Brief Report

Where are you from? Preschoolers infer background from accent

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Abstract

For adults, accent is an obvious indicator of a speaker’s geographical background. The current study investigated whether preschoolers are sensitive to the relationship between background and accent. Experiment 1 shows that 3- to 5-year-olds believe that two speakers who share the same accent live in the same place but do not share the same personal preferences. Experiment 2 demonstrates that 4- and 5-year-olds believe that two speakers with the same accent share cultural norms associated with a particular place, but that two speakers with different accents have different cultural norms. As in Experiment 1, children did not think that personal preferences were related to accent. These findings show early awareness of the relationship between accent and geographical background.

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Introduction

Accent is a strong indicator of a person’s background. When we encounter an accented speaker, we easily deduce that the speaker is from a different place, and we often make assumptions about where specifically the speaker is from (Clopper & Pisoni, 2004; Van Bezooijen & Gooskens, 1999). In addition to geographical background, adults readily make inferences about a speaker’s social status on the basis of accent (Giles & Billings, 2004; Labov, 2006). For example, Americans rate British English speakers as having higher socioeconomic status than American English speakers (Stewart, Ryan, & Giles, 1985).

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Overall, adults are very sensitive to the relationship between a speaker’s accent and his or her personal background. Children are also sensitive to accent and use it as an indicator of social information in some contexts. For example, 5-year-olds prefer to be friends with a child who speaks the same language with the same accent over someone who speaks an unfamiliar language or has an unfamiliar accent. In fact, in their preferences, children weigh accent even more than other salient cues to group membership such as race (Kinzel, Shutts, DeJesus, & Speake, 2009).

However, little is known about when children become aware of the relationship between accent and background. Kinzler and DeJesus (2013a) found that when asked which of two speakers was American or “lives around here,” 5- and 6-year-olds chose a speaker who shared their native accent over a foreign-accented speaker. This suggests that children of this age may grasp that people who share their own accent are members of their in-group. However, this does not indicate whether children have a more general understanding of the connections between accent and background independent of a self-comparison (e.g., is this accent familiar/like mine or unfamiliar/different from mine?). For instance, it is not clear whether children understand more generally that people who share the same accent share the same background and that those with different accents come from different backgrounds.

Other work shows that from the age of 6 years, children have some understanding of the relations between the language a person speaks and that person's nationality or culture (Kuczaj, 1982). For instance, 6-year-olds cite language differences as being caused by nationality differences and shared language as being caused by shared nationality (Jahoda, 1961; Piaget & Weil, 1951). These studies relied on children's knowledge of countries and nationality. However, other studies show that even preschoolers make some language-based inferences about background. For example, they infer that individuals who speak a foreign language are from a different racial group, wear unfamiliar garb, and live in novel-looking houses (Hirschfeld & Gelman, 1997). But, as in the studies of accents above, younger children's behavior may simply reflect the use of a familiar/unfamiliar distinction (e.g., people who sound different from me live somewhere that looks different).

In the current study, we explored preschoolers' awareness of the association between accent and background. Determining the origins of this association is crucial for understanding the development of other accent-based inferences and, more broadly, how children learn about people in the world around them. Considerable research has examined how preschoolers infer non-obvious properties and relations about people, including people's mental states, ownership relations, and membership in social groups (e.g., Gelman, 2003). A person's geographical background is also non-obvious; we cannot infer that a person lives in, or originates from, the place where we happen to observe them. However, accent is a powerful, externally available cue that serves as an indicator of this non-obvious background.

The current approach

If preschoolers view accent as indicative of a speaker's background, then they should infer that two speakers with the same accent are from the same place (Experiments 1 and 2) and that two speakers with different accents are from different places (Experiment 2). However, personal preferences should not necessarily be generalized across speakers with the same accent given that they are not as intrinsically linked to language-based social categories. Previous work shows that children do not use information about a person's social category to make inferences about his or her personal preferences (e.g., Kalish & Lawson, 2008).

To convey background information, we taught children a property about the place one speaker was from. We then asked whether a second speaker was also from a place with this property. We used this approach rather than referring to speakers' countries or cities of origin because previous research suggests that it is not until the age of 6 years that children begin to map language differences onto national or cultural differences (Barrett, 2007). In fact, preschoolers do not have a sense of their country as a geographical entity (Downs, Liben, & Daggs, 1988). A measure that does not rely on children's knowledge of specific places may reveal earlier sensitivities to the link between background and accent.
Experiment 1

Method

Participants
We tested 108 children: 36 3-year-olds (mean = 3;7 [years;months], range = 3;1–3;11; 21 female), 36 4-year-olds (mean = 4;5, range = 4;0–4;11; 17 female), and 36 5-year-olds (mean = 5;6, range = 5;0–5;11; 15 female). An additional two 3-year-olds were tested but excluded because they failed to correctly answer comprehension questions. Children in both experiments were tested in day-care facilities and schools in the Waterloo region of Ontario, Canada. For all participants, English was the primary language spoken at home.

