

Children's Language-Based Pedagogical Preferences in a Multilingual Society

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A majority of the world's population is multilingual, yet children's language-based preferences have largely been studied in Western monolingual contexts. The present research investigated language-based preferences in 4- to 8-year-old children living in Hyderabad, India, a multilingual region with languages such as Telugu (official language of the state, and the native language of many children in the state) and English (medium of instruction in some schools). We presented to children novel objects and probed their selective preference to learn from different speakers (Telugu, British-accented English, or Indian-accented English). In addition, the current study assessed the flexibility of children's preferences by manipulating the learning goal (i.e., performance goal vs. enjoyment goal) and learning content (i.e., Science, Technology, Engineering and Mathematics [STEM] objects vs. cultural objects). Children showed a preference for both English speakers over Telugu speakers, a tendency that increased with age. This preference was especially pronounced for performance learning goals and for STEM learning content. Furthermore, children whose native language was Telugu showed a less pronounced English bias. The results of this study provide new insights into the development of language-based biases in multilingual environments. First, they highlight dual and intersecting considerations of speaker familiarity and speaker status in guiding children's choices about from whom to learn. Second, the results suggest that children's language-based preferences in a pedagogical setting are flexible, as children integrate social cues (e.g., language-based attitudes) as well as contextual cues (e.g., the learning goal) strategically.

Public Significance Statement

In a rich multilingual society like India, we find nuance in children's reasoning about language. Our results demonstrate that children prefer to learn from English speakers, over local language speakers. This preference is modulated by the learning goal, learning content, and the child's native language. These findings suggest dual and intersecting considerations of speaker familiarity and speaker status in guiding children's choices about from whom to learn.


Keywords: language biases, social learning, children, social status, multilingual

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Language serves utility beyond a means of communication. It serves as a rich, highly informative tool by which people make inferences and judgments about others (Giles & Billings, 2004; Labov, 2006). Classic studies in psycholinguistics with adults and adolescents (see Kinzler, 2021 for a review) have demonstrated that people's

group preferences typically focus on two components: a preference for those who speak the same language as the listener (ingroup preferences) and a preference toward people who speak a language or accent associated with higher status in society (high-status preference). Language-based social preferences have been found to emerge early

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Marc Colomer and Radhika Santhanagopalan have contributed equally to this work (the order of appearance of their names here is based on

alphabetic order). Sharanya Bashyam served as lead for data curation, formal analysis, investigation, visualization, and writing—original draft and contributed equally to conceptualization and methodology. Marc Colomer and Radhika Santhanagopalan served in a supporting role for data curation, formal analysis, and visualization and contributed equally to conceptualization, methodology, project administration, supervision, and writing—review and editing. Katherine D. Kinzler served in a supporting role for resources, supervision, writing—review and editing. Amanda Woodward served as lead for resources and served in a supporting role for supervision and writing—review and editing.

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in development, as early as in the first year of life (Kinzler et al., 2007). However, with the exception of a few studies (e.g., Kinzler et al., 2012; Santhanagopalan et al., 2021), most studies with children have focused on Western monolingual social contexts in which familiarity and status are typically aligned (i.e., a language is both familiar and high status). This raises questions about how language attitudes develop in more complex, multilingual environments, where children may need to attend to both the familiarity and status of a language, as well as the nuances and expectations of a social context, to inform their social choices.

The current study, conducted in the multilingual context of India, examined how language attitudes affect children's motivation to learn from others, and whether these linguistic preferences are dependent on the learning goal (i.e., the primary goal of learning) and the learning content (i.e., the content of the information being learned). Probing language attitudes from children in a diverse sample can help demarcate the boundaries of known language biases. Moreover, examining these questions in a pedagogical context can aid in facilitating a supportive learning environment.

Children's Language-Based Preferences

Developmental psychology research from Western (and largely monolingual) societies demonstrates that a preference for native language speakers emerges relatively early in development. Previous studies indicate that even infants begin to show preferences toward native language speakers (Byers-Heinlein et al., 2010; Moon et al., 1993). For example, Kinzler et al. (2007) found that 5-month-old infants preferentially looked at speakers of their native language over speakers of a foreign language or accent. Around their first year of life, infants selectively imitate actions of native language speakers (Buttelmann et al., 2013; Howard et al., 2015) and choose foods previously chosen by native language speakers (Shutts et al., 2009). Both monolingual and bilingual children continue to show a bias toward native language speakers and native-accented speakers throughout childhood (Kinzler et al., 2007; Souza et al., 2013), a preference that sometimes even trumps their preference for own-race peers (Kinzler et al., 2009). In addition, preschool-aged children make inferences about people based on how they speak, expecting native language speakers to live in similar houses and to be part of a familiar racial group (Hirschfeld & Gelman, 1997; Wagner et al., 2010). In summary, there is substantial evidence that as early as in the first years of life, children consider language a meaningful social cue and tend to prefer those who speak their native language (i.e., children demonstrate an ingroup bias).

Other research indicates that, with age, children begin to attend to status considerations, which may even trump their preference toward speakers who speak like them. For example, children from both the north and south of the United States reportedly prefer Northern English accent speakers, who are typically associated with higher status (Kinzler & DeJesus, 2013). This inchoate attention to status is particularly evident (and complex) in multilingual societies. For example, in Hawaii, older children from a lower socioeconomic school preferred standard English (similar to their peers in an urban school), over the more familiar Hawaiian Creole English (Day, 1980). In South Africa, native Xhosa-speaking children showed an ingroup bias when choosing Xhosa speakers versus speakers of an unfamiliar language (French), but this bias reversed when the less familiar language was associated with high status in

their environment (English; Kinzler et al., 2012). Finally, a study in India provided further evidence that 5- to 10-year-old children attend to both the familiarity and the status of a language to make social judgments, and use these two components differently depending on the kind of inference they are asked to make: among Tamil (local state language where the research was conducted), Hindi (lingua franca of India), Indian-accented English, and British-accented English speakers, Tamil speakers were chosen as more "Indian" and "kind," but British-accented English speakers were chosen as "better leaders" (Santhanagopalan et al., 2021). These findings provide initial insights into the interplay of familiarity and status in children's judgments. However, little is known about how these factors influence children's social choices in the highly consequential domain of pedagogy and learning. A better understanding of children's language-based pedagogical preferences may be worthwhile in understanding strategies that promote learning.

