“Who’s” right:

Accent and Accuracy in Assessments of Object Labels and Instances of Faultless Disagreement

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Abstract

As children learn about the world around them, they turn to familiar people within their own community in order to obtain the most accurate information. When learning about object labels in particular, children recruit both linguistic and extralinguistic information. Previous research has shown that some of this extralinguistic information includes the trustworthiness and accuracy of the speaker, and the speaker's accent as an indication of in-group/out-group status (Corriveau et al. 2013). In this study, we ask whether these external markers of speaker status can also be recruited for learning about properties of objects which go beyond objective truth-conditional meaning. Here, we extend the findings of Corriveau, Kinzler, and Harris (2013), beyond simple object labels to objective and subjective adjectives, in particular, predicates of personal taste (PPTs) such as *fun* or *yummy*. While assertions such as *That is a strawberry*/*That flower is yellow* are objective statements with distinct truth values, assertions such as *That is fun/not fun* can both be true, if 'anchored' to two different speakers, resulting in a so-called faultless disagreement. In an experimental study with monolingual English preschoolers (ages three to five) and adults, we presented participants with two speakers: one with a familiar, American English accent and the other with an unfamiliar, Spanish accent. At the same time, we strategically manipulated speaker accuracy through the labeling of familiar objects and their properties. We find that while adults and children may initially prefer to hear from the familiar speaker, they trust the accurate speaker to learn the label of a novel object, regardless of accent. However, in instances of faultless disagreement, adults are moderately influenced by accent, while children are influenced by the positive valence of the adjective, appearing to prefer the speaker who said something nice about the object. Thus, we find that accent, accuracy, and social norms all play a role as children rely on speakers to learn about the world around them.

1. Introduction

Imagine a curious child who, wandering about a museum, finds an unfamiliar object. The child picks up the object and looks around, ready to ask what this object is. Two people are available to them: the tour guide, who has a Spanish accent, and the teacher, who has an American English accent. Who does the child ask for the name of the object? Would they ask the teacher, who is familiar and in the same linguistic and cultural community of that child? Or would they ask the tour guide, who has been proving accuracy in their knowledge about the museum and its objects? On the one hand, one can assume that the person who has a familiar accent should have conventional knowledge about the community and this might be more important rather than the person who has expertise (Kinzler et al 2011). On the other hand, the prior accuracy of a speaker should be more important when considering overall knowledge (Corriveau et al. 2013).

Children as early as two years of age are just beginning to learn about the world around them. One of the first things that they do is learn about object labels, which they do by recruiting linguistic information such as syntax, semantics, and cooccurring words (Arunachalam & Waxman 2010, Gleitman & Gleitman 1992, Syrett et al. 2014, Syrett et al. 2019, Waxman et al. 2009). However, linguistic information by itself does not suffice; children also rely on extralinguistic information in order to learn. Such extralinguistic information includes the familiarity of a speaker providing the object label (Kinzler et al. 2011, Paquette-Smith et al. 2019), or that person's prior accuracy (Birch et al. 2008, Brosseau-Liard & Birch 2010, Corriveau et al. 2013). Recruiting extralinguistic information, monolingual American English-speaking children three to five years of age are more likely to prefer to hear from speakers who have an American English accent, a native accent, in comparison to an English speaker who has

a non-native accent which differs from the one that they are most familiar with, such as a Spanish accent[1] (Corriveau et al. 2013). Research on these preferences provide evidence that children four to five years of age prefer to ask speakers with a familiar accent about the function of an object, and they prefer to be friends with someone who speaks most like them (Kinzler et al. 2011). However, in instances where speakers prove their accuracy, accent does not necessarily affect children's preferences for that speaker (Corriveau et al. 2013). In addition, children learn about conventionality and appropriateness of certain statements within their speech community, taking this into account as well when making decisions about trusting a certain speaker over another (Holubar & Markman 2013, Repacholi & Gopnik 1997).

Previous research by Corriveau, Kinzler, and Harris (2013) analyzyed two separate speaker attributes: accent and accuracy. Their research attempted to investigate children's preferences for hearing from and endorsing, or agreeing with, statements from an English accented speaker and a Spanish accented speaker. These speakers provided novel labels for unfamiliar objects, before and after hearing a block which provided evidence for speaker accuracy. The researchers assigned participants to one of four conditions with varying levels of accuracy: 100% versus 0% accuracy for each speaker, and 75% versus 25% accuracy for each speaker. While these experiments by Corriveau et al. (2013) provided important evidence for children's accent preferences and their tracking of accuracy, they provided an opportunity to continue the investigation of children's uses of extralinguistic information.

[1] While there are different ways in which we can refer to speakers who speak with an "accent", we would like to clarify that **all** speakers speak with an accent. It simply depends on the level of familiarity relative to the language which a child is acquiring. In this paper, we will call the American English accent the "familiar" accent, and the Spanish accent the "unfamiliar" accent (although the children do have some degree of familiarity to this accent).