Materials
Audio stimuli consisted of four audio recordings produced by four different foreign-accented speakers: two females and two males. The recordings were of neutral everyday sentences (e.g., “She told me that she was going to be there very soon”) either recorded in the lab (the female speakers) or taken from the Speech Accent Archive (the male speakers) (Weinberger, 2015). Both females had the same foreign accent (Spanish), as did both male speakers (Turkish). Visual stimuli were pictures of four people (two females and two males) and 12 other pictures, each with a single item or exemplar; of these 12 pictures, three showed landscapes from different climates (e.g., a snowy scene), three showed novel types of houses (e.g., a mud hut), three showed color samples (e.g., a yellow rectangle), and three showed board games (e.g., Backgammon). The audio and visual stimuli were combined in Microsoft PowerPoint and displayed on a 13-inch laptop computer.

Procedure
Each child completed two test trials in one of two conditions: Background or Preference. Children were randomly assigned to a condition. In each trial, children were introduced to pictures of two same-gendered speakers who shared the same unfamiliar accent (female speakers in Trial 1 and male speakers in Trial 2). Children first listened to an audio clip of each speaker saying a sentence. They were then asked three questions to ensure that they recognized that the speaker spoke English with an accent different from their own (“Do those two girls talk English?” and “Do they talk English like we do?”) and that the two speakers shared the same accent (“Do they talk English like each other?”). If children answered incorrectly, the two speakers’ audio clips were played again and the question was asked again. If children still struggled, they were explicitly told the answer and then asked again. The experimenter proceeded only once children had correctly answered all three questions. This questioning procedure was also used in Experiment 2.

In the Background condition, children were then told information about where one speaker lived (information about climate in Trial 1 and information about houses in Trial 2). A picture appeared under the speaker’s face to help convey this information. The other speaker was then reintroduced, and three pictures of locations appeared under that speaker’s face; one picture was the same as the picture under the first speaker’s face, and the other two pictures showed different locations. Children were asked where the second speaker lived and responded by indicating one of the three pictures (see Fig. 1). The procedure was the same for children in the Preference condition except that they were told about one speaker’s preferences (favorite color in Trial 1 and favorite game in Trial 2) and then were asked about the second speaker’s preferences.

Children in both conditions were tested in one of three counterbalancing groups that differed in which of the three pictures was paired with the first speaker. For instance, in the first background trial, the first speaker was paired with either a picture of a desert scene, a snowy scene, or a scene with lush vegetation. As a result, the specific background information taught varied across the counterbalancing groups.

1 This almost exclusively occurred with the 3-year-old participants. Their most common error was in answering the question “Do they talk English like we do”. 

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Results and discussion

If children believe that accent is associated with an individual’s background, then children in the Background condition should choose the matching picture for the second speaker at an above-chance rate (33%). We did not anticipate children choosing the matching picture as often in the Preference condition, because speakers who share an accent do not necessarily share the same personal preferences.

Children received a score of 1 each time they selected the matching picture and a score of 0 each time they chose a different picture. With two trials, children could have a total score of 2, 1, or 0. Preliminary analyses revealed no effects of age in either the Background or Preference condition (Kruskal–Wallis tests, \( p > .753 \)). Therefore, we collapsed by age and examined whether responses varied by condition. Children were more likely to choose the matching picture in the Background condition (50%) than in the Preference condition (23%) (Mann–Whitney \( U, z = 3.67, p < .001 \)) (see Fig. 2A). In addition, children in the Background condition chose the matching pictures at a rate higher than the chance rate of 33% (single-sample Wilcoxon signed ranks test, \( z = 2.22, p = .026 \)). Conversely, children in the Preference condition chose the matching pictures at a below-chance rate (Wilcoxon, \( z = 2.86, p = .004 \)).