Language and Selective Social Learning

Social learning is a common medium by which children learn new information. However, not everyone is a good source of information in every context and sometimes there might be conflicting information. Identifying who is more likely to transmit accurate or culturally relevant information is an important skill that develops in the first years of life (Poulin-Dubois & Brosseau-Liard, 2016). For example, when provided with conflicting information, children prefer adults who previously demonstrated knowledgeability (Koenig & Harris, 2005; Sabbagh & Baldwin, 2001), reliability (Birch et al., 2008; Clément et al., 2004; Koenig & Harris, 2007), and those who appear confident (Birch et al., 2010; Matsui et al., 2006). In addition, children selectively attune to information that will be relevant in their local community (Henderson et al., 2013) and they use language as a cue to guide their selective learning. Preschoolers in monolingual environments prefer to learn and endorse information they learned from individuals who speak in their native accent or language (Howard et al., 2015; Kinzler et al., 2011). However, these studies have almost exclusively been examined in Western monolingual populations, leaving open questions surrounding children's selective learning in the face of competing languages, particularly those that vary along dimensions of status and familiarity.

India as a Diverse Multilingual Context

Most of the research described above has been conducted with monolingual speakers from Western populations. Despite their large representation in research, Western samples represent only 12% of the world's population (Henrich et al., 2010). Given that a large swathe of the world's children are raised in multilingual environments, interesting questions surround the kinds of language-based biases that might exist in cultures in which children know multiple languages, particularly where status and familiarity may interact in different ways. India is a diverse multilingual country with multiple languages (including English), used as mediums of instruction in schools (Israel, 2021; National Council of Educational Research and Training, 2009). English is perceived as high status in urban societies and is largely associated with middle and upper classes (LaDousa, 2005; Ramanathan, 2016). With the increasing importance of knowing English to function in the global economy, English is seen as a requisite to climb the social and economic ladder

(Ramanathan, 2016). Indeed, the decision to make English an official requirement to join the blue-collar and white-collar workforce has even led disadvantaged communities to demand access to the language for their children (Hornberger & Vaish, 2009).

Present Study

The present study explored the role of linguistic cues in children's pedagogical preferences in Hyderabad, the capital of the state of Telangana, India. As a multilingual region, Hyderabad provides a linguistically rich environment to explore how language influences children's choices about from whom they would like to learn. In particular, we focused on two languages that are relevant to children's education. Telugu, an official language of the state of Telangana (Krishnamurti, 1998), spoken by more than 85% of the population in the state (Naveen, 2017). We expected that Telugu would be a familiar language (i.e., spoken at home and/or in children's local environment) for most (if not all) children in the study. The other language was English, which is typically considered high status in the region and is the medium of instruction in the four schools from which we collected data. We included two types of English accents: a familiar accent (Indian-accented English [Indian-English]) and an unfamiliar accent (British-accented English [British-English]). Thus, in total children were presented with three language contrasts that varied along dimensions of familiarity and status, from the most familiar and lower in status (i.e., Telugu) to the less familiar and highest in the status (i.e., British-English) (see Santhanagopalan et al., 2021 for evidence that with age, children were more likely to associate British-English speakers with higher intelligence and leadership). For each language contrast, children were presented with a novel object alongside two speakers, and responded from whom they would prefer to learn.

As discussed earlier, language-based attitudes typically reflect both ingroup preferences and an awareness of status differences in society (e.g., Anisfeld et al., 1962; Dailey et al., 2005; Lambert et al., 1966). Emerging from childhood, these two components play a critical role in intergroup cognition more generally (Dunham et al., 2008). People typically associate speakers of a high-status language/accents as more intelligent and competent, and this holds true even when the high-status language is less familiar in a given listener's environment. However, ingroup preferences guide people's evaluations in other dimensions such as kindness and warmth, with people rating lower-status linguistic groups more favorably the more familiar these groups are in the listener's environment (Kinzler, 2021). Similarly, in the current study, we expected that both the status and familiarity of a language would guide children's preferences in a pedagogical setting, but that status considerations would have relatively more weight as children seek competent teachers. We hypothesized that children would generally prefer English speakers over Telugu speakers, a preference that would increase with age. Based on a pilot study we ran with adults in India ($N = 115$; see Section S2 in the online supplemental materials), we also hypothesized that children would prefer Indian-English speakers over British-English speakers, as the former may provide a unique combination of relative familiarity and status that may be optimal for learning. Finally, we hypothesized that children's language-based pedagogical preferences would be more nuanced than what had been previously described in studies on developmental social psychology. Specifically, we expected language-based preferences to change as a

function of the context of learning and the children's linguistic experience at home.