Flashing back to the child at the museum for a minute, let us now imagine that it is lunch time, and the child is in the cafeteria choosing what to eat. She turns to her teacher, who is eating a burger, and hears her say, “This burger is yucky”. She then turns to the tour guide, who is also eating a burger, and hears her say, “This burger is yummy”. Does she get a burger, or not? How does she make this decision of who to trust? Our study expanded upon Corriveau et al.’s (2013) study by adding an additional layer of subjectivity to the Accuracy Phase and through the creation of a new phase of faultless disagreement. In this phase, we used subjective adjectives such as *boring*, *fun*, *yucky*, and *yummy*, to aid in providing a deeper understanding of which extralinguistic factors are used when making decisions about speakers. Our study also presented participants with a condition of 50% speaker accuracy in order to examine the robust preferences that children have for a certain speaker – whether it be the accurate or familiar speaker. We predicted hypotheses for two separate scenarios. First, if participants rely on accuracy, then the accent of a speaker should not affect their decisions about which speaker to trust in instances of faultless disagreement and they should pattern at chance. Second, if instead participants are not affected by the at-chance accuracy, then they should revert back to their original preferences in those instances of faultless disagreement and choose to endorse the familiar accented speaker. Moreover, in Corriveau et al.’s (2013) study, our participants were three to five-year-old children, with the addition of adult participants. This addition of adult participants to this study would provide an important control for children’s actions and would provide insight into the development of accent and accuracy tracking.

1.1 Speaker Attributes

While linguistic information such as syntax and cooccurring words are important factors for children to take into account when learning about object properties and labels, extralinguistic

information is also important. Speaker attributes such as familiarity and accent influence children's decisions about who to turn to when asking about real-world information.

One of such examples about how familiarity and accent affects the decisions of children comes from Kinzler et al.'s 2011 study. This study provides evidence that children ages four to five predominantly turn to familiar accented speakers when making decisions regarding whom to trust, befriend, and how to categorize cultural items. In their experiment, children received accent training from *Curious George*, and for the second experiment, from *The Jabberwocky* in order to test for any effect of nonsense speech. For both experiments they heard from female speakers, one of which was a native English speaker who spoke with a familiar accent, and the other of which was a non-native English speaker who spoke with an unfamiliar, Spanish accent. After the accent training, the children were presented with a novel object, and shown two different uses for the object, with each informant using the object in a different way. The children were then asked to endorse one of the two uses for the object. Children demonstrated selective learning and endorsed the information about how to 'properly' use the novel object from the familiar accented speaker rather than the unfamiliar accented speaker.

Children also choose to be friends with individuals who speak similarly to them, whether it be in the same language with less familiar accent, or in an accent that is entirely unfamiliar to them in the speech community. Paquette-Smith et al. (2019) performed three experiments which tested this phenomenon in Toronto, a diverse city in which children acquire Canadian English but are exposed to a number of different languages and accents. Children between age five to six who spoke Canadian English were grouped by the level of exposure they had to British accents and Korean accents (in-person). While the children showed a strong preference for being friends with a child who spoke Canadian English, when they were presented with a child who spoke

Canadian English versus a child who had a British accent, they were much more likely to want to be friends with the child with the Canadian English accent. That preference was even stronger when they were presented with a child who had a Korean accent compared to a child who had a Canadian English accent. However, when presented with a child who spoke with a British accent and a child who spoke with a Korean accent, both accents which are unfamiliar to the children who were participating in the study, they chose to be friends with the child who had a British accent due to a higher level of familiarity with the accent in comparison to a Korean accent.

The studies by Kinzler et al. (2011) and Paquette-Smith et al. (2019) provide evidence that children are more inclined to trust and befriend those individuals who are familiar to them, by accent and culture. However, these are just two of many extralinguistic factors which come into play when children recruit information about objects around them. Another one of such extralinguistic factors is accuracy. The history of a speaker's accuracy affects a child's willingness to learn about object labels, properties, and functions from an individual. Thus, if a speaker has proven themselves to be inaccurate through inconsistent object labeling, then a child will be less inclined to trust them.

In their experiment, Birch et al. (2008) varied speakers' accuracy by using familiar as well as novel object labeling in addition to presenting object functions. The experimenters tested three and four-year-old children; they had two different speakers (puppets) name familiar and novel objects in two phases, a History Phase and a Testing Phase. In the first phase, the History Phase in which the speakers named known objects, one speaker labeled all objects correctly, while the other labeled all objects incorrectly. In the next phase, the Testing Phase, the speakers provided labels for novel objects, and participants were asked to place the novel object into the experimenter's hands therefore making their decision about which speaker is 'right'. Birch et al.

(2008) followed up this study with another experiment in which the speakers (puppets) demonstrated object functions for familiar and novel objects. Children ages three to four overwhelmingly preferred to learn object names and functions from a speaker who had been previously accurate. Given these results, Birch et al. (2008) were still perplexed about the reasoning that children have when considering the speakers' prior behavior, whether accurate or inaccurate.

