated, given that we are dealing with degradedness rather than absolute ungrammaticality in our data. We conjecture that $s_1 \oplus s_2$ is more compatible with considering alternative boys than s_1 alone, when such boys are not introduced explicitly in the discourse. In other words, when the second sentence introduces new participants together with a temporal change from the previous situation, it is more likely that other boys are now also part of it, compared to the cases where the situation remains unchanged in the second sentence.

As a final note, defining a new situation in a manner that distinguishes it from the previously introduced situation is not entirely straightforward. Kratzer (1989)

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3 The continuations in the Turkish items given in (10) and (11) involve the definite and demonstrative expressions in the sentence-initial position, which is also the topic position in Turkish. It is worth noting that the target expressions in our Turkish experiment appeared in various positions preceding the verb, and in Turkish, focused phrases have the flexibility to occur in any position before the verb (Göksel & Özsoy 2009).

defines a minimal situation as encompassing only the individuals, properties, and relationships necessary to render a particular proposition true. Based on this definition, what we refer to as the "same situation" in our trials—the situation in which the second sentence is evaluated—should be considered an extension of the minimal situation introduced in the first sentence. Since our experiment tests the impact of a significant situational change in the second sentence on the acceptability of demonstratives, we attempt to differentiate between a minimal situational extension and a significant one in the second sentence to the best of our ability. In line with Dayal & Jiang, though, we label these as "same situation" vs. "new situation" rather than using terms like "minimal extension" vs. "significant extension," for instance. To recapitulate, we consider the situation introduced in the first sentence to remain unchanged (minimal/same) in the second sentence unless new discourse referent(s) and a temporal change are both involved (significant/new).[4]

In summary, we have found that the acceptability of demonstratives depends independently on the introduction of one or two NPs in the initial sentence and the presence or absence of a new situation in the follow-up sentence. To account for this pattern, we have proposed a focus-driven information structural approach to demonstratives. Based on the assumption that both definites and demonstratives include an index argument in anaphoric contexts, we argue that the key difference of demonstratives is their ability to evoke focus alternatives on the index argument.

4.2 Cases of multiple anaphoric DPs

Our experimental items always involved only one anaphoric DP in the follow-up sentence regardless of whether the initial sentence introduced one or two discourse referents. Closely associated with our study, Hinterwimmer (2019) and Hinterwimmer & Patil (2022) recently discuss a contrast between definite and demonstrative descriptions in continuations with multiple anaphoric DPs. They found that sentences with two anaphoric demonstrative descriptions [(17-b)] are less acceptable than both (i) sentences with two anaphoric definite descriptions (17-a), and (ii) sentences where one of the two referents introduced in the previous sentence is picked up by a demonstrative description, while the other one is picked up by a definite description [(17-c) and (17-d)] (Hinterwimmer & Patil 2022: 3).

(17)   a.   Last night, a dog chased a cat in front of my house. Fortunately, [the cat] was pretty fast, while [the dog] was rather slow.
       b.   Last night, a dog chased a cat in front of my house. ??Fortunately,

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4 In Hinterwimmer & Patil (2022), which we discuss next, the situation in which the second sentence is evaluated is considered a "minimal extension" of the minimal situation introduced in the context sentence, regardless of whether the change involved is significant or not, in the way described above.

> [that cat] was pretty fast, while [that dog] was rather slow.
>
> c. Last night, a dog chased a cat in front of my house. Fortunately, [that cat] was pretty fast, while [the dog] was rather slow.
>
> d. Last night, a dog chased a cat in front of my house. Fortunately, [the cat] was pretty fast, while [that dog] was rather slow.

Hinterwimmer & Patil (2022) proposes a pragmatic account for this pattern, attributing the infelicity of co-occurring anaphoric complex demonstratives to the violation of an economy principle (building on King 2001; Elbourne 2008; Nowak 2014; Ahn 2019). The core idea of their proposal is the following: Utterance of a demonstrative description implicitly sets up a comparison between the referent of that demonstrative and all other entities that satisfy the predicate denoted by the NP-complement of the demonstrative determiner.