To investigate these nuances, we explored whether children adapt their language-based preferences to the learning goal (performance goal vs. enjoyment goal) and the learning content (i.e., Science, Technology, Mathematics and Engineering [STEM] objects vs. a cultural objects) of the task. We hypothesized that children would prefer to learn from speakers considered higher status (English speakers) particularly when the learning scenario was more consequential (i.e., learning to get good grades [performance goal]), and when the learning content included STEM objects (i.e., learning how to use a machine). However, we expected that children would choose Telugu speakers relatively more often when the goal of learning was to have fun (i.e., enjoyment goal) and when the content to learn was related to cultural traditions (i.e., learning how to play a musical instrument). Furthermore, we expected a tension between preferring to learn from high-status speakers and preferring to learn from ingroup speakers. Despite the fact that status considerations may be particularly relevant in pedagogical settings, we expected an increase in children's choices for a particular linguistic group based on ingroup favoritism. For example, we expected that children exposed to Telugu at home would favor Telugu speakers more often than children exposed to languages other than Telugu at home.

Method

Participants

We tested 119 children between 4 and 8 years old from three schools in Hyderabad, India (58 boys and 61 girls; $M_{\text{age}} = 6.2$ years, $SD = 274$ days). An a priori power analysis assuming a medium effect size and at least 95% power, indicated that we needed 119 children to detect language-based preferences. Participants were recruited through mass emails sent out by school administrators. We chose the age floor of four because children at this age are beginning their formal education in India. We sent emails to parents of children up to 10 years of age but did not receive sign-ups from parents of 9–10-year-olds, thus capping the age ceiling at age 8. Previous studies on the development of language biases and effects of language exposure used participants from a similar age group (Fan et al., 2015; Santhanagopalan et al., 2021). All participants came from schools that used English as their medium of instruction. Demographic information was collected for 72% of participants, of whom 74% reported that their child had only one native language and 25% reported that their child had more than one native language. With respect to the specific language(s) spoken by children, 64% of parents reported Telugu as one of their child's native languages (among whom 71% reported Telugu as their child's only native language). As for English, 23% reported English as one of their child's native languages (less than 1% reported English as their child's only native language). The five other native languages reported in our sample were Hindi (19 children), Tamil (4 children), Malayalam (3 children), Bengali (2 children), and Punjabi (1 child). See Data in the online supplemental materials for more details on participants' language backgrounds. Fifty-seven percent of parents reported their income details. Out of this, 38% of the participants reported income less than Rs. 1,000,000 (approximately 12,000 USD), 38% of the participants reported income between Rs. 10,00,001 and 25,00,000 (approximately 12,000–30,000 USD) and 21% with income between Rs.

2,500,001 and 5,000,000 (approximately 30,000–60,000 USD). The remaining 2% of the participants came from families earning more than Rs. 7,500,000 (approximately 60,000 USD). In this cultural context, most participants can be construed as lower- to upper-middle class. Parents provided written consent and children provided verbal assent for their participation. This procedure was approved by the university's Institutional Review Board (IRB19-1629).

Materials

The auditory stimuli consisted of native speakers of Telugu, Indian English, and British English. With respect to the Telugu speakers, two different speakers recorded the sentences in Telugu. For the Indian-accented English speakers, one of the Telugu speakers was also a native Indian-accented English speaker and recorded the same sentences in English. Audio recordings of the other Indian-accented English speaker, along with the two British-accented speakers, were obtained from the authors of another study that tested children in a similar context (Santhanagopalan et al., 2021). Therefore, for each given language, two individuals provided their voices. A pilot study ($N = 42$ Indian adults) was conducted to evaluate how participants rated their "liking" of these speakers. We observed no significant differences in ratings among the speakers. Each audio clip consisted of a neutral sentence (e.g., "ice cream is a food that is very sweet"). The visual stimuli consisted of six pictures of South Asian women pooled from the internet. These six pictures were narrowed down from a set of 42 pictures, after adult participants on Amazon Mechanical Turk ($N = 40$) rated the age and attractiveness of the faces. No face in the final shortlist was rated as significantly different from another. Stimuli included pictures of unfamiliar foreign objects, described as either a machine or a musical instrument. Each object was given a novel name and description (see Figure 1).

Procedure

This study was conducted with an experimenter over Zoom. Lockdown measures due to the coronavirus pandemic meant that children were physically located in their homes during the course of the study. First, children were asked in which language they wanted to play the game: English (the medium of instruction of their school), Hindi (lingua franca spoken throughout India), or Telugu (official language of the state). The question was asked in English because children were recruited from an English-medium school and so this was the only language we knew they all shared. Interestingly, despite the fact that most participants were more fluent in languages other than English, all of them chose to pursue the study in English. Next, to familiarize children with our questions, they engaged in a warm-up exercise. Children provided us with examples of something that they learned to do well on a test and something that they learned for fun, asked in counterbalanced order (see Data in the online supplemental materials for the responses). The purpose of this exercise was to introduce participants the learning goal manipulation (i.e., performance goal vs. enjoyment goal). Next, to familiarize children with using "left" and "right" to indicate their choice over Zoom, children were asked which of two animals was blue with either "left" or "right." If they got it wrong, they were prompted again.

Next, all participants were presented with three language contrasts in a randomized order: (a) Telugu versus Indian-English, (b) Telugu versus British-English, and (c) Indian-English versus British-English. For each language contrast, children were sequentially presented

with a cultural object or a STEM object. On each trial, participants saw two faces, each paired with a speaker who spoke the same sentence in their respective language/accents (see Figure 2). Participants were asked two questions: Performance goal: "Imagine you're going to take a test on how to play this instrument/machine. Who would you learn from to get better marks?" and Enjoyment goal: "Imagine you want to learn how to play this instrument/machine to have a good time. Who would you want to learn from to have more fun?" Note that we referred to grades as "marks" in the performance goal question since it was more culturally appropriate.