These results suggest that children believe that accent is relevant to a person’s personal background and infer that two people who have the same accent live in the same place. In addition, children appear to infer that speakers with the same accent are unlikely to share the same personal preferences.
However, one concern is that we examined children’s judgments only for speakers who shared a common accent. This design leaves open the possibility that children did not base their inferences on shared accent and would have responded identically even if we had asked about pairs of speakers with different accents. To rule out this concern, we conducted a second experiment that included conditions in which the speakers had different accents from one another. Because the first experiment did not reveal any effects of age, we treated 4- and 5-year-olds as a single age group in the second experiment.

In addition, to better match the content of trials across the Background and Preference conditions, we used the same pictures in both conditions. For instance, children were shown a picture of a novel food and were told that where the speaker lives people eat that food (Background condition) or that it is the speaker’s favorite food (Preference condition). This version of the Background condition uses generic information to convey a cultural norm about where the speaker lives. We chose to use generic language because it facilitates the generalization of information across members of a social category (Rhodes, Leslie, & Tworek, 2012). For example, after hearing a statement such as “Daxos are red” (generic statement), children are more willing to assert that other daxos are red than if they heard “This daxo is red” (specific statement).

**Experiment 2**

**Method**

**Participants**

We tested 72 4- and 5-year-olds (mean = 5;2; range = 4;1–5;11; 39 female).

**Materials**

The materials were very similar to those in Experiment 1, with a few exceptions. Audio stimuli were the four recordings from Experiment 1 with two additional recordings of neutral sentences done in the lab. The two new speakers, one female and one male, had different accents from the speakers in Experiment 1 (South African accent and Mandarin accent, respectively). Visual stimuli were the same four pictures of people from Experiment 1, three pictures of novel-looking foods, and three pictures of novel-looking games. Audio and visual stimuli were combined in PowerPoint and displayed on a 13-inch laptop computer.

**Procedure**

Children were randomly assigned to one of four conditions created by crossing the factors accent (i.e., whether speakers spoke with the same accent or with different accents) and information type (i.e., whether children were told and asked about speakers’ backgrounds or personal preferences). Each child completed two test trials.

Besides the addition of conditions where the speakers had different accents, the procedure was virtually identical to that in Experiment 1. In each trial, children first heard each speaker say a neutral everyday sentence and answered three comprehension questions. Children were then taught about one speaker’s background or personal preference; in contrast to Experiment 1, the same pictures were used to convey this information in all conditions. In the Background conditions, children were told about the cultural practices of the people in the speaker’s place of residency using generic sentences. In Trial 1 they were told about what people eat (e.g., “Where she lives people eat verulia. They eat verulia all the time”), and in Trial 2 they were told about what games people play. The other speaker was then reintroduced, and children were asked what food people eat (e.g., “Where she lives, what do people eat?”) or what games people play where that speaker lives; children responded by choosing among three pictures. The procedure was the same in the Preference conditions except that children were told about the first speaker’s personal preferences (e.g., “Her favorite food is verulia. She really likes to eat verulia!”) and were then asked about the second speaker’s preferences (“What is her favorite food?”).
Results and discussion

If children think that accent is an indicator of an individual's personal background, they should infer that two people who have the same accent live in the same place and, therefore, eat foods and play games characteristic of that location. In contrast, they should infer that two speakers with different accents live in different places and, therefore, eat different foods and play different games. Experiment 1 suggests that children might not view accents as being indicative of personal preferences.

For each trial, children were given a score of 1 each time they selected the matching picture and a score of 0 each time they selected the other picture, for a total score of 2, 1, or 0. We used a generalized linear model (ordinal logistic) to test whether scores were influenced by accent (same or different), condition (Background or Preference), or their interaction. This analysis revealed that scores were predicted by accent (same > different, Wald $\chi^2 = 5.78$, $df = 1$, $p = .016$) and by the interaction between accent and condition (Wald $\chi^2 = 6.97$, $df = 1$, $p = .008$) but not by condition (Wald $\chi^2 = 2.62$, $df = 1$, $p = .105$) (see Fig. 2B). Children in the Background conditions chose the matching pictures more when speakers had the same accent (67%) than when they had different accents (17%) (Mann–Whitney $U = 57.00$, $z = 3.56$, $p < .001$). When these children heard speakers with the same accent, they chose matching pictures at a rate greater than the chance rate of 33% (Wilcoxon, $z = 2.73$, $p = .006$); when they heard speakers with different accents, they chose matching pictures at a below-chance rate (Wilcoxon, $z = 2.62$, $p = .009$). In contrast, children in the Preference conditions chose the matching pictures equally regardless of the speakers' accents (25% for both groups) ($p = .867$). They chose the matching pictures at chance rates both when speakers had the same accent and when they had different accents ($p_s \geq .11$).