In (17-b), the particular cat denoted by the first demonstrative is implicitly contrasted with all other cats in the world of evaluation and the particular dog denoted by the second demonstrative is implicitly contrasted with all other dogs in the world of evaluation. At the same time, since the two entities ('that cat' and 'that dog') are referred to by DPs that only differ with respect to the nominal predicates, they are automatically implicitly contrasted with each other as well, just as in the case of the two definite descriptions in (17-a). The co-presence of two implicit contrasts makes the second sentences in (17-b) unnecessarily complex and is therefore responsible for its being dis-preferred to the other options exemplified by (17-a), (17-c) and (17-d), respectively: In the case of (17-a), only one implicit contrast is invoked—the contrast between the unique cat and the unique dog in the given situation. In the case of both (17-c) and (17-d), on the other hand, the only implicit contrast that is invoked is the contrast between the entity denoted by the demonstrative description and the individuals in the set denoted by its NP complement. Crucially, there is no implicit contrast between the two anaphoric entities ('that dog' and 'the cat', and vice versa), since the respective DPs do not only differ with respect to the nominal predicates, but also with respect to the determiners.

Our proposal aligns with Hinterwimmer & Patil's proposal in terms of the underlying intuition, which involves a demonstrative description implicitly establishing a contrast between the referent of that demonstrative and other entities denoted by the NP-complement of the demonstrative determiner. However, it remains uncertain how their current implementation can effectively account for the pattern first presented in (4), repeated below, which corresponds to our Same Situation, Two NP trials.

(18)   a. I saw a dog and a cat. The dog looked happy.
           b. I saw a dog and a cat. ??That dog looked happy.

Hinterwimmer & Patil's account predicts (18-b) to be felicitous since the anaphoric demonstrative description only invokes one implicit contrast between the entity denoted by the demonstrative description and the individuals in the set denoted by its NP complement. Given that the second sentence does not involve another demonstrative expression, the further implicit contrast between 'that cat' vs. 'that dog' does not arise unlike the case in (17-b). Therefore, we do not expect any dis-preference with respect to the use of (18-b), which contradicts our experimental findings.

On a further note, recall that our experimental findings indicate that if two discourse referents are introduced in the preceding sentence, using a demonstrative to pick one of them up anaphorically is degraded. However, prima facie this does not seem to align with the findings in Hinterwimmer & Patil (2022), where examples like (17-c) and (17-d) are found to be felicitous, in which one of the two referents introduced in the previous sentence is picked up by a demonstrative description, while the other one is picked up by a definite description. To understand the seemingly contradictory findings, it is worth noting that our experimental designs differed in one crucial way—how the two discourse referents were introduced in the initial context sentence. Our experiment always introduced both referents in the same syntactic position (subject or object). On the other hand, the sentences reported in Hinterwimmer & Patil (2022) introduced them in different syntactic positions, one referent in the subject position and one in the object position. Thus the two discourse referents introduced in their context sentences were not focus competitors of each other. To illustrate, consider the sentence in (19) introducing one discourse referent each in the subject and object position:

(19)   A bear killed a man.

Here, possible focus alternatives in the subject position could be {*a bear, a lion, a tiger*, …}. Similarly, for the object position, possible focus alternatives could be {*a man, a woman, a child,* …}. Crucially, the two discourse referents introduced in (19), 'a bear' and 'a man', are not focus competitors of each other. In contrast, our experimental design always introduced both the discourse referents in the same syntactic position, necessarily pitting them against each other as focus competitors. This results in the degradedness of anaphoric demonstrative descriptions in (18-b), but its lack thereof in (17-c) and (17-d). Hence, this distinction in the findings could potentially be accounted for in our proposal. However, this is only a preliminary hypothesis that needs to be verified with further empirical study before definitive claims can be made. We leave this for future research.

5 Conclusion

In summary, to gain a deeper understanding of definite and demonstrative semantics, we directly compared the two in an acceptability study. The findings revealed evidence supporting the presence of information structural constraints on demonstratives, which, we argue, require focus to be realized on the index argument within the DP. These constraints appeared to complement those of definites, where focus is either absent or placed on the entire DP.

Our study naturally has limits; for example, participants judged demonstratives directly against definites, which is likely to highlight the contrast between the two. Nevertheless, we view our conclusions as broadly complementing work on the demonstrative spectrum, proposing focus placement as playing a critical role in the distinction between definites and demonstratives. The consistent pattern observed in languages that express definites through articles (English) or bare nouns (Turkish) enhances the potential applicability of this proposal across different languages.

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