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# How sociolinguistic factors shape children's subjective impressions of teacher quality

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**Abstract**

When university students are asked to rate their instructors, their evaluations are often influenced by the demographic characteristics of the instructor—such as the instructor's race, gender, or language background. These influences can manifest in unfair systematic biases against particular groups of teachers and hamper movements to promote diversity in higher education. When and how do these biases develop? Here, we begin to address these questions by examining children's sociolinguistic biases against teachers who speak with different accents. To do this, we presented 5-year-old Canadian English-speaking children with pairs of adult talkers. Children were asked to select "who they'd like to be their teacher" then they rated "how good of a teacher" they thought each talker would be on a 5-point scale. In each trial, one talker spoke in the locally dominant variety of Canadian English, and the other spoke in a different accent. Children strongly preferred Canadian-accented teachers over teachers who spoke with non-native (i.e., French or Dutch) accents, but also demonstrated a preference for Canadian teachers over teachers who spoke with non-local regional accents (i.e., Australian or British). In line with the binary choice data, children rated the Canadian talkers more favourably. The relationship between the gender of the teacher and the gender of the child also impacted ratings. This work demonstrates that even at the onset of formal education, children may already exhibit signs of accent-based biases. We discuss these findings in relation to the growing literature on implicit bias in higher education.

**Keywords**

Developmental social cognition; accent-based biases; gender-based biases; teacher preferences; developmental sociolinguistics; student evaluations of teaching

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Humans readily evaluate others, sometimes forming impressions in as little as a few seconds (Ambady & Rosenthal, 1992, 1993) Evaluations of teachers are no different; college students can rapidly form impressions about the competency of instructors after watching just 30 s of silent teaching (Ambady & Rosenthal, 1993). But what factors affect how college students rate their instructors? End of semester evaluations show that students' evaluations can be biased by the demographic characteristics of the teacher—such as their age, race, gender, and accent (Fan et al., 2019; MacNell et al., 2015; Murray et al., 2020; Rubin & Smith, 1990; Storage et al., 2016). Although these biases have been well documented in college-aged students, very little work has examined whether these factors might influence young children's evaluations of instructors. This is surprising given the growing literature on children's early-emerging accent and language-based biases (Johnson et al., 2021; Kinzler et al., 2007, 2010). In the current study, we ask whether—and how—these biases affect children's sociolinguistic evaluations of teachers. Do children prefer teachers who speak with local-sounding accents? And if they do, are these preferences driven simply by familiarity or do children actually evaluate teachers who speak with foreign accents as less competent? These questions remain largely unexplored in the developmental literature. Here, we report the first well-controlled experimental study addressing these issues in a large, diverse sample of primary school children.

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Accent-based biases have been well documented in adults. In general, adults evaluate talkers who speak with non-native accents[1] as less competent, less socially desirable, and less trustworthy than speakers who learned English as a first language (Bresnahan et al., 2002; Fuertes et al., 2002, 2012; Gluszek & Dovidio, 2010; Lippi-Green, 2012). These biases against non-native speakers are also present in the classroom and can negatively impact how university[2] students evaluate their professors (Mayer et al., 2003; Murray et al., 2020; Rubin & Smith, 1990; Subtirelu, 2015). In line with other work on students' evaluations of teachers (see Uttl et al., 2017 for a review), there is little evidence to suggest that students' negative evaluations reflect true differences in their learning (Gill, 1994; Gill & Badzinski, 1992; Mayer et al., 2003). Despite this, teacher evaluations are weighted heavily in the tenure process, and these biases can negatively impact the promotion of faculty members from underrepresented groups (Fan et al., 2019; Murray et al., 2020; Storage et al., 2016).

Understanding when and how language-based instructor biases develop could be crucial to mitigating the negative impact of these biases in higher education. To date, we know very little about the role of accent-based biases in young children's impressions of teacher quality. Studies of accent-based biases in children have focused largely on social liking or peer acceptance rather than impressions of competence (e.g., Kinzler et al., 2009; Liberman et al., 2017; Souza et al., 2013; see, however, Kinzler & DeJesus, 2013; McCullough et al., 2019). This work has shown that by 5 years of age children will choose to be friends with peers who speak with a local accent over peers who speak with a different regional or non-native accent (Kinzler et al., 2007, 2009; Paquette-Smith et al., 2019). Although these studies demonstrate that children prefer to be friends with someone who "talks like them," these findings do not necessarily mean that children would evaluate regional and non-native accented speakers as less competent teachers. Moreover, much of the work on children's friendship preferences presents children with a single (usually non-native) accent, which makes it difficult to discern how much the specific accent of the teacher might matter. Previous work has suggested that preferences for local speakers (or in-group members) are stronger when the non-local speaker (or out-group member) speaks with a non-native compared to a regional accent (Paquette-Smith et al., 2019). However, even within non-native accents there could be substantial variation in children's preferences. It is also possible that other demographic characteristics of teachers (such as the teacher's gender) and the demographic characteristics of the child (e.g., the child's own gender or exposure to accents in everyday life) might moderate the strength of these biases. In the current study, we examine these possibilities.