For each question, children were given three response options: the speaker on the left, the speaker on the right, or both the same. We counterbalanced whether a given face was on the left or right, the order in which the stimuli were presented (i.e., whether the STEM object, or cultural object was presented first), the order of the questions asked (i.e., whether learning for grades or learning for fun was asked first), and the face-language pairings (e.g., on a given trial, Face A is paired with Voice A for half of the participants and Face A is paired with Voice B for the other half of participants) across participants. In addition, we randomized the order in which the language contrasts (Indian English vs. British English, Indian English vs. Telugu, and British English vs. Telugu) were presented to the participants.

Transparency and Openness

The data and the R code used in this study can be accessed at https://osf.io/bvemw/?view_only=4a0f6687138349f6a9af945fa3252f36.

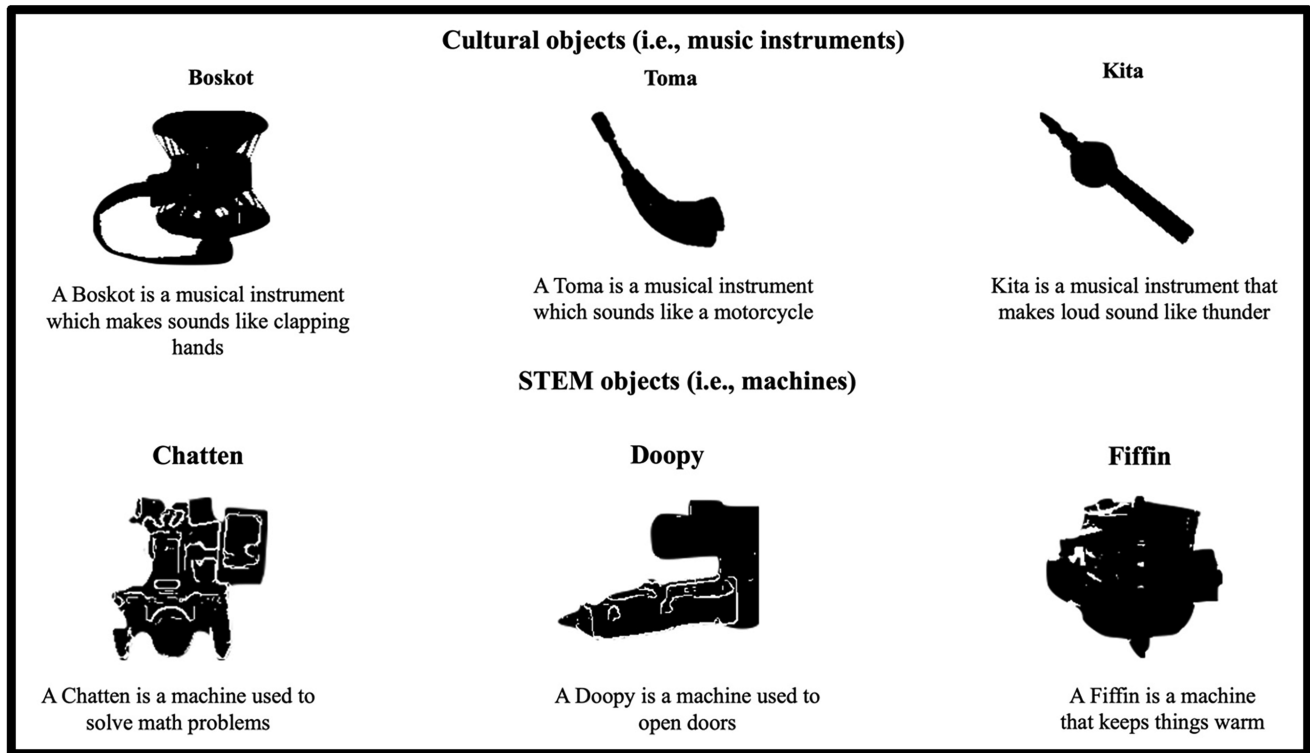
Results

Analysis Plan

First, we calculated the percentage of times participants chose Indian-English, British-English, and Telugu across all contrasts, comparing these using binomial exact tests and chi-square goodness of fit tests. Next, for our main dependent measure, we calculated the mean score for each participant based on their preferences across trials. We constructed an analysis of variance (ANOVA) to assess the role of the learning goal (i.e., performance goal vs. enjoyment goal) and learning content (learning about STEM objects vs. cultural objects) on children's speaker preferences. Finally, we examined the role of children's native language and children's age on their language-based preferences. We took a stepwise approach with the analysis for two reasons. First, our primary question of interest was how the learning goal and learning content would affect children's language-based preferences. Our secondary interest was how certain demographic variables (i.e., age and language background) influenced children's choices. In addition, given that not all participants provided demographic information, we first tested our model with the whole sample to investigate the effects of learning goal and learning content, and then examined demographic effects with the subgroup of participants who provided demographic information.

Overall Pattern

Across all the trials (excluding the choice of "both the same"), children chose the Indian-English speaker 43% of the time, the British-English speaker 38% of the time, and the Telugu speaker 19% of the time. Binomial exact tests indicated that children

Figure 1*Learning Content Manipulation: Three Cultural Objects and Three STEM Objects and Their Description*

Note. Visuals depicted as silhouettes for publication. Participants saw images in color. STEM = Science, Technology, Mathematics and Engineering.

preferred both British-English speakers and Indian-English speakers over Telugu speakers, binomial exacts, $ps < .001$. However, children did not show a preference between the British-English and Indian-English speakers, binomial exact, $p = .31$. Indeed, children chose “both the same” significantly more in the British-English versus Indian-English contrast than any other contrast, $\chi^2(2, 405) = 84.19$, $p < .001$, providing further evidence that children’s social preferences were not influenced by which English accent was used. Thus, the two accents were collapsed into a single “English” category for the remaining analyses (Figure 3).