These results reinforce the findings from Experiment 1 that children link a speaker's accent to their personal background. Children infer that speakers with the same accent are from the same place and that speakers who have different accents are from different places. In contrast, children do not use accent to infer personal preferences; they do not infer that two speakers share the same preferences regardless of accent similarity.

General discussion

In two experiments, we demonstrated that preschoolers have an understanding of the relationship between accent and a speaker's geographical background. In Experiment 1, 3- to 5-year-olds judged that two speakers who share the same accent live in the same place, or at least the same sort of place; children generalized specific information about a speaker's geographical background to a second speaker with the same accent. In Experiment 2, 4- and 5-year-olds judged that two speakers who have the same accents share cultural norms associated with a particular place. In contrast, children inferred that two speakers with different accents have different cultural norms. One particularly interesting finding was that children in Experiment 2 inferred that speakers with different accents shared a common background at a rate that was lower than expected by chance; they expected the speakers to have different backgrounds. The contrast between children's inferences about speakers with shared and different accents demonstrates that children link accents and backgrounds.

In addition, we showed that children's inferences about accent do not extend to personal preferences. Children who were taught about the first speaker's personal preference indicated that the second speaker had the same preference at rates lower than chance (Experiment 1) or at chance rates (Experiment 2). This difference across experiments may be attributable to the items used; in Experiment 1 the items used were highly familiar, and thus children may have had experience with those preferences differing across individuals, whereas in Experiment 2 novel food and games were used. Regardless, the experiments were consistent in demonstrating that children do not find accent to be relevant to a speaker's personal preferences. At the same time, Experiment 2 suggests that children do link accent to cultural preferences or norms. The contrast between cultural and personal preferences suggests that children link group-level properties, but not individual-level properties, to accent, although we did not explicitly explore this possibility.
How is accent tied to geographical background? Our findings are consistent with two explanations. One possibility is that the relationship between accent and geographical background is mediated by group membership. Under this explanation, children assume that two speakers with the same accent belong to the same group and that members of the same group are from the same place. Children reliably make assumptions about a number of physical, psychological, and behavioral characteristics on the basis of an individual's group membership (Diesendruck & HaLevi, 2006; Gelman, Collman, & Maccoby, 1986). In addition, recall that Experiment 2 used generic language, which promotes the generalization of information across group members (Rhodes et al., 2012). Consistent with this are evolutionary claims that language and dialect differences, historically salient across short distances, would have served as an effective predictor of group membership (Baker, 2001; Kinzler, Shutts, & Correll, 2010).

A second possibility is that accent and geographical background are directly linked. Under this view, children infer that two speakers with the same accent are from the same place without invoking any intermediate factors. It is plausible that adults make such direct inferences given the automaticity of their inferences about nationality, and place of origin, on the basis of accent (Clopper & Pisoni, 2004; Van Bezooijen & Gooskens, 1999). It remains to be seen whether children's beliefs about accent and geographical location are directly linked or are mediated by group membership.

How do children come to form the link between accent and background? It is unlikely that children in the current study based their responses on previously learned associations linking particular accents with particular geographic regions or properties; multiple accents were used, and the background information tied to them was fictional. However, a more plausible possibility is that children have learned a general rule or overhypothesis (Shipley, 1993) that particular accents originate from particular places (although, related to the discussion above, it could be two overhypotheses, namely that accents go with particular groups and groups have particular backgrounds). Such a rule could be formed from hearing accented speakers and learning that they are from different places than oneself (e.g., “She is from China”) or are associated with different groups (e.g., “She is Chinese”) or possibly even from hearing statements that directly links an accent to a place (e.g., “She has a Chinese accent”).

Our findings are also important because children's inferences from accent to background may be the foundation on which other accent-based inferences are formed. As children gain more knowledge about geographical or location-based stereotypes, they may begin to form associations between this knowledge and the accents associated with those locations. Children as young as 5 years hold some basic stereotypes about groups of people based on nationality, despite their overall poor knowledge of nationality (Barrett & Short, 1992), and these stereotypes become stronger throughout childhood (Barrett, Wilson, & Lyons, 2003). However, the link between accent and these stereotypes does not become apparent until around the age of 9 years (Kinzler & DeJesus, 2013b). This trajectory, in combination with the findings observed here, suggests that such accent-based social inferences are rooted in a more fundamental assumption that accent is tied to geographical background.

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