Although no work has examined accent-based teacher preferences directly, a few studies have examined children's expectations or willingness to acquire knowledge from people who speak in an unfamiliar language or accent (Begus et al., 2016; Corriveau et al., 2013; Howard et al., 2014; Wagner et al., 2014). One study found that 3-year-olds will choose to learn the names of novel objects from experimenters who speak with a familiar accent, even though they had previously labelled known objects incorrectly, over experimenters who mimic a non-native accent but labelled the known objects correctly (Corriveau et al., 2013). This could suggest that biases against learning from accented speakers are present early on in development. However, as they grow older, children seem to become less rigid in their use of (and/or re-rank the weighting of) accent information. By 4 years of age, children will choose to accept labels from non-native sounding experimenters who were previously accurate over familiar sounding experimenters who were previously inaccurate (Corriveau et al., 2013). Interestingly, related work has suggested that children's willingness to learn from speakers from different language backgrounds may also vary depending on the linguistic diversity present in their community. In situations where the community was more diverse, monolingual children were more likely to learn actions from speakers who spoke in a different language (e.g., Spanish; Howard et al., 2014). Similar effects have also been seen in bilingual children (Pierre & Johnson, 2019).

Why might living in a more diverse community make children more likely to learn from out-group members? One potential reason may be that they have had greater contact with members from different racial or linguistic groups. In studies with adults, intergroup contact has been shown to attenuate bias (Allport, 1954; Pettigrew & Tropp, 2006). Based on this work, we might predict that children with greater exposure to accented speakers, or greater exposure to diversity more broadly (see Boin et al., 2021, for a review on the generalizibility of contact effects to different groups), would exhibit less bias against accented instructors. That being said, even in linguistically and culturally diverse populations of children, some studies still find evidence of race and language-based in-group preferences (Galguera, 1998; Paquette-Smith et al., 2019; Souza et al., 2013). For example, when a group of 9- to 17-year-old students in diverse inner-city schools were asked to evaluate fictional teachers (described in vignettes) that varied in race, gender, and bilingual status, they preferred teachers who came from the same ethnic and language backgrounds as they did (Galguera, 1998). Thus, simply living in a diverse community may not be enough to reduce bias. The impact of contact is nuanced and can depend on a variety of factors such as the quality of the contact (MacInnis & Page-Gould, 2015; Marinucci et al., 2021) and the degree to which children integrate with peers from other groups (McKeown et al., 2016).

Interestingly, the same study also found that both male and female students showed preferences for female teachers over male teachers (Galguera, 1998), which is the opposite of what we typically see in college-aged samples.

In college classrooms, there is strong evidence of gender bias against female professors, leading female professors to be evaluated less favourably than their male counterparts, particularly in science, technology, engineering, and mathematics fields (Boring, 2017; Chávez & Mitchell, 2020; MacNell et al., 2015; Mengel et al., 2019; Storage et al., 2016). The impact of gender on elementary school students' subjective evaluations of teachers is much less clear. In the few studies that have directly asked children about their gender-based teacher preferences, the findings have been inconclusive. Some studies have reported a preference for female instructors (Galguera, 1998), whereas others have reported no preferences or preferences only in specific age groups (Carrington et al., 2007; Goebel & Cashen, 1979). Given these discrepancies in the literature, it is still an open question as to how the gender of the student and the gender of the teacher impact student's impressions of instructor competency.

## The current study

In the current study, we begin to address these questions by examining the teacher preferences of 5- and 6-year-old English-speaking children. In each trial, children were presented with pairs of talkers of the same gender. One talker always spoke English with a Canadian accent and the other always spoke English with a different regional (i.e., British English or Australian English) or non-native accent (i.e., Dutch-accented English or French-accented English). The children were then asked to select "who they wanted to be their teacher" and rate "how good of a teacher" they thought each speaker would be. Similar to children's preferences for people who speak with the local accent (Kinzler et al., 2007; Paquette-Smith et al., 2019; Souza et al., 2013), we predict that children will prefer teachers who speak with a local accent over a non-local accent. However, a preference for members of the same accent group does not necessarily mean that children will evaluate teachers with foreign accents as less competent teachers. This is why it is important to collect both selection and rating data. It may be the case that children prefer local-sounding teachers, but yet rate all the teachers as similarly competent.

We also collected detailed information about participants' weekly accent exposure, which enables us to examine whether, as predicted by the adult literature (Allport, 1954), children with greater exposure to accents in everyday life might be more accepting of accented teachers. Finally, our design in which half the teacher pairs were male and half were female, also allows us to investigate whether children, like college age students (Boring, 2017; Chávez & Mitchell, 2020; MacNell et al., 2015; Mengel et al., 2019; Storage et al., 2016), evaluate teachers differently depending on their gender. On one hand, similar to children's preferences for same-gender peers (Martin et al., 2013; Martin & Fabes, 2001; Powlishta et al., 1993; Shutts et al., 2013), we might predict that children will evaluate teachers of the same gender more favourably. On the other hand, given that most elementary school teachers are female (81.3% in Ontario; Ontario Ministry of Education, 2016), we could also predict that, as in Galguera (1998), children may perceive female teachers to be better teachers than male teachers.