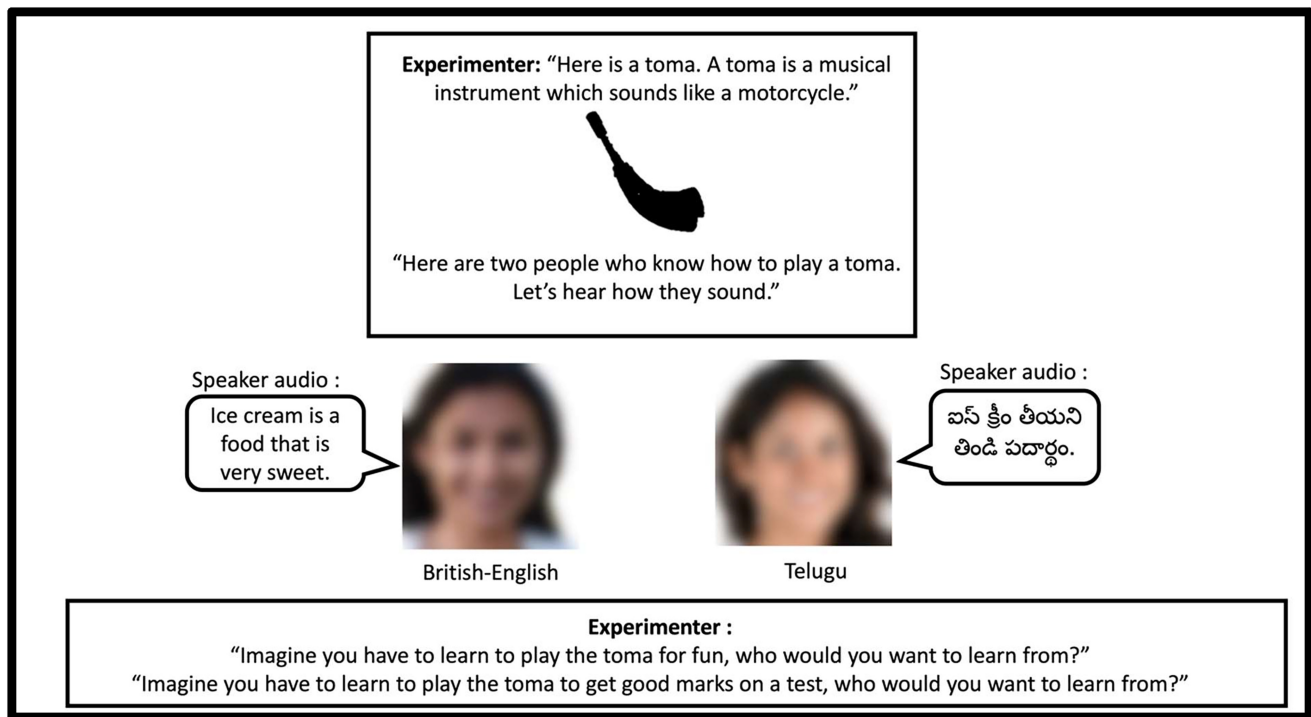
Learning Goal and Learning Content

Chi-square goodness of fit tests revealed that children showed an overwhelming English bias, $ps < .001$. To further analyze the effect of learning goal and learning content, we recoded children’s responses to calculate children’s preference for English relative to Telugu. The codes were as follows: 1 for *English*, 0 for *Telugu*, and 0.5 for *both the same*. The responses were then averaged across trials so that each participant would have a single score, with a higher score indicating a stronger preference for English (hereafter referred to as an “English Preference Score”). This represented the main dependent measure. A repeated measures ANOVA with learning goal and learning content as within-subjects factors, and English Preference Score as the dependent variable, revealed a significant effect of learning goal, $F(1, 118) = 23.67$, $p < .001$, $\eta_p^2 = .16$. Although children preferred English for both types of goals ($ps < .001$; one-sample

t test), an English bias was more pronounced for performance goals. The model also revealed a main effect of learning content, $F(1, 118) = 5.63$, $p = .02$, $\eta_p^2 = .04$. Once again, although children preferred English for both types of objects ($ps < .001$; one-sample t test), an English bias was more pronounced for STEM objects. To confirm that there were no accent-level differences and to further validate our collapsing of the two accents, we also ran a similar analysis of variance for the British-English versus Indian-English contrast and found no significant effects of learning goal nor learning content (all $ps > .1$; Figure 4).

Participants’ Native Language

Among the 86 participants who reported their native language, 64% of children spoke Telugu as (one of) their native language (“Telugu at home”) and 36% spoke another native language(s) that did not include Telugu (“no Telugu at home”). Similar to previous analyses, we recoded children’s responses and conducted a repeated measures ANOVA with learning goal, learning content and participant native language as within-subjects factors, and English Preference Score as the dependent variable. We found a significant effect of native language $F(1, 84) = 29.49$, $p < .001$, $\eta_p^2 = .26$. “Telugu at home” participants showed a less pronounced English bias than their “no Telugu at home” counterparts. In an additional exploratory analysis, we also investigated children’s responses within the Indian-English versus British-English contrast as a function of whether children were exposed to English at

Figure 2*Sample Trial Denoting a Cultural Object in the British English Versus Telugu Trial*

Note. Visuals blurred for publication; visuals were not blurred when presented to the participants. See the online article for the color version of this figure.

home ($N = 20$) or not ($N = 71$). Only children who were exposed to English at home showed a preference for Indian-English over British-English speakers (see [Section S1 in the online supplemental materials](#); [Figure 5](#)).