Birch et al. (2008) proposed two theories for this pattern. First, in learning words, children may consider the knowledge of others, using theory of mind in order to acknowledge that adults must know more than them and can have different areas of expertise. This means that they are understanding theory of mind and are applying this to the puppets. Second, children may only consider the output of the speaker, meaning they distinguish a speaker who previously had good output and made 'nice' or 'right' statements, from speakers who have 'negative' or 'wrong' output. Children use this information to learn about speaker mental states and this indicates that children want to replicate the 'good' output for themselves and learn through rationalization (Birch et al. 2008).

In their later study, Brosseau-Liard and Birch (2010) examined how children interpret accuracy, but in this case, whether a speaker's prior accuracy indicates knowledge, or whether a speaker's prior accuracy means that a speaker has positive attributes. Children ages four to five were tested in tasks in which they were asked questions about speakers (puppets) based off of their prior accuracy in object labeling. The experimenters asked questions about the speakers' knowledge of words and facts, their talents and prosocial/antisocial behavior, and control questions such as preference/possession questions and situation-specific knowledge. While four-year-olds did not use accuracy of a speaker to make predictions about a speakers' future

behaviors, five-year-olds expected the previously accurate speaker to be more knowledgeable. The older children were even willing to make predictions about the speakers' future prosocial behaviors. Brosseau-Liard and Birch (2010) acknowledged that this age effect of older children being more inclined to turn toward accurate speakers is consistent throughout literature on this topic, noting that younger children are less likely to predict the stability of an individuals' behavior across time and different situations.

Another reasoning comes from Kinzler et al. (2011). They proposed that preschool-aged children use two different strategies in endorsing a speaker for accurate information. The first takes into account previous accuracy of the speaker's statements; the second takes into account preference for speakers who have a similar social identity to the children themselves (i.e. speakers who speak with a familiar accent compared to an unfamiliar one). In their 2013 study, Corriveau, Kinzler and Harris (2013) expanded upon Kinzler et al.'s previous study in 2011 by using a combination of accent and accuracy to manipulate the extralingustic factors which children are able to choose from in making their decisions about speaker preference and endorsement.

Corriveau et al. (2013) presented children ages three to five with two English speakers, one Spanish accented speaker and one English accented speaker, who provided novel names for unknown, novel objects, and familiar names of known objects. First, the participants heard from both speakers in an accent familiarization phase, in which the speakers read from *Curious George.* The participants then proceeded through three phases: a pre-accuracy phase, an accuracy phase, and a post-accuracy phase, each phase containing four trials. In the pre-accuracy phase, the children saw and heard novel objects and names. Next, in the accuracy phase, participants saw and heard familiar objects and names. In this phase, Corriveau et al. (2013) strategically

manipulated speaker accuracy through conditions in which each speaker was once 100% right and 0% right. Another set of conditions in which each speaker was once 75% right and 25% right was tested in a second experiment, with four-year-olds only. Lastly, the participants experienced the post-accuracy phase, which had an identical set-up to the pre-accuracy phase.

Corriveau et al. (2013) asked the participants which speaker they wanted to hear from for both the pre- and post-accuracy phases, allowing for them to indicate speaker preference. They also asked participants to endorse one speaker over the other, through asking children which speaker is right and wrong in object labeling. The researchers found that all children began by endorsing the speaker with the familiar accent in the pre-accuracy phase, and when that speaker proved to be inaccurate in the accuracy phase, they were willing to shift their opinion about that speaker in the post-accuracy phase and ask to hear from and endorse the speaker with the unfamiliar accent. After hearing the 100% accurate speaker with the unfamiliar accent, in the post-accuracy phase, four-year-olds chose to endorse the speaker with the unfamiliar accent about 70% of the time and five-year-olds chose the speaker with the unfamiliar accent about 75% of the time. However, the younger, three-year-old children continued to prefer to hear from and endorse the speaker with the familiar accent, even though that speaker proved to be inaccurate. This age group chose to endorse the speaker with the unfamiliar accent only 50% of the time, even though that speaker had proven to be most accurate. In addition, the children that were tested in the 75%/25% accuracy conditions had a more difficult time making decisions about speaker preference and endorsement. This age group in the condition in which the speaker with the unfamiliar accent was 75% accurate chose to endorse the speaker with the unfamiliar accent only 64% of the time. Lastly, when participants were asked for reasoning behind their endorsements when the speakers provided wrong labels for known objects, children were eager

to point out that the speaker with the unfamiliar accent simply 'didn't know' about the items at hand, while the speaker with the familiar accent was just 'pretending' (Corriveau et al. 2013).

In summary, children are able to recruit both accent and accuracy in order to make decisions about speaker preferences and endorsement. They are able to track changes in accuracy, overcome their original preferences, and make educated decisions about which speaker could be more trustworthy. In particular older children are able to recognize the stability and accuracy of a speaker more easily than younger children and find it easier to prioritize accuracy rather than familiarity of accent, as seen in Corriveau et al. (2013).