## Method

### Participants

A total of 144 monolingual Canadian-English-speaking 5- and 6-year-olds ($M_{age}$ = 69.82 months; range = 60.20–83.60 months; 68 males, 76 females) from Southern Ontario participated in this study. The effect sizes reported in accent-based preference studies (comparing children's mean proportion of selections to chance using a one-sample *t* test) can vary substantially depending on the population tested and the type of accents used (see, for example, Kinzler & DeJesus, 2013, compared with Kinzler et al., 2009). To have 80% power to detect an effect of $d = .4$ (a conservative effect size estimate from an experiment with regional accents; Paquette-Smith et al., 2019), an a priori power analysis using G*Power indicated that a minimum of 52 participants would be needed. Given that our planned analyses were more complex, we ran 72 participants in each version of the experiment for a total of 144 participants. All children received 90% English input, but many had exposure to a wide variety of non-local accents in their day-to-day life. The participants we tested were ethnically diverse and came from a variety of cultural backgrounds. Eighteen additional children participated but were excluded from the analysis: 13 had a strong side bias as they always picked the teacher on the same side of the screen (suggesting that they may not have understood the task), two chose not to complete the task, and three were excluded due to experimenter error (i.e., the experiment was not recorded).

### Stimuli

The speech samples used in this study were downloaded from the Speech Accent Archive (Weinberger, 2015). All speakers produced the "Please call Stella" elicitation passage, which contains a range of English phonemes that are produced differently across different accents/dialects of English. The recordings of one male and one female speaker were selected for use from each of the following four non-local accent categories: French-accented English, Dutch-accented English, British-accented English, and Australian-accented English. Each of the non-local speakers was paired with a Canadian-accented speaker of the same gender downloaded from the Archive. The Canadian, British, and Australian speakers began learning English

from birth (as a first language). The French and Dutch speakers learned French and Dutch as their first language and began learning English as a subsequent language between 9 and 12 years of age. The eight Canadian-accented speakers were matched as closely as possible in emotional affect and voice quality to the non-local speakers. For the purpose of this study, the four-sentence elicitation passage (e.g., "Please call Stella") was divided into two smaller passages (each consisting of two sentences). The visual stimuli consisted of eight stock images of young adults presented side-by-side on a white background. The pairs of images were matched in gender and were similar in terms of clothing and hair style. As to not confound race and accent, all of the stock photos selected appeared to be from the same racial group (i.e., White).

### Design

All children completed four trials; during each trial, children were presented with one adult who spoke the local Canadian variety of English and one adult who spoke with a non-local regional or non-native accent. For half of the children (Group 1a; 43 females, 29 males), Dutch-accented English and British English served as the non-local accents. For the other half (Group 1b; 33 females, 39 males), French-accented English and Australian English served as the non-local accents. Children in each group were randomly assigned to complete one of four counterbalanced orders of the experiment. Each order consisted of four trials: two in which the child chose between a non-native (Dutch or French) accented speaker and a Canadian speaker and two trials in which they chose between a regional (British or Australian) accented speaker and a Canadian speaker. Across the four orders, the side in which the images appeared on, whether they completed the regional or non-native accented trials first, and the pairing of the voices to the images were counterbalanced.

### Procedure

At the beginning of each trial the experimenter said, "Here are two teachers—let's hear what they sound like." Then, the participant heard the voice of the teacher on the left side of the screen followed by the voice of the teacher on the right side of the screen. All auditory stimuli were presented to the child via headphones to ensure that the caregiver or experimenter could not bias the child's responses. In each trial, the child heard both speakers produce the same passage. While the voices played, a green box highlighted the image of the teacher who was speaking. After the child listened to both teachers, they were asked to place a star above the person they wanted to be their teacher. After a teacher was selected, the experimenter removed the star and asked the child to indicate using a child-friendly Likert-type scale "how good of a teacher" they thought each of the teachers would be. The Likert-type scale consisted of five smiley faces that ranged from sad to happy and were verbally labelled as "very bad," "bad," "in-between," "good," and "very good." The child was asked to indicate their rating by pointing to the corresponding face on the scale. After the child provided a rating for both teachers, the experimenter moved onto the next trial. The entire procedure was videotaped for offline verification of the child's selections and ratings.

After the study, the experimenter completed a detailed questionnaire with the caregiver that asked about their child's exposure to different accents or varieties of English. As in Paquette-Smith et al. (2019), children were classified based on the amount of exposure that they had to different accents in their everyday life.[3] Of those that completed the language questionnaire, 26 children did not interact with anyone who spoke with a non-local accent on a weekly basis and were classified as having Low Exposure. In contrast, the 44 children who had substantial exposure to non-local accents (i.e., they lived with someone who spoke with a non-Canadian accent or had consistent 40 hr/week contact with an accented speaker for at least four years of their life) were classified as having High Exposure. The remaining 69 children were classified as having Medium Exposure as their exposure fell in-between the low and high groups.

### Data analysis

In each of the four trials, children selected between a Canadian- and a foreign-accented speaker. If they selected the local (Canadian-accented) teacher, their selection was coded as 1, and if they selected the non-local (non-native or regional) accented teacher, their selection was coded as 0. The mean proportion of Canadian selections was computed for each participant. To compare children's ratings of the Canadian speakers and the non-native or regional accented speakers, children's ratings on the 5-point smiley face scale were converted into numerical values (i.e., 1 = *very bad*, 2 = *bad*, 3 = *in-between*, 4 = *good*, 5 = *very good*). The selection and rating data were analysed using a series of *t* tests and ANOVAs. Where applicable, significant interactions ($p < .05$) were followed up using Bonferroni-corrected post hoc tests.