Participant Age

To explore the effect of age on participants' responses, we constructed a generalized mixed-effects linear model and found a significant effect of age, $\beta = .02$, $SE = 0.01$, $p = .037$, indicating that

children were more likely to choose the English speaker with age, as seen in [Figure 6](#).

Discussion

This study examined language-based pedagogical preferences in 4- to 8-year-old children in India, a diverse multilingual society. The current study elicited children's preference to learn from speakers of different languages, exploring additional nuances by manipulating the learning goal (i.e., performance-related vs. enjoyment-

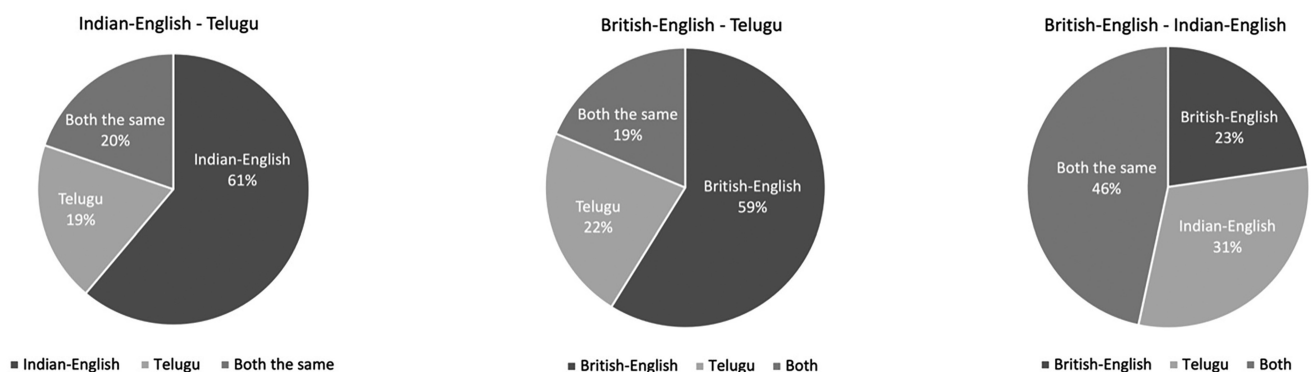
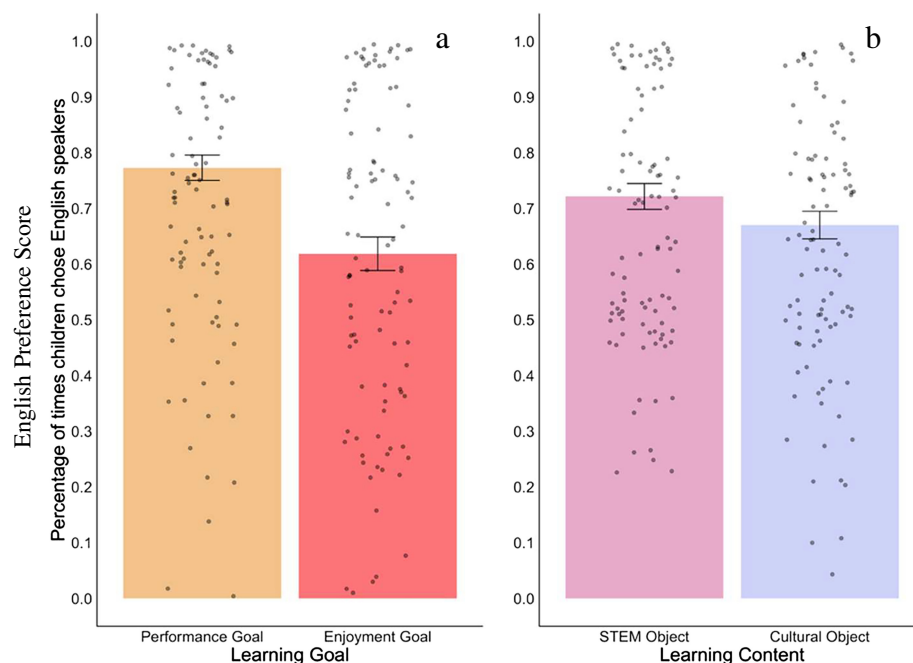
Figure 3*Percentage of Times Participants Chose Each Language in Each Language Contrast*

Figure 4

Children's Language-Based Pedagogical Preferences as a Function of Learning Goal (a) and Learning Content (b)



Note. Children preferred English speakers over Telugu speakers, especially for performance goals and for STEM objects. STEM = Science, Technology, Mathematics and Engineering. See the online article for the color version of this figure.

related goal), and the learning content (i.e., STEM object vs. cultural object). Children generally preferred to be taught by English speakers (high-status language) compared to Telugu speakers (local language), a preference that increased with age and was found both for speakers of a familiar English accent (Indian English) and an unfamiliar English accent (British English). The preference for English speakers was especially pronounced when the learning goal was performance—compared to enjoyment—and when the learning content was about STEM-related objects compared to culture-specific objects. Additionally, participants with Telugu as a native language chose Telugu speakers more often than children not exposed to Telugu at home, suggesting that group membership may play a role in buffering status considerations. Together, the findings suggest that children attend to the language others speak in making judgments about from whom to learn in different pedagogical situations, and they flexibly adapt their responses depending on specific aspects of the learning environment, such as the learning goal and learning content.