1.2 Semantics of Faultless Disagreement and Predicates of Personal Taste

When it comes to object labels, we often encounter adjectives such as *plastic*, *wooden*, *spotted*, all of which are objective. We can take one look at an object and expect to see certain qualities. Statements such as *That strawberry is red* can be verified against information in the world, and we can therefore unobjectionably assess a statement such as that one as being true or false. There are, however, adjectives which provide a subjective description about objects. For example, we can provide labels such as *fun* and *tasty*, as in *That game is fun* and *That cake is tasty.* Statements such as those contain predicates of personal taste (PPTs), which introduce a layer of subjectivity, making it more difficult to point out whether a speaker making this utterance is right or wrong.

The reasoning behind this layer of subjectivity is due to the fact that PPTs encode a judge parameter. Lasersohn (2005) argues that statements containing PPTs can be true to each person making the statement, even if the speakers are essentially contradicting each other. One possibility of this simultaneous truth value is that the statement is linked to each individual speaker making the statement, another is that the statement is linked to the contextually salient

individual (Lasersohn 2005; Stephenson 2007). Both possibilities provide evidence of a judge parameter, which states that each speaker is the judge of their own statement, therefore providing it its own truth value relative to their separate contexts. Pearson (2013) argues against the judge parameter, stating that PPTs instead encode first-person orientation, and this is why statements such as *This cake is tasty* is true for only the individual making that statement.

Nevertheless, we understand that while utterances such as *That strawberry is red* versus *That strawberry is blue* obligatorily have opposite truth values, utterances such as *That game is fun* versus *That game is not fun* can both be true, if they are 'anchored' to two different speakers. If two different speakers make these seemingly contradictory statements, both of which are 'right' to each individual speaker, this is a so-called instance of faultless disagreement.

Kennedy (2013) states that faultless disagreement between PPTs arises not through the referent of the predicate -- the semantic content of the predicate in reference to an item -- but instead due to the truth value of a PPT changing depending on the judge's opinion when using that subjective predicate to make an utterance about a referent. Stojanovic (2007) discusses semantic competence, writing that "speakers of English are semantically competent with predicates of taste: they master their meaning and truth conditions", meaning that the speakers who are disagreeing with one another know and understand the content of the words which they are using to disagree. Though this phenomenon is an instance of difference in preference, there is an intuition that it is a matter of disagreement. While linguists argue about calling this an instance preferential difference versus an instance of disagreement, we define it here as being an instance of faultless disagreement since neither speaker is outright wrong or right.

1.3 Children's Recognition of Subjectivity

In this study, we are less concerned with the argument of whether the subjective property holds, but instead if children can acknowledge that one of two speakers in an instance of faultless disagreement can be more 'trusted' than the other. Mature conversationalists are able to make these pragmatic inferences, understanding that two judges making contrasting opinion statements about an item in regard to their opinions about them can both be correct.

Instances of faultless disagreement also go beyond predicates of personal taste such as *tasty* and *fun*, and can occur with gradable adjectives such as adjectives of size (i.e. *big, short)* and texture (i.e. *spotted, striped*). Foushee and Srinivasan (2017) used such adjectives in their study, where they tested four- and five-year-old children's sensitivity to the subjectivity of utterances which created instances of faultless disagreements. In particular, they used novel nouns paired with familiar absolute and relative gradable adjectives, as well as subjective adjectives and predicates of personal taste. The instances of faultless disagreement which adult and child participants were presented with occurred in an environment where they were able to see that the speakers 'saw' two different arrays of the novel objects. They could see that one speaker was only able to 'see' short sticks, and the other was only able to 'see' tall sticks. Children as young as four years of age were able to permit faultless disagreement to occur between speakers in the cases of gradable adjectives (in particular relative gradable adjectives) and subjective adjectives, such as *pretty* and *tall*, recognizing that the speakers have different background knowledge and can have differing opinions about objects and their properties (Foushee & Srinivasan 2017). In addition, the older the child, the more likely they were to permit faultless disagreement.

1.4 Current Research

In our study, we decided to take Corriveau et al.'s 2013 experiment one step further, in order to properly investigate how extralinguistic factors such as accuracy and accents are used by children to evaluate instances of faultless disagreement. We have done so by further manipulating the accuracy conditions from Corriveau et al.'s 2013 experiment. While we replicated the conditions in which each speaker was 100%/0% accurate, we discarded the 75%/25% conditions and replaced this with a condition in which each speaker is 50% accurate. By introducing a condition in which each speaker is 50% accurate, we were able to find evidence supporting how preferences for a familiar accent affects children in an at-chance scenario. Furthermore, we introduced a new phase of faultless disagreement in our study, to investigate more than just speaker preferences. We had done so because introducing children to a phase of faultless disagreement trials would allow for research on the effect of accents versus accuracy on children's understanding of subjectivity and evaluation of truth values within subjective scenarios.