## Results

### Selection data

In line with previous work (e.g., Kinzler et al., 2007, 2009; Paquette-Smith et al., 2019), we began by comparing children's selections of the Canadian-accented speakers to chance (.5). When asked to select who they wanted to be their teacher, Canadian children selected Canadian-accented teachers more often than chance (Mean selection Canadian = .71), $t(143) = 9.41$, $p < .01$, $d = .78$, indicating that children preferred teachers who spoke with the locally

dominant accent. Next, we asked whether the strength of children's preferences for the Canadian teachers varied depending on the accent of the non-local teacher. Indeed, we found that children showed stronger preferences for the Canadian teacher when the non-local teacher spoke with a non-native French accent (Mean selection Canadian = .84) compared with a regional Australian accent (Mean selection Canadian = .69) in Group 1b, $t(71) = 2.82$, $p = .006$, $d = .33$. However, there were no detectable differences in preferences for the non-native Dutch accent (Mean selection Canadian = .67) compared with the regional British accent (Mean selection Canadian = .63) in Group 1a, $t(71) = .61$, $p = .544$, $d = .07$ (see Figure 1). Although most of the previous work on children's accent-based preferences has compared preferences for a single regional or non-native accent, our data suggest that the selection of accents (and potentially speakers) might be influential in driving children's preferences. It is also possible that other factors, such as the comprehensibility of the individual speaker, may play a role in influencing children's preferences, a point which we return to in the general discussion.

Taken together, our results suggest that the accent of the out-group member influences children's selections of the Canadian-accented teachers. However, given the binary nature of selection data, we acknowledge that this type of analysis may over simplify the rich social decisions that children are making while evaluating others. Even though children might show preferences for Canadian teachers in a forced-choice selection task, children might not actually evaluate foreign-accented teachers as being less competent. In order to gain a more nuanced understanding of how children evaluate teachers, we analysed children's ratings of the local and non-local accented teachers on a 5-point scale.

## *Ratings data*

Overall, children rated the French, Australian, and Dutch speakers as less competent than the Canadian speakers they were paired with suggesting that children are not simply selecting speakers that sounded familiar, but are actually, like adults, evaluating non-local speakers more negatively. Notably, however, children did not (on average) rate the non-local speakers as "bad" or "very bad" teachers. The mean ratings of the non-local accented speakers ranged from 3.33 (French-accented) to 3.80 (British-accented), thus falling in the 3 (*in-between*) to 4 (*good*) range (see Figure 2).

To examine what factors might impact children's ratings of the non-local teachers relative to the Canadian teachers, a difference score was created by taking children's ratings of the Canadian teacher in each pair and subtracting their ratings of the non-local (accented) teacher. Thus, more positive values indicate greater bias against the non-local teacher. Using a mixed-ANOVA, we examined the impact of Accent Group (1a: Dutch-accented English and British English or 1b: French-accented English and Australian English), Accent Type (regional vs. non-native) and the amount of exposure that children had to non-local accents in everyday life (Low, Medium, High) on difference scores.[4] The model also included the interactions between Accent Type × Accent Group and Accent Type × Accent Exposure. We found a marginally significant main effect of Accent Type, $F(1,135) = 3.47$, $p = .065$, $\eta_p^2 = .03$, suggesting that the differences between children's ratings of local (Canadian) and non-local teachers tended to be greater when the non-local teachers spoke with a non-native compared with a regional accent. Similar to the selection data reported above, there were also differences between the Accent Groups (1a vs. 1b), $F(1,135) = 10.80$, $p = .001$, $\eta_p^2 = .07$. Children showed greater biases when the non-local speakers spoke with French and Australian accents compared with British and Dutch accents. There was no main effect of Accent Exposure, $F(2,135) = 1.23$, $p = .296$ $\eta_p^2 = .02$, suggesting that children who had greater exposure to accented speakers in everyday life did not show smaller differences between their ratings of the local and non-local accented speakers. Finally, there were no significant interactions between Accent Type and Accent Group, $F(1,135) = 0.003$, $p = .954$, $\eta_p^2 < .01$, or Accent Type and Accent Exposure, $F(2,135) = 0.66$, $p = .519$, $\eta_p^2 = .01$.

Although there is work looking at how teacher's biases can shape their opinions of students (Babad et al., 1982; Bonefeld & Dickhäuser, 2018; Lavy & Sand, 2018; Meissel et al., 2017; Okonofua & Eberhardt, 2015; Rosenthal & Jacobson, 1968), this is one of the few studies to quantitatively evaluate how young children's biases impact their evaluations of teachers. Here we find evidence that 5-year-olds' accent-based in-group preferences may be accompanied by some degree of out-group derogation. However, given that children always selected "who they wanted to be their teacher" before rating "how good of a teacher" they thought each person would be, we cannot rule out the possibility that children's selections might have influenced their ratings of those teachers. We also find that greater exposure does not seem to close the gap between children's ratings of local and non-local accented teachers. These biases to view non-local accented instructors more negatively may impact students' perceptions of teachers in the real classroom and could have downstream consequences for learning from accented instructors.

