

Requestive Speech Leads to Referential Clarity in Turkish Preschool Children

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1. Introduction

Communication is effective to the extent that it takes into account shared and unshared information between the speaker and the addressee. For example, imagine two children who are constructing paper boats in their art class, and a big pair of scissors and a small pair of scissors are on the table. If one of the children asks for “the scissor”, then she needs to specify the size of the desired one (e.g., the big pair of scissors) for the communication to proceed smoothly. Otherwise, her addressee would not be able to understand which specific pair of scissors is desired. But if one of the scissors is occluded from the addressee, for example by a coloring book, specification of the size of the desired pair of scissors is redundant. As this example demonstrates, speakers and addressees need to keep track of what is visually accessible to their communicative partners for an effective communication. In other words, speakers and listeners must collaborate in a framework of *common ground*, defined as the sum of their mutual knowledge, beliefs, assumptions, and attitudes (Clark, 1992; Clark & Marshall, 1981).

Researchers have been examining how children monitor immediate or potential perceptual access of their communicative partners to external objects since the 1970s (e.g., Glucksberg, Krauss, & Higgins, 1975; Sonnenschein & Whitehurst, 1984; Warren & Tate, 1992). A common finding of these earlier studies is that preschool-age children often fail to integrate other people’s perspective into a certain situation, and thus are prone to producing inadequate referential forms. Therefore, many researchers claimed that not until the end of preschool years, children could coordinate their recipient’s visual perspective with their own and tailor their speech accordingly.

However, some recent studies demonstrate that in certain situations preschoolers are able to consider their partners’ visual access to objects while formulating their speech. For instance, O’Neill (1996) showed that children as young as two used more gestures to clarify the location of a hidden toy when their parent did not witness the hiding of a toy. Similarly, Nadig and Sedivy (2002) demonstrated that five- to six-year-olds produced more size adjectives when their partner had visual access to objects of different sizes. In a recent training study, Matthews, Lieven and Tomasello (2007) showed that two- to four- year-old children made an improvement in their referring strategies when

they were provided with feedback about their initially ambiguous referring norms. These studies suggest that preschoolers could take their addressee's needs into account and adjust their communication accordingly *in certain situations*. We conducted two experiments to further investigate the factors leading children to use referentially more appropriate terms.

1.1. Present Study

Two experiments were conducted to examine age-related differences in considering pragmatic constraints exhibited by mutually and privately perceivable objects in producing referential utterances. In both experiments, participants were asked to *verbally* identify a particular object from an array so that the confederate can pick up that object to use in some arts-and-crafts activity. We manipulated three conditions: (1) the common ground condition, where two similar objects of different sizes were visible to the participant and their partner; (2) the privileged ground condition, where only one of two similar objects was visible to the partner, while both are available to the participants and (3) the baseline condition with no similar objects on the ground.

Study 1 was conducted with three different age groups: 5- to 6-year-olds, 9- to 10-year-olds, and adults. In the first study, we addressed the following specific questions: (1) whether there are any age-related differences in the rate of use of disambiguating adjectives of size in the common ground vs. the privileged ground conditions. We expected that all age groups would use more discriminating adjectives in the common ground condition than in the privileged ground condition, but the tendency to use adjectives in a disambiguating fashion would increase with age, (2) whether there are any age-related differences in the form of linguistic constructions used to request referents from the confederate. We address this second question because the type of constructions employed might be revealing about the pragmatic intentions of the speaker in uttering a referential term (discussed further in Section 1.2).

A subsequent study (Study 2) was run with just 5- to 6-year-old children to determine whether they would use more mature referential strategies if we changed our instructions to encourage requestive forms by prompting for polite language. This manipulation addressed a third question: (3) whether preschoolers use more uniquely identifying referring expressions in conditions where polite requesting forms are explicitly demanded from them as opposed to when responding to relatively more neutral instructions as used in Study 1. We speculated that the urge to use requestive language would prompt full constructions, which, in turn, would lead to more referentially appropriate utterances.