2. Experiment

The purpose of this experiment was to replicate and extend the findings of Corriveau, Kinzler, & Harris (2013) to a new phenomenon: instances of faultless disagreement with predicates of personal taste (PPTs). As in their study, we manipulated the accent of the speakers in addition to their accuracy rate in order to determine the effect of these factors on children's speaker preferences and perceptions of speaker reliability in post-accuracy trials. In addition, we asked whether, in cases in which both speakers could be truth conditionally correct but there is a layer of "subjectivity" provided by an adjective, children would opt to agree with the less accurate, unfamiliar accented speaker or with the more accurate, familiar accented speaker, as

they did with object labels, which are not subject to faultless disagreement. To test this hypothesis, we introduced a new, experimental phase featuring PPTs.

2.1 Participants

Participants were 49 children. When analyzing results, we split the children up into younger than 48 months and older than 48 months; there were 16 younger children (34-47 months; 10 females, 6 males) and 33 older children (49-70 months; 16 females, 17 males). This age range was the same as that in Corriveau, Kinzler, & Harris (2013). Children were monolingual, native speakers of English, who speak or hear another language in their household less than 10% of the time as determined via parental report. These children were recruited from Central New Jersey preschools and daycares. The July 1, 2018 U.S. Census information indicates that about 20.6% of the population in the New Brunswick, NJ area is Hispanic or Latino, and the 2000 U.S. Census about language indicates that the most prevalent language spoken at home other than English is Spanish, with about 5-19.9% of residents five and up being Spanish speakers in the central New Jersey area. Given this information, we assumed that all children have been exposed to Spanish accents to at least some minimal degree in their environment. There were also 61 adult controls: 49 undergraduate students in introductory Linguistics or Cognitive Science classes and 12 volunteers from the sorority Phi Sigma Sigma at Rutgers University – New Brunswick. We also assumed that these participants have been exposed to Spanish accents; according to Rutgers University – New Brunswick's Fall 2019 Diversity Statistics, full-time undergraduate enrollment includes 12.7% Latino students. These undergraduate students received extra credit or a participation point for their participation.

2.2 Method

The experimental materials and procedure were identical for both the child and adult participants.

2.2.1 Stimuli

2.2.1.1 Auditory Stimuli

While Corriveau et al. (2013) presented participants with videos of two bilingual speakers, we pre-recorded a native speaker of American English and a native speaker of Peruvian Spanish (speaking English with a perceptible Spanish accent) and presented these sound files alongside two cartoon images of owls. See Figure 1. We did this to ensure that participants were not guided by visual perceptual cues, and instead focused on the auditory perception of speech and accent.

In order to familiarize the participants to the speakers' accents, we exposed them to each speaker reading a brief 30-40 passage from a *Curious George* book. The specific passage was chosen because it highlighted phonological differences between the two accents. See Appendix A for the passages and Appendix B for phonological differences.

The speakers were recorded in one session, delivering the prompts in Table 1. Sound files were later reviewed, sliced, and normalized to 68 dB in Praat, then inserted into PowerPoint slides with the visual stimuli.

Table 1. Stimuli used in experimental phases. Accurate speaker indicated with *. For the 50% condition, the speakers took turns with the accuracy within the block.[2]

Phase	Speaker 1*	Speaker 2	Object/property
Pre-Accuracy	*That's a yiff.*	*That's a crut.*	long orange and blue plastic toy
	That's a linn.	*That's a zeb.*	tall green plastic toy with handles
	That's a nevi.	*That's a chab.*	nubby orange rubber dog toy
	That's a mogo.	*That's a hups.*	lime green plastic object with holes
Accuracy	*...strawberry.*	*...grape.*	strawberry
	...horse[3]*.*	*...chicken.*	toy horse
	That ... is red.	*That ... is white.*	red toy train
	...yellow.	*...blue.*	yellow flower
	...not spotted.	*...spotted.*	purple ball in red box
	...striped.	*...not striped.*	striped sock in beige cloth bag
Post-Accuracy	*...a tulver.*	*...a spoov.*	green plastic toy with tripod in red gift box
	...a boskot.	*...a modi.*	blue stick with fuzzy pompon end in yellow and brown tote bag
Faultless Disagreement	*...fun.*	*... boring.*	[game] in brown box
	...not nice.	*...nice.*	[shirt] in blue gift bag
	...yucky.	*...yummy.*	[snack] in green box
	...pretty.	*...not pretty.*	[picture] in yellow drawstring bag

2.2.1.2 Visual Stimuli

Visual stimuli were paired with auditory stimuli and were presented via PowerPoint slides on a Macbook Pro with a 17" screen. Target objects were jpeg pictures of real objects (e.g., a toy horse, a flower, a strawberry), not clipart. See Table 2. Novel objects used in the Pre- and Post-Accuracy Phases were taken from the 'novel object and unusual name' (NOUN) database (Horst & Hout, 2016, http://www.sussex.ac.uk/wordlab/noun).

[2] Within conditions, we counterbalanced all novel labels and predicates of personal taste. The accuracy phase and the visual stimuli stayed consistent across conditions.

[3] Since the accented speaker did not always audibly produce the word-final [s]s (e.g. for *nice*), we spliced together a sound segment [s] from the other productions. Listening to the sound files revealed no indication of unnaturalness.