Children always selected between pairs of teachers of the same gender. To examine the impact of gender, we can compare children's ratings of male and female teachers across trials to examine whether the gender of the child and the gender of the teacher interact. To assess this, we averaged the ratings of both teachers on a given trial, then we averaged across the two trials of the same gender. A mixed-ANOVA with Teacher Gender (female, male) as a within-subjects factor and Child Gender (female, male) as

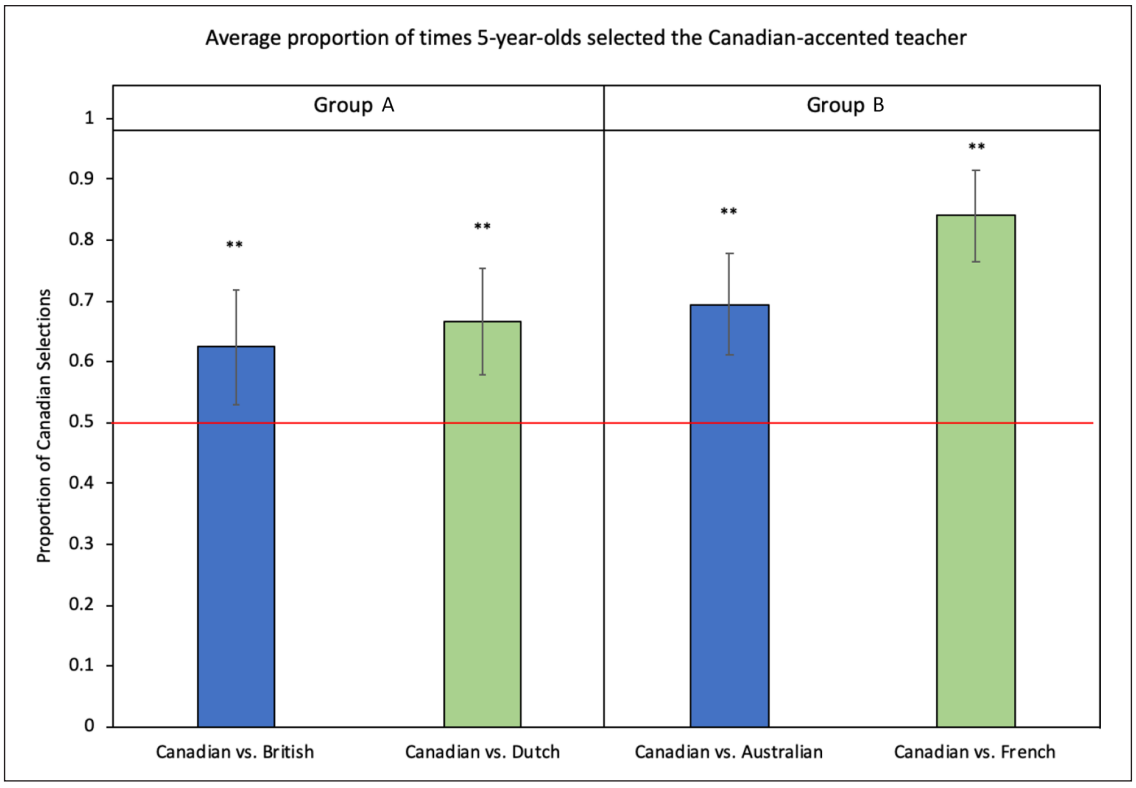


**Figure 1.** Proportion of times that children selected the Canadian English speaker in Accent Group A (Canadian English vs. British English and Canadian English vs. Dutch-accented English) and Accent Group B (Canadian English vs. Australian English and Canadian English vs. French-accented English). Higher bars indicate a stronger "preference" to select the Canadian speaker. The red line indicates chance performance and error bars represent 95% confidence intervals.
**$p < .01$.

a between-subjects factor was used to predict children's mean ratings. Overall, there was no main effect of Child Gender, $F(1,142) = 2.73$, $p = .101$, $\eta_p^2 = .019$ or Teacher Gender, $F(1,142) = 1.22$, $p = .271$, $\eta_p^2 = .009$. However, there was a significant interaction between the child's gender and the teacher's gender, $F(1,142) = 21.48$, $p < .001$, $\eta_p^2 = .131$ (see Figure 3). Bonferroni-corrected post hoc comparisons indicated that although male and female children rate male teachers similarly ($p = .603$), female teachers were rated lower by male children and higher by female children ($p = .001$).[5]

## General discussion

Negative stereotypes based on race, gender, and accent can lead elementary school teachers to unfairly evaluate their students (Babad et al., 1982; Bonefeld & Dickhäuser, 2018; Lavy & Sand, 2018; Meissel et al., 2017; Okonofua & Eberhardt, 2015; Rosenthal & Jacobson, 1968). In this study, we use a selection and rating task to examine whether children hold similar biases in evaluating their teachers. Our results demonstrate that by their fifth birthday, children already show preferences for teachers who speak with the local accent. These preferences are apparent regardless of the type of accent (regional or non-native) or the linguistic diversity present in the child's home environment (i.e., even children who are routinely exposed to accented speech at home show these preferences). Taken together, this work suggests that the biases we see in college student's evaluations of professors may have their roots in early childhood.