1.2. Relevant Properties in Turkish

The Turkish language uses nominal casemarking to indicate non-subject grammatical roles, which implies definiteness. Specific referents in direct object

position bear accusative casemarking while non-specific referents do not feature casemarking (Enç, 1991; Erguvanlı, 1984; Ketrez, 2004). In this study, we expect participants to place referring expressions in direct object positions in their utterances. As exemplified in (1a), the accusative marking on the direct object signifies that the speaker has a specific and identifiable scissor in mind. The absence of the accusative case in the same sentence (1b), on the other hand, implies that no unique entity is entailed.

(1a) Bana makas-ı ver.
I-DAT scissor-ACC give.
'Give me the scissor.'

(1b) Bana makas ver.
I-DAT scissor give
'Give me a scissor.'

Adjective production is also relevant in this study. In Turkish, adjectives are prenominal (such as in 2) when they are used as modifiers.

(2) Büyük makas-ı ver.
big scissor-ACC give
'Give me the big scissor.'

Utterances such as 2 including a prenominal discriminatory adjective, accusative casemarking, and a verb of giving are standard constructions for disambiguating referential forms used by adults in our study. In other words, such constructions are used when the speaker and the addressee both have visual access to two objects of different sizes from the same category. Absence of any or all of the linguistic features used in 2a (i.e., adjective, accusative casemarking, verb of giving) for the same situation indicates relatively immature referential requesting strategies, as they are seen in children's constructions.

2. Study 1

2.1. Study 1: Participants

15 preschoolers (6 boys and 9 girls; mean age = 5;6, range: 5;2 - 5;8), 15 primary school children (6 boys and 9 girls; mean age = 9;5, range: 8;10 -10;1) and 15 college-age adults (5 males and 10 females) participated in Study 1. All were native speakers of Turkish.

An undergraduate research assistant who was on about the procedures of the experiment played the role of confederate in all of the experimental sessions.

2.2. Study 1: Setup and Procedure

All of the experimental sessions took place on a table where the participant and the confederate were seated on opposite sides. The table was divided into two parts by an L-shaped wooden block of 50 cm in length and 15 cm in height. The participant was seated behind the area covered by this block from the confederate. The mutually visible part of the table is considered to be the common ground; the separated part accessible just to the participant is considered to be the privileged ground. There was a videocamera set up on a tripod in one corner of the room to record all the experimental sessions.

The participants were asked to give instructions to an adult confederate as a part of an arts-and-crafts session. Objects relevant to an arts-and-crafts activity (scissors, crayons, colored papers, and adhesives) were used as potential referents. Two different sizes of the scissors, crayons, colored papers, and adhesives were available to constitute four sets of contrasting objects.

All participants were told that the purpose of the experiment was to design a new game for children. The experimenter explained the two different regions of the setup accessible just to the participant (i.e., privileged ground), and both the participant and the confederate (i.e., common ground), repeating the instructions twice. The child participants were then moved to the chair where the confederate will be seated to demonstrate that there is no visual access to the area blocked by the L-shaped barrier from that point. Then, all the objects that will be used in the experiment were held out by the experimenter to the participant to be labeled. In the few cases where the child was not able to provide a label, the experimenter supplied the label. Just before the experiment began, the confederate entered the room and was introduced to the child by her name.

Before each trial, the experimenter asked the confederate to close her eyes and turn her back to the participant, and then placed the objects on the table. Once the experimenter reorganized the objects on the table, she pointed at the target object and said to the participant *bunu almasını söyle* 'tell her to pick this up.' The confederate then turned her face towards the participant, opened her eyes, looking at the face of the participant until the participant gave a verbal response. If the participant attempted to point at the target object, the experimenter warned him/her not to point, asking for a verbal behavior. The confederate picked the object referred by the participant. When the participant produced an ambiguous utterance in the common ground trials, the confederate chose either of the object pairs. After each trial, the confederate used the object that she just picked up in building something such as a tree cut off from paper to make the activity appear more realistic to the participant. The order of 12 trials (4 common ground + 4 privileged ground + 4 baseline conditions) was randomized and given in that same order to all of the participants.

2.3. Study 1: Coding and Transcription

All the utterances produced were transcribed verbatim and coded based on whether the participants produced discriminating adjectival modifiers or not. The form of the linguistic construction embedding the referential expression was

also coded to indicate whether it included an accusative case marking and a verbal phrase. All the transcriptions and the coding were done by the second author, and checked by the first author, both native speakers of Turkish. The agreement between the two coders was 100%.