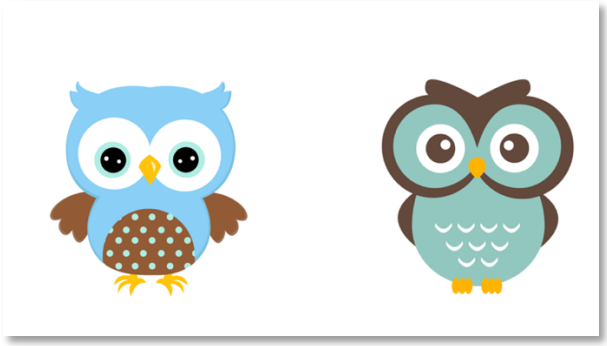
Table 2. Trial structure for four experimental phases, following Accent Familiarization

	Phase			
	pre-accuracy	accuracy	post-accuracy	faultless disagreement
initial				
final				

2.2.2 Procedure

Participants were run individually. For children, this was in a quiet space in their school. For adults, this was either in a quiet room in the lab or in a quiet room in a dorm. Each experimental session had the same structure. First, the experimenter introduced the two speakers on the screen (two owls): Miss Owl (left) and Señorita Buho (right). See Figure 1.

Figure 1. Introductory Slide.



The session then proceeded to a series of 5 distinct phases in a fixed order: Accent Familiarization, Pre-Accuracy, Accuracy, Post-Accuracy, and Faultless Disagreement. Participants were randomly assigned to one of six between-subject conditions, which depended

on speaker accuracy: Spanish 100% - English 0% (SP100/ENG0); Spanish 0% - English 100% (SP0/ENG100); Spanish 50% - English 50% (SP50/ENG50). Each condition had two versions, in order to counterbalance lexical items, valence of PPTs in the Faultless Disagreement Phase, and the order of speaker in the phases where participants did not select whom they preferred to hear from first (Accuracy and Faultless Disagreement).

Accent Familiarization Phase

The experiment began with an Accent Familiarization Phase. The experimenter introduced the two owls on-screen and said, "Do you see these two owls? They're each going to tell you a story. I want you to listen very carefully." Each owl read approximately 30-40 seconds of the same passage from *Curious George and the Firefighters*. As they read, each page was presented to the participant on screen, along with a small image of the owl that was speaker in the lower right-hand corner. See Appendix A for slides. Miss Owl went first, followed by Señorita Buho. Following the two passages, the experiment then proceeded to the Pre-Accuracy Phase.

Pre-Accuracy Phase

During the Pre-Accuracy phase, participants were shown a series of novel objects selected from the 'novel object and unusual name' (NOUN) database (Horst & Hout, 2016, http://www.sussex.ac.uk/wordlab/noun). For each, participants were asked, "Do you know what this is called?", as in Corriveau et al. (2013). Their response was recorded. Participants were told that one of the speakers (owls) probably knows what it is called, and participants were asked who they wanted to hear from first. This choice was recorded. A short auditory clip from each of the speakers was played, beginning with the owl the participant selected. Each utterance was in the form of, "That's a(n) N." See Table 3 for phase structure.

After hearing from both owls, participants were asked who they thought was right. Participants were presented with a booklet in which both owls were pictured on each (laminated) page. They were trained to give the owl who was right a ‘check’, while the other owl received an ‘X.’ Both of the owls therefore received some sticker. See Figure 2 for a sample page. For the first two trials the experimenter aided the participant in placing the stickers on the page, for the next two trials the participant did so on their own. There were four trials total. The experiment then moved on to the Accuracy Phase.

Figure 2. Sample booklet page, with Velcro stickers assigned.

Table 3. Pre-Accuracy Phase Structure.

Phase structure: Pre-Accuracy

initial		final
		
Do you know what this is?	Who do you want to hear from first? (both novel object names)	Who do you think is right?

Accuracy Phase

The experimenter began the Accuracy Phase by saying that the speakers found some other things, and the participant might know about these things. Participants were reminded that the speakers could be right or wrong. For each trial, an object was presented in the center of the screen. Each owl provided a label for the object, one after the other, with the owl beginning the

first trial counterbalanced between participants. Participants did not select who went first in this phase. See Table 4 for phase structure.

Whereas Corriveau et al. (2013) included four trials, we included six: two nouns trials and four adjective trials. This was because our key phase, the Faultless Disagreement Phase, featured adjectives and object properties. Two of the adjective trials featured color terms. The other two adjective trials contained absolute minimal gradable adjectives. See Table 1. These adjective trials allow us to more gracefully transition from nominal labels to the PPTs in the last phase. The speakers' utterances with nouns were "That's a(n) N". With adjectives, they were "That N is [ADJ]". In addition, the last two trials in this phase introduced a container (a box, then a bag) in which the object was located, supporting the transition to the final two phases. Each owl peeked inside the container and described the object (in counterbalanced order), after which the object was revealed. This feature was intended to minimize any confusion or surprise in the Faultless Disagreement Phase. After the object was revealed, the participant was reminded of the speakers' statements and asked what the object is, and then asked who gets the check mark. After the third noun trial at the beginning of this phase, the participants were no longer asked who was right or wrong, but instead simply got the check or the X. For example, "*Miss Owl said it was (an) X. Señorita Buho said it was (a) Y.*" [in order] "*Who do you think is right? Who gets a check? Who gets an X?*". This was done because in the next phase, both speakers could be right while in disagreement when uttering PPTs. At the end of the six trials, participants continued on to the next phase. Participants were never informed of the accuracy of the speakers' statements.