In line with previous work on accent-based peer preferences (Kinzler et al., 2007; Paquette-Smith et al., 2019), we found that children tended to exhibit stronger biases against teachers who spoke with non-native compared to regional accents. This pattern was driven primarily by children's strong reaction to the French-accented English speakers. Indeed, children treated the Dutch accent more like the regional accents used in the study. One possibility is that the French accent was simply more difficult to understand compared with the other accents. We know by their second birthday children can adapt to unfamiliar regional (van Heugten et al., 2015) and non-native accents (Paquette-Smith et al., 2020; van Heugten et al., 2018). However, just because children are able to adapt, does not mean that processing the French accent was not effortful. It is also possible that there is a true social bias against French speakers, independent of how difficult the accent is

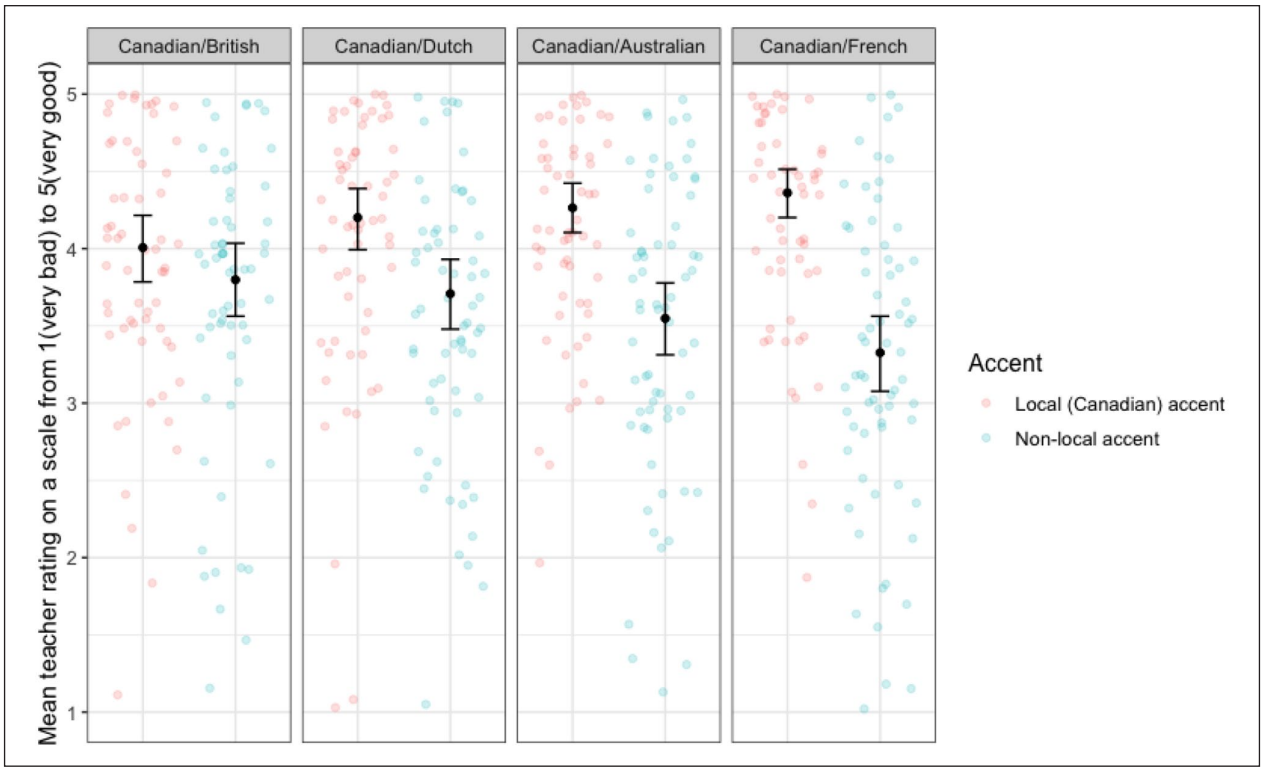


**Figure 2.** Mean teacher ratings for each pair of teachers on a 5-point rating scale from 1 (*very bad*) to 5 (*very good*). Error bars represent 95% confidence intervals.

to understand, or some combination of the two. To examine whether comprehensibility may have contributed to children's selections, we conducted an adult comprehension task using the stimuli from this experiment. In the task, 20 adults were asked to transcribe the passages produced by the eight non-local speakers (i.e., the two British, two Australian, two Dutch, and two French-accented speakers). Because adults are much more proficient than young children in adapting to unfamiliar accents (Cristia et al., 2012), we embedded our speech samples in noise to avoid potential ceiling effects (Clopper & Bradlow, 2008; Stringer & Iverson, 2019). Comprehension was assessed by computing the mean percentage of words that participants correctly transcribed from the passages in each of the four accents. Our findings confirmed that there are differences in the comprehensibility of the four non-local accents, $F(3, 57) = 7.33$, $p < .001$, $\eta_p^2 = .278$. These differences in adult comprehension align with the differences observed in children's preferences, with adults exhibiting greater difficulty comprehending the French accents ($M = 50.56\%$ correct) compared with the British ($M = 68.42\%$ correct), Australian ($M = 68.67\%$ correct), and Dutch ($M = 65.98\%$ correct) accents.[6] Thus, it is plausible that differences in comprehensibility may have played a role in children's preferences.