2.4. Study 1: Results

We conducted two analyses to compare response patterns across the three age groups. In the first analysis, we looked at the percentage of trials where discriminating adjectives were used. In the second set of analyses, we examined the patterns of constructions embedding the referential forms produced by the different age groups.

2.4.1. Rate of Adjective Production

Figure 1 shows the mean proportion of trials where adjectival modifiers were produced for the common ground, the privileged ground, and the baseline conditions across the three age groups. In the common ground condition, where there were two similar objects of different sizes in the shared visual scene, an adjectival modifier was produced in 100% of the trials by the adult participants, in 78% of the trials by the primary school children, and in 30% of the trials by the preschoolers. In the privileged ground condition, when a modifier was not necessary from the perspective of the confederate, adjectives were produced in 8% of the trials by the adult participants, in 18% of the trials by the primary school children, and in 12% of the trials by the preschoolers. Adjectival modifiers were rarely produced by any of the age groups in the baseline condition.

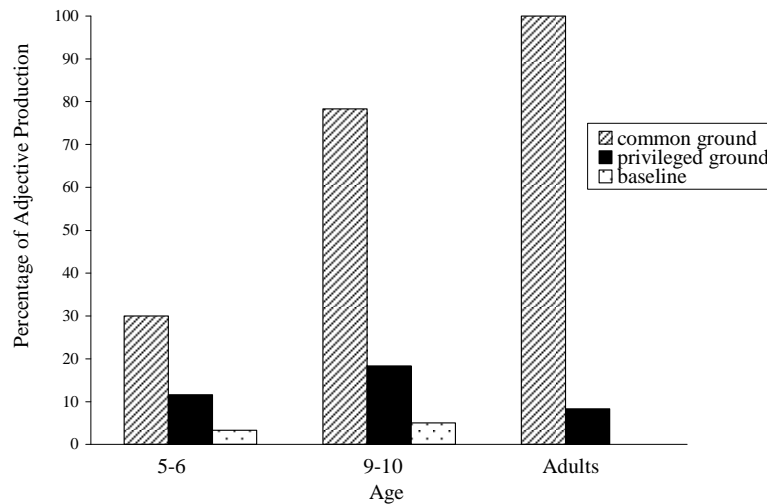


Figure 1. The percentage of trials with discriminating adjective production

These scores were entered into a mixed ANOVA with factors condition (3) (repeated measures) x age (3). There was a main effect of condition, $F(2, 84) = 172.28, p < .001$, partial $\eta^2 = .802$, and a main effect of age, $F(2, 41) = 6.22, p = .004$, partial $\eta^2 = .230$. The interaction between condition and age was also found to be significant, $F(4, 84) = 20.28, p < .001$, partial $\eta^2 = .491$.

Post-hoc tests were run to further analyze the interaction. The analyses revealed age-related differences only in the common ground condition, where the adult participants produced significantly more adjectival modifiers than the preschoolers, $F(1, 84) = 108.4, p < .001$ and the primary school children, $F(1, 84) = 10.4, p = .002$, and the primary school children used more adjectival modifiers than the preschool children, $F(1, 84) = 51.6, p < .001$. In the other two conditions (i.e., the privileged ground and the baseline conditions), the age groups did not differ in respect to the proportion of trials where adjectival modifiers were produced.

2.4.2. Referential Constructions

The second set of analyses was run to examine characterization of the types of referential constructions used for the referents. The linguistic form of the referential expressions used by the participants exhibited some interesting age-related patterns. Figure 2 indicates the means of the number of bare nouns phrases (i.e., not followed by accusative casemarking and/or a verbal phrase) in each condition by age group. Since there were four trials in each condition, the means are out of 4.