A long tradition of research on psycholinguistics demonstrates that people infer information about others based on how they speak (Giles & Watson, 2013). These social evaluations are typically based on two dimensions: ingroup bias (preferring people who speak their own language/accents), and high-status bias (preferring people who speak a language/accents associated with higher status in society). Previous studies in western societies have found that an ingroup bias emerges early in childhood, with children for example preferring to affiliate and learn from individuals who speak their native language and accent (Kinzler et al., 2007, 2011). Studies in

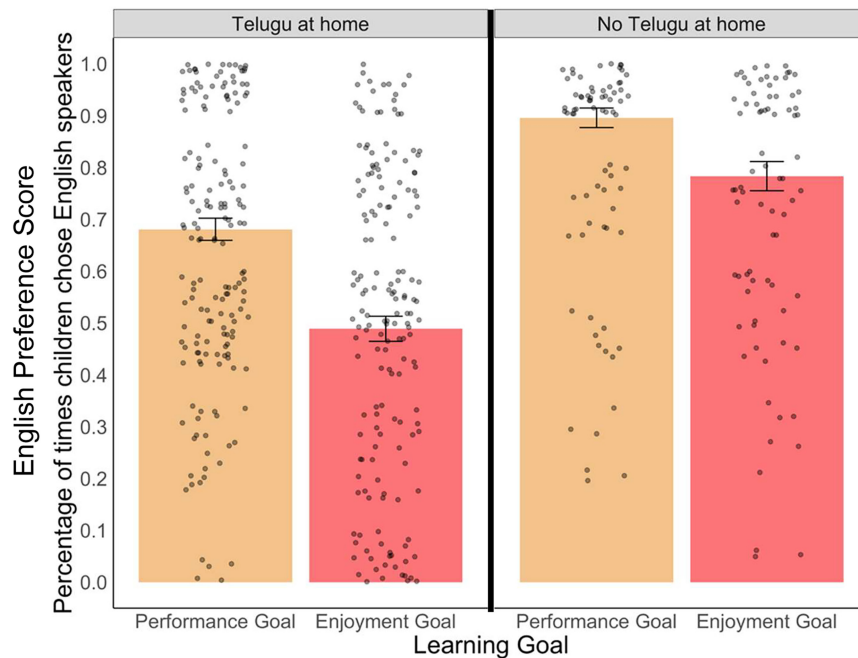
multilingual, nonwestern societies have demonstrated that when the nonnative language is associated with higher status due to the historical and present-day sociopolitical context (e.g., English in South Africa), children's social preferences reverse in favor of higher-status speakers (Kinzler et al., 2012). However, children's language-based attitudes may not be based exclusively on either an ingroup bias or a high-status bias, rather, both factors may compete in guiding children's choices (Santhanagopalan et al., 2021). The current findings support the latter interpretation by showing distinct ways in which status and familiarity influence children's language-based preferences in a pedagogical setting.

For example, children chose English speakers over Telugu speakers even when presented with an unfamiliar accent (British English), indicating considerations of status over considerations of familiarity. Even in the enjoyment goal trials (i.e., learning for fun), children exposed to Telugu at home did not prefer Telugu speakers over English speakers. Importantly, during the warm-up task, most children associated learning for fun with learning activities they did outside of the school (e.g., playing sports, doing arts and crafts, playing games, etc.), which most likely involved people from their local community who often speak Telugu. Thus, familiarity alone is unlikely to account for children's social preferences in this study.

However, a tendency to prefer speakers of a more familiar language may have also played a role in guiding children's choices. For example, children exposed to Telugu at home chose Telugu speakers more often than children who were not exposed to Telugu at home. Similarly, an exploratory analysis indicated that a small group of children exposed to English at home preferred

Figure 5

The Role of Learning Goal and Learning Content: Children Who Used Telugu at Home and Children Who Did Not Use Telugu at Home



Note. See the online article for the color version of this figure.

Indian-English speakers over British-English speakers, a preference that was not found for those participants who were exposed to English only through the school and TV. These results are in line with classic research on psycholinguistics with adolescents, which found that they tend to rate language/accents associated with high status more favorably, but this preference decreases if the lower-status linguistic group is highly familiar (Dailey et al., 2005). Ingroup biases seem to influence inferences about kindness more than inferences about competence, associating high-status groups

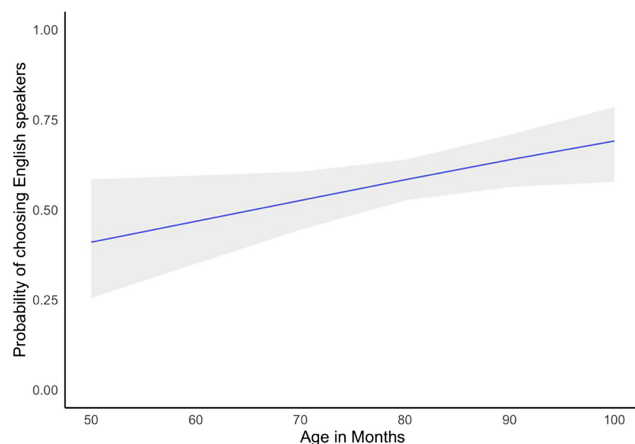
with higher competence but their own linguistic group with more kindness (Lambert et al., 1960, 1966). This dissociation could explain, in part, why children chose Telugu speakers more often in the enjoyment goal trials as compared to performance goal trials.

Children in general selected British-English speakers and Indian-English speakers at similar rates. One possibility is that children did not distinguish between the two accents in the online format of the study, but this interpretation is unlikely. First, recent studies show that elementary school children are able to differentiate between language patterns and accents via online modalities (Oppenheimer et al., 2022). Second, the results of the participants who were exposed to English at home suggest that children were able to differentiate between the two accents (see Section S1 in the online supplemental materials). Finally, in a previous study using the same English audio stimuli played on a computer, the authors found accent-based differences on children's inferences about others' traits (Santhanagopalan et al., 2021). For example, 5- to 10-year-olds selected Indian-English speakers as more kind, but less good leaders compared to British-English speakers. Thus, children in our study likely discriminated between the two accents, but perceived both British-English and Indian-English speakers as equally optimal teachers.