To further test the hypothesis that comprehensibility contributed to children's judgements, we also examined whether the order in which children heard the speakers influenced their selections. Given that in each trial both speakers produced the same passage, we predicted that children would understand the non-local speakers better on trials where the local speaker had already produced the same passage. Our data support this possibility. Children exhibited stronger preferences for the Canadian teacher over the non-local teacher when they heard the non-local talker produce the passage first ($M = .75$) as opposed to second ($M = .66$), $t(143) = 3.37$, $p = .001$, $d = .28$, providing further support for the notion that difficulty in comprehending the non-local speakers may have contributed, at least in part, to children's judgements in this task. These findings are in line with reports in the adult literature suggesting that accented speakers are evaluated more negatively in situations where those speakers are more difficult to comprehend (Dragojevic & Giles, 2016). However, given that children still selected the Canadian speakers 66% of the time when the accented speaker spoke second suggests that comprehension can only partially explain these biases. Moreover, we suspect that the role comprehensibility may be less pronounced in real-world situations where children have more time to adapt.

Another unique aspect of our study was that we included both a forced-choice selection component as well as a rating component. Children's selections were generally in line with their ratings, which could be related, at least in

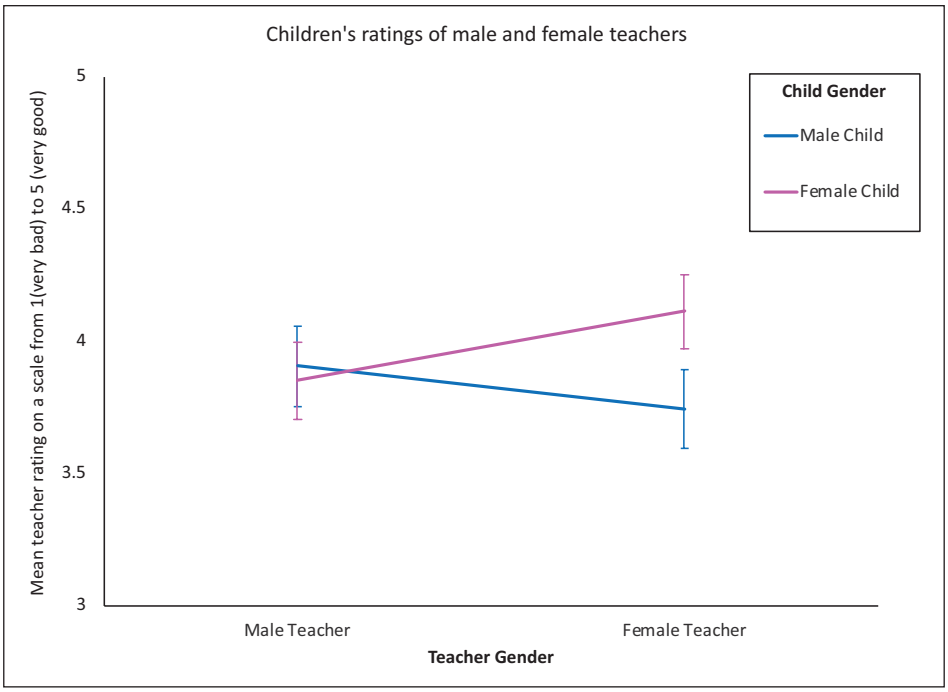


**Figure 3.** Mean teacher ratings for male and female teachers by male and female participants on a 5-point rating scale from 1 (*very bad*) to 5 (*very good*). Error bars represent 95% confidence intervals.

part, to the fact that children were asked to rate the teacher's competency after having been asked to select who they wanted to be their teacher. Importantly, our results suggest that although children rated the non-local accented teachers as less competent than the Canadian-accented teachers, the other-accented teachers were still rated on average in the "in-between" to "good" range. This suggests that language-based biases might not be as polar as the binary selection data might lead us to believe. In the real world, children have much richer information about teachers and their behaviour, which may override their preferences for local accented speakers. In future studies, it would be interesting to examine whether positive in-lab experiences with highly competent non-local accented teachers would influence children's preference and rating data.

Although, our study suggests that children can make snap judgements about a teacher's competence based on just listening to a few seconds of their speech, it remains to be seen if these accent-based biases would persist after children had time to interact with the teachers and adapt more to their accents. Indeed, other studies in our lab have shown that young children can adapt quickly to talkers with non-native accents after a short but positive face-to-face interaction with the talker (Paquette-Smith et al., 2020). This suggests that one possible way to decrease these accent-based biases might be to give children some exposure to the speaker before they are asked to evaluate them. Or to test students who have had a school teacher with a non-native accent and see if they are less biased than students without this experience. However, the potential impact of interventions that target comprehensibility is unclear. Research with adults suggests that even though comprehension increases with exposure (see Cristia et al., 2012, for a review), college-aged students still show biases against accented instructors in their end-of-semester evaluations (after they have had extensive time to adapt; Murray et al., 2020; Rubin & Smith, 1990).