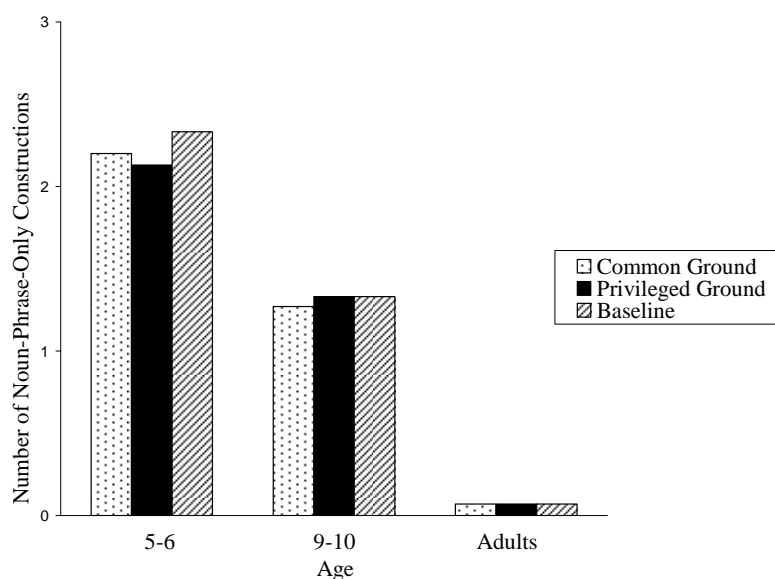


Figure 2. The number of noun-phrase-only constructions across ages

A mixed ANOVA with factors condition (3) and age (3) showed a significant main effect of age, $F(1, 42) = 7.36, p = .002, \text{partial } \eta^2 = .259$. There were no significant differences between conditions with respect to the type of referential construction. It is evident that the adults rarely use merely noun phrase constructions in their references. In addition, with increasing age, participants produce fuller constructions with accusative case marking and/or a verbal phrase, revealing a pragmatic intent of requesting a particular object regardless of the experimental condition.

2.5. Study 1: Discussion

The results of the first analysis suggest that all age groups distinguish the common ground condition from the privileged ground and the baseline conditions to some extent. Some speakers in the youngest group produced more adjectival modifiers when two competing objects are available to both themselves and the confederate than when one of the objects is hidden from the confederate's viewpoint. However, their performance as a group was not yet at the level of older children and adults.

The analysis of the referential constructions revealed interesting age-related patterns. Especially 5- to 6- year-olds predominantly used bare noun forms to refer to the objects (i.e., *makas* 'scissors') across all conditions, and as we discussed in the introduction, providing case marking on a noun and/or placing it in a verbal construction reveals a pragmatic intent of requesting an object, whereas a bare noun might just reflect intent of labeling. Based on this, we speculated that some participants, especially the youngest ones, were labeling objects rather than requesting them. This speculation made us wonder about whether there is a link between overt requests and unique identification.

3. Study 2

3.1. Study 2: Participants

We tested a different group of preschoolers in Study 2 (5 boys and 10 girls). The mean age was 5;3 (range: 4;10 – 6;1), which was slightly younger than that in Study 1. All children were native speakers of Turkish from middle-SES backgrounds.

3.2. Study 2: Setup and Procedure

The experimental setup and the procedure were exactly the same as the Study 1. The only difference between two studies was the set of instructions used in eliciting language production from the participants. In Study 2, we used instructions prompting for polite requestive speech. We instructed the participants 'to ask nicely and politely for the objects pointed' from the confederate.

3.3. Study 2: Results

3.3.1. Rate of Adjective Production

The effect of the condition on the rate of adjective usage was analyzed with repeated ANOVA, revealing a main effect of condition, $F(2, 28) = 19.79$, $p < .001$, partial $\eta^2 = .586$. Planned comparisons were run to analyze this effect in more detail. The analyses revealed a significant difference between the common ground condition and the privileged ground condition, $F(1, 28) = 13.26$, $p = .011$, and baseline conditions $F(1, 28) = 39.24$, $p < .001$. In the common ground trials, the participants produced more adjectival modifiers than they did in the privileged ground and the baseline conditions. The difference between the privileged ground and baseline conditions also reached significance $F(1, 28) = 6.87$, $p = .037$. The participants produced more adjectives in the privileged ground condition than in the baseline condition.

Figure 3 shows the percentage of adjective production produced by the two preschool groups. The group of Study 1 is not prompted for requestive language, whereas the participants of Study 2 were prompted for polite requests.