Table 4. Accuracy Phase Structure.

Phase structure: Accuracy

initial		final
 That's a strawberry.	  That's a grape. 	
Do you know what this is?	(ENG: correct, SP: incorrect)	Who do you think is right?

Post-Accuracy Phase

As in Corriveau et al. (2013), we included a Post-Accuracy Phase. The trials were similar to the Pre-Accuracy Phase, in that novel objects and novel nouns were used. Whereas Corriveau et al. (2013) included four such trials, we only included two given the additional accuracy trials and faultless disagreement trials that followed in the experimental session. Including this phase, however, provided us with the opportunity to replicate their findings, in which five-year-old children preferred the *unaccented* speaker in the Pre-Accuracy Phase, but preferred the *accurate* speaker in the Post-Accuracy Phase. For these two trials, we asked the participants who they'd like to hear from, as in the Pre-Accuracy Phases and as in Corriveau et al. (2013). In addition, the trials featured a box/bag followed by the object reveal, as seen in the last two trials of the Accuracy Phase. See Table 5 for phase structure.

Table 5. Post-Accuracy Phase Structure.

Phase structure: Post-Accuracy

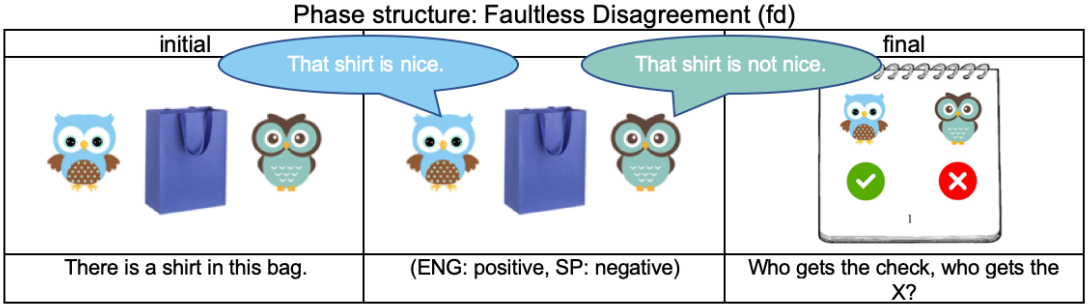
initial		final
That's a tulver. 	  That's a spoov. 	
I don't know what's in this box, but I'm sure the owls know.	Do you know what this is called? (both novel object names)	Who gets the check, who gets the X?

Faultless Disagreement Phase

The last phase, the Faultless Disagreement Phase, was comprised of four trials. The structure was the same as the last two trials of the Accuracy Phase and Post-Accuracy Phase, where participants see a box or bag. However, this time, participants were told that there is an object in the box/bag (for which the experimenter provided a nominal label), but the owls would state what they thought about the object. As in the previous phases, participants decided which owl got a 'check' and which one got an 'X'. New to this phase, the experimenter asked the participant for a justification. Owl order was as in the Accuracy Phase. See Table 6 for phase structure.

Table 6. Faultless Disagreement Phase Structure.

Phase structure: Faultless Disagreement (fd)



2.3 Predictions

We generated the following predictions. First, we predicted that participants would endorse the American English accented speaker during the Pre-Accuracy Phase. We then predicted endorsement to track accuracy in the SP100/ENG0 and SP0/ENG100 conditions. The preference for the familiar speaker could tip the scales in the SP50/ENG50 condition, or else participants could be at chance. We predicted that performance in the Faultless Disagreement Phases would track accuracy or otherwise be influenced by a preference for the familiar accent.

2.4 Results

2.4.1 Data preparation and analysis

Data preparation and analyses were performed using Microsoft Excel as well as statistical analyses by the Office of Statistical Consulting, a professional service of the Department of Statistics.

First, we analyzed participants' responses by looking at their preferences in the Pre- and Post-Accuracy Phases along with their endorsements in each phase. We also recorded whether the participant knew the objects being presented (coding either 'yes' or 'no'). In addition, we coded the participant's justifications for their choices in the Faultless Disagreement Phase on whether or not they had relied on accuracy by giving a response which identified the previous accuracy as being important to their endorsement decision. This data had been recorded by the research assistant running the experiment using the Experimenter Script (see Appendix C). The data was then coded using '1' for the familiar accented owl (Miss Owl) and '0' for the unfamiliar accented owl (Señorita Buho).

This nonparametric data was then run through a Generalized Linear Mixed Model (GLMM), performing an analysis with within and between measures. Statistical analyses were performed with the adult data and that of the children older than 48 months, as the data for the younger children are still in progress. We obtained results for preference, endorsement, and PPT valence.