College student evaluations can also be biased by the non-linguistic characteristics of the instructor such as their gender, their confidence, or their assertiveness (Carpenter et al., 2016, 2020). In our sample, we found evidence of gender bias. Instead of having an overall bias to prefer male teachers, as is typically seen in college samples (Chávez & Mitchell, 2020; MacNell et al., 2015; Mengel et al., 2019; see, however, Centra & Gaubatz, 2000), children tended to evaluate teachers from their own gender category more favourably. In particular, female teachers were rated higher by female children and lower by male children. This could indicate that children's preferences for teachers are driven by the same underlying in-group preferences that seem to drive their preferences for same-gender peers (Martin et al., 2013; Martin & Fabes, 2001; Powlishta et al., 1993; Shutts et al., 2013). Interestingly, this effect seems to be driven by children's rating of the female teachers, with male children rating the female teachers as less competent and female children rating them as more competent. However, if children's preferences for same-gender teachers only reflected

a *preference* to interact with people from the same gender category, then children would not have rated the teachers from the other gender category as less competent instructors. Our findings suggest that children are exhibiting more than just a preference; here there is a tendency to view out-group members as less competent, particularly for female instructors. These types of biases may begin to explain why having a teacher of the same gender has (in some studies) been associated with more favourable educational outcomes (Dee, 2006; see, however, Carrington et al., 2007; de Zeeuw et al., 2014, which have found no evidence of these differences). These findings also align with work suggesting that children may be more biased against women in situations where intellectual ability is emphasized (like in a classroom; Bian et al., 2017, 2018). Given that, in our task, students have not actually been taught by the speakers they are evaluating, it is important for future research to begin to assess the relationship between children's teacher preferences and learning as it occurs over the course of the school year in an actual classroom.

The current study was not designed to examine the combined impact of accent and gender-biased biases. However, exploratory analyses suggest that the interaction between Child Gender and Teacher Gender might be stronger when the teacher speaks with a non-local accent. That is, children may be more biased against teachers of the opposite gender who speak with a foreign accent, compared to teachers of the same gender who speak with a foreign accent. This aligns with work in adults suggesting that accent and gender biases can interact (Nelson et al., 2016). However, the nature of those interactions might change over the course of development as children's ability to classify more subtle regional differences (i.e., differences among American accents) improves (McCullough et al., 2019) and children develop stronger gender-role biases (Liben et al., 2001). Future work is needed to explore the relationship between accent and gender biases in children.

Many of the interventions to reduce biases in the childhood years have been designed specifically to reduce racial and gender-based biases (Aboud et al., 2012; Bigler, 1995; Bigler & Liben, 2007). However, it is not known whether these types of interventions may be effective in reducing accent-based biases. Given how salient accent and language-based groups are to young children (Esseily et al., 2016; Kinzler et al., 2009, 2010), there is a need to develop specific interventions that target accent-based biases in the childhood years. Interventions designed to reduce the impact of biases on adults' evaluations of professors and employees have focused on creating greater awareness of potential biases before the evaluation occurs (Peterson et al., 2019; Wang et al., 2013). For example, one intervention was able to reduce student's bias against female professors by acknowledging that teaching evaluations can be biased by the race and gender of the instructor and explicitly telling students to "make an effort to resist [these] stereotypes about professors" when they are completing the evaluation (Peterson et al., 2019). It is possible that similar "awareness-based interventions" could be adapted for use in children and could be one way to reduce children's biases against teachers who speak with different accents.

Taken together, this work suggests that even before children turn 5, they are already beginning to evaluate teachers who belong to their accent in-group more favourably. Importantly, although we see evidence of accent-based in-group preferences, children do not rate out-group members as "bad" or "very bad" teachers, which suggests that these biases may still be malleable based on children's experiences. That being said, children's experience with accented speakers in everyday life did not seem to reduce bias in this sample, which could suggest that mere exposure may not be enough. Instead, overt discussions about accent and gender might be necessary to mitigate these early-emerging biases. This work contributes to our understanding of the factors that impact these biases in the childhood years and highlights the importance of designing interventions to target these biases early on in development.

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## Supplementary material

The supplementary material is available at qjep.sagepub.com.

## Notes

1. In this article, "non-native accents" refer to varieties of a language that were learned after early childhood as a foreign language. In contrast, "regional accents" refer to varieties of a language spoken by native speakers in different geographical regions (e.g., Australian-accented English).

2. In this article, we use the terms college and university students interchangeably to refer to students in post-secondary (post high school) education.
3. Five children were not classified because there was not enough information provided by the caregiver for us to confidently classify them into one of the three accent groups.
4. $N = 139$; 5 children were not classified because there was not enough information provided for us to confidently classify them into one of the three accent groups.
5. In this analysis, we collapsed across accent. However, it is possible that these gender interactions might vary depending on the accent of the teacher. In an exploratory analysis, we analysed the ratings of the local and non-local teacher separately. There is some indication that the two-way interaction between Teacher Gender and Child Gender is stronger for children's ratings of the non-local teacher, $F(1,142) = 15.94$, $p < .001$, $\eta_p^2 = .101$. In the subset of the data where children rate the local (Canadian) accented teachers, the interaction between Child Gender and Teacher Gender trends in the same direction but is not statistically significant, $F(1,142) = 2.08$, $p = .152$, $\eta_p^2 = .014$.
6. Bonferroni-corrected post hoc comparison tests indicated that the French accent was more difficult to comprehend than the British ($p = .013$), Australian ($p = .005$), and marginally different from the Dutch accent ($p = .086$).

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