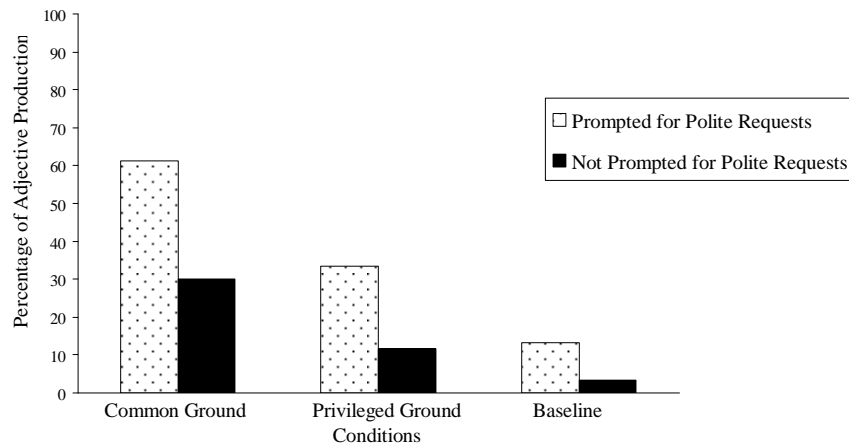


Figure 3. The percentage of adjective production by the two preschool groups

A mixed ANOVA was conducted with factors condition (3) (repeated measures) x group (2) to compare the two preschool groups. The results revealed a main effect of condition, $F(2, 56) = 23.360$, $p < .001$, partial $\eta^2 = .455$, and a main effect of group, $F(2, 28) = 4.81$, $p = .037$, partial $\eta^2 = .147$. Planned comparison of the main effect of condition revealed that participants produced significantly more adjectival modifiers in the common ground condition than in the privileged ground, $F(1, 56) = 17.5$, $p < .001$ and the baseline conditions $F(1, 56) = 45.79$, $p < .001$, and they used more adjectival modifiers in the privileged ground condition than in the baseline condition, $F(1, 56) = 6.67$, $p = .012$. In sum, we find that the participants in Study 2, who were urged to

produce polite language, produced more discriminating adjectival modifiers at all conditions compared to the participants of Study 1.

3.3.2. Referential Constructions

Figure 4 shows the percentage of full constructions used by the two preschool groups.

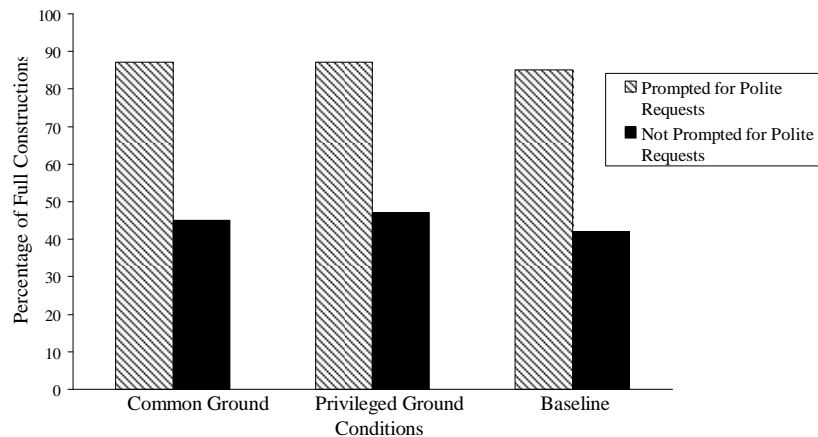


Figure 4. The percentage of fuller constructions by two preschool groups

A mixed ANOVA with factors condition (3) and group (2) showed a significant main effect of group on the rate of full constructions, $F(1, 28) = 7.31, p = .012$, partial $\eta^2 = .207$. That is the group prompted for request forms provided fuller constructions than the group of children who were not explicitly prompted for request forms. In Study 2, only in 13% of trials, the participants produced just bare nouns, compared to 56% in Study 1. In Study 2, only 2 children provided noun-only constructions; both of them did not provide any discriminating adjectives in any of the trials. Across conditions, 87% of the trials were rendered with a full construction including the verb 'al' 'take' and/or accusative case marking on the noun.