But why did children, overall, prefer to learn from English speakers over Telugu speakers? Schooling could be an important factor influencing children's preferences for English speakers, as the participants in the current study attended English-medium schools. Children may associate English with academic learning, perceive their English-speaking teachers as intelligent and good informants, and generalize their judgments to English speakers more broadly.

Figure 6

Children's Preference to Learn From English Speakers



Note. See the online article for the color version of this figure.

Moreover, peers and teachers may reinforce stereotypical messaging regarding English as a higher status and valuable language (Meganathan, 2011; Vaish, 2008), with children eventually reflecting these stereotypical beliefs themselves. An alternative, nonmutually exclusive mechanism, would be that stereotypes are transmitted outside of the school environment. Children may be sensitive to structural differences in their environment, which may be reinforced through stereotypical messaging from the media and their social network. That is, children's selective trust toward higher-status speakers in India (i.e., English speakers) may develop independently of the language they speak in school. In support of this view, previous studies have found that both children attending English-medium schools and Tamil-medium institutions in India develop similar language-based social attitudes (Santhanagopalan et al., 2021).

To better understand the role of schooling with English as a medium of instruction in shaping children's language-based social preferences, future studies could focus on schools in India that chose to teach in the local language of the state rather than in English. In fact, policies in India, including the "Three Language Formula," and the recent revision of the National Education Policy published in 2020, recommend the use of children's native/local language to teach academic content, at least in primary school. However, there has been heterogeneity in schools' response to these policies, with some schools continuing to use an all-English strategy and others switching to using the local language for teaching (Karthik & Noblit, 2020). This diversity across institutions provides an opportunity for future studies to assess how the language children in India use in the school changes their language-based social judgments.

Another important factor explaining the English bias could be the context in which the study was conducted and the use of English during testing. A unique characteristic of the study design was that the experimenter explained she could speak English, Telugu, and Hindi and asked children to choose a language to speak during the study. Surprisingly, all children consistently chose to continue the study in English. Although the initial question was asked in English, it is unlikely that such a priming effect would prevent children who were more fluent in Telugu or Hindi (i.e., most children in the sample) to switch to these languages. Instead, children may have chosen to speak English because they already learned in just a few years (or less) of formal education that English is associated with formal settings, and getting into an online call with a stranger resembles the format they used during the lockdown restrictions of the COVID-19 pandemic. However, the expectation of speaking English may not be the same for other frequent settings, such as when talking to a stranger in the street, or in a store. Further, it is an open question what language children would choose to converse in a less formal context (e.g., playing in the neighborhood).

Another significant finding of the current study is that children's language-based preferences were flexible, depending on contextual information such as the learning goal (performance vs. enjoyment) and learning content (STEM-objects vs. culture-specific objects). Children chose English speakers more often when learning had a functional goal (i.e., learning to get good marks on a test) and when they were required to learn about STEM objects. However, the effect of learning content was not as robust as the effect of learning goal. One explanation is that two competing mechanisms influenced children's responses in relation to the learning content. On the one hand, children may associate learning culture-specific knowledge (i.e., musical instruments) with speakers of the local language

in their community (i.e., Telugu). On the other hand, children may associate unfamiliar culture-specific objects with speakers of a less familiar language (i.e., English), given that language can be used to define the boundaries of shared cultural knowledge (Soley & Aldan, 2020; Soley & Köseleler, 2021). The results of the pilot study with adults (see Section S2 in the online supplemental materials) challenge the latter type of reasoning in the linguistic context of the current study. Adults chose Telugu speakers significantly more often when presented with unfamiliar cultural objects rather than unfamiliar STEM objects. This pattern, the same as for children but stronger, is more consistent with the association between local language and culture-specific learning and suggests that children may still be learning about this association.

In conclusion, the current study aimed to provide new insights into the development of language-based biases in multilingual environments, in this case focusing on social judgments about who may be a better teacher. The findings indicate that even in a diverse multilingual environment, children show an English speaker bias in deciding from whom to learn. Importantly, children's preferences are flexible and strategic by as early as 4 years of age; children's preferences are modulated by contextual cues (in this case, the kind of learning that the situation demanded) as well as social cues conveyed via speech (i.e., group status and familiarity). Understanding how these cues affect children's pedagogical choices can help to find answers to questions such as what language should be used for instruction in multilingual contexts and what consequences these choices may have in the development of social attitudes toward speakers of different languages. The current study highlights the importance of investigating diverse multilingual contexts to uncover the nuances and complexities in children's social preferences. We hope these findings provide a new basis for future studies to further investigate how the context in which children are raised influences the development of their language-based preferences.

Constraints on Generality

Our findings are consistent with previous studies on psycholinguistics and developmental psychology that show that children and adults infer social meaning from language, and use status and familiarity considerations to decide how to evaluate and respond to others (Dailey et al., 2005; Kinzler et al., 2012; Lambert et al., 1966; Santhanagopalan et al., 2021). We demonstrate these effects in a multilingual context and in the consequential domain of pedagogy. Given that these effects have been observed for a diverse range of children in diverse countries (e.g., South Africa, the United States, Canada, and India), we expect our result to generalize to other linguistically rich environments. However, participants in the current study were all from an urban area and attended an English-medium school. It is an open question whether these results would extend to rural areas and those that use their local language as a medium of instruction. It is also an open question how the current results would generalize to real-world learning scenarios, and how the results would generalize to less formal learning contexts (e.g., learning from a peer vs. a teacher).

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