4. General Discussion

The results of the first study revealed that even though they lag behind the older age groups in adjective production, the preschoolers are able to distinguish the common ground condition from the other two conditions to some extent. The results also suggested that there is development beyond 9- to 10-years of age in differentiating common ground. That is, it seems that children become progressively more reliable over time in providing distinguishing adjectives in

the common ground condition. Moreover, children's production of fuller referential constructions seems to increase with age. Especially, the majority of youngest age group in Study 1 produced noun-phrase-only referential expressions (e.g., *makas*; 'scissor') without providing casemarking on a noun or embedding them in a verbal construction.

This tendency to produce bare expressions might be reflecting the dissimilar approaches of the different age groups towards the task. That is, the preschoolers in the Study 1 may be just *labeling* the objects rather than *differentiating* them. Therefore, it is quite plausible that preschoolers' low discriminating adjective production might not be due to differences in underlying cognitive-communicative capacities, but it may be simply a result of dissimilar stances.

To test this hypothesis, we conducted the second study and asked a different group of preschoolers be kind and polite while asking for the objects from an adult confederate. This manipulation in the instructions produced striking results. The preschoolers in the Study 2 produced significantly more adjectives than those tested in the first study. Moreover, the group prompted for polite requests provided fuller referential constructions.

Why might requestive speech led to referential clarity? As suggested by Brown and Levinson (1988), if speakers intend to be polite, they adapt more to a partner's perspective. Schober and Brennan (2003) discuss findings of a study (described in Hermann, 1988) showing that students describing the location of an object's position to an addressee took their partner's perspective far more often when they were told that their addressee represented a professor than when it represented a fellow student. As Ervin-Tripp, Guo, and Lambert (1990) pointed out one needs to specify enough information for the addressee to figure out what exact action is desired.

Overall the results of the Study 2 suggest that young children can implicitly assess commonality even when their initial attempts at linguistic expressions are relatively immature. Even the youngest age group is starting to take into account a partner's visual perspective, providing distinguishing adjectives more often in the common ground condition than in the privileged ground condition. However, with respect to "message formation", we observe gradual attainment of the adult norms across the three increasing age groups. Children become progressively more likely to use case marking and to use the referring expressions in a verbal form, signaling clear pragmatic intent to make a request. Moreover, when this pragmatic intent is highlighted by the experimental instructions, five-year-olds demonstrate an increase in the amount of requestive speech acts and the amount of uniquely identifying referring expressions.

However, there is a caveat to the above discussion. When prompted for requestive language, the five-year-olds produced relatively more elaborate language. As Whitehurst, Sonnenschein, and Ianfolla (1981) demonstrated, five-year-olds pay attention to the length of utterances more than the informative-ambiguous distinction, often producing overspecified referential forms after listening to informative, but nonredundant, speakers. Thus, are our speakers producing more adjectives because they are being more verbose or are they

really adapting their referential expressions to the different conditions of visual access of the addressee to the referents? Figure 3 shows that in both Study 1 and Study 2 the children produced roughly twice as many adjectives in the common ground condition as in the privileged ground condition. On the basis of this comparison, it could be argued that the children in Study 2 were not more informative than those in Study 1. However, it is also evident from Figure 4 that the participants in Study 2 were generally producing more elaborate constructions in all conditions. Thus, the greater use of adjectives in the common ground condition compared to the privileged ground condition cannot be merely explained by the increased elaborativeness of the language used. It is possible, though, that the improved performance of the children in Study 2, compared to their counterparts in Study 1, could be accounted for by the combined effects of a newly emerging ability for appropriate referential language and use of more elaborate constructions. It is possible that only some children understood the need to use an adjectival modifier to uniquely specify a referent in the common ground condition when prompted for requestive speech acts. Others, on the other hand, were using the prompt to generate lengthier language overall, which also led to more adjective usage. Matthews, Lieven and Tomasello (2007) showed that children as young as 2;6 can be trained to become informative and in their study children were not just learning to become as elaborate as possible in all communicative situations.

In conclusion, it is important to understand how children approach the communication task by evaluating behavior in referential communications tasks. This study shows that preschoolers become more inclined to produce unambiguous referential terms, when they embed referring terms in requestive speech acts. Future work should track the developmental course of referential communication ability and examine younger age groups, nonverbal means of monitoring different visual perspectives of the listener, and the effect of more naturalistic feedback to the speaker.

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