2.4.2 Experimental results

For each participant, we looked at the owl preference (choosing to hear from Miss Owl versus Señorita Buho) in the Pre- and Post-Accuracy Phases, and the owl endorsement (making a choice about which owl is 'right' or who gets the check, who gets the 'X') in all phases. The

results for the adult preference can be seen in Figure 3. The results for the adult endorsement can be seen in Figure 4. The results for children (>48 months) can be seen in Figure 5 and Figure 6, and the results for children (<48 months) can be seen in Figure 7 and Figure 8.

2.4.2.1 Adults

Preference

Across all 3 conditions in Pre-Accuracy Phase, adult participants preferred to hear from Miss Owl between 61.9-65.8%; this was more than at-chance. See Figure 3. After experiencing the Accuracy Phase in the condition in which Señorita Buho was 100% correct (SP100/ENG0), in Post-Accuracy, their preference for Miss Owl decreased to 38.1%, whereas when Miss Owl was 100% correct (SP0/ENG100), their preference increased to 76.2%. Both of these results are consistent with what was anticipated after the adults experiencing those respective levels of accuracy. After experiencing the Accuracy Phase in the condition in which each owl was 50% correct (SP50/ENG50), the adult's preferences increased slightly to 65.8%, meaning they preferred to hear from Miss Owl rather than rely entirely on accuracy when accuracy was at chance.

Endorsement

Across all 3 conditions in Pre-Accuracy Phase, the adults chose to endorse Miss Owl between 64.3-69.7% of the time. See Figure 4. This was consistent with the preference choices. After experiencing the condition in which Señorita Buho was 100% correct (SP100/ENG0), they chose to endorse Miss Owl only 21.4% of the time in the Post-Accuracy Phase. In the following Faultless Disagreement Phase, they chose Miss Owl 21.4% of the time. When Miss Owl was 100% correct (SP0/ENG100), they chose to endorse Miss Owl 71.4% of the time and in the Faultless Disagreement Phase, 66.7% of the time. When accuracy was at chance (SP50/ENG50),

the adults chose to endorse Miss Owl 68.4% of the time and in the following Faultless Disagreement Phase, they chose Miss Owl 56.6% of the time.

Overall Performance

Although it had been anticipated that adults would be able to overcome any accent bias that they may have, this data provides evidence that adults are more likely to endorse the familiar accented speaker rather than rely entirely on accuracy when accuracy was at chance. The SP50/ENG50 trials is especially indicative of this.

Figure 3. Adult Preference Graph.

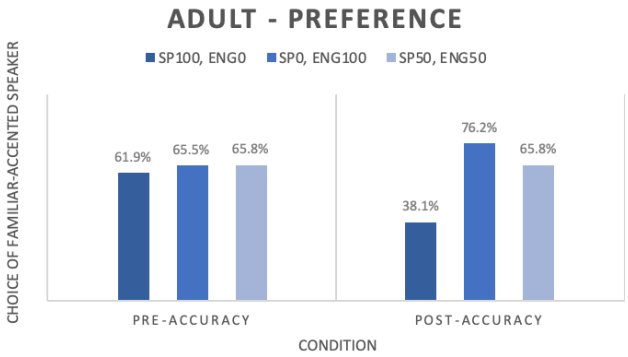
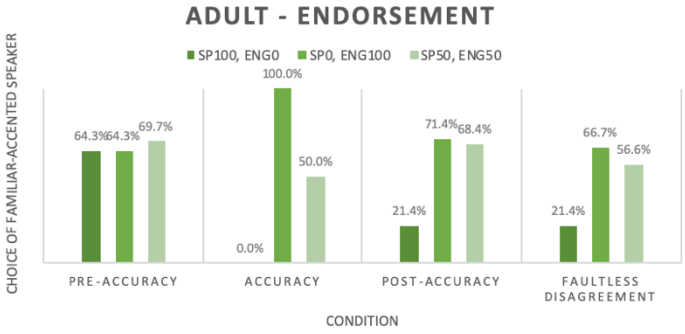


Figure 4. Adult Endorsement Graph.



2.4.2.2 Children (>48 months)

Preference

Across all 3 conditions in Pre-Accuracy Phase, the older children preferred to hear from Miss Owl between 58.3-70.8%. See Figure 5. After experiencing the Accuracy Phase in the condition in which Señorita Buho was 100% correct (SP100/ENG0), in Post-Accuracy, their preference for Miss Owl decreased to 50%, whereas when Miss Owl was 100% correct (SP0/ENG100) their preference increased to 66.7%. After experiencing the Accuracy Phase in the condition in which each owl was 50% correct (SP50/ENG50) the children's preferences increased to wanting to hear from Miss Owl 75% of the time.

Endorsement

Across all 3 conditions in Pre-Accuracy Phase, the older children chose to endorse Miss Owl overwhelmingly, between 72.9-81.3% of the time. See Figure 6. After experiencing the condition in which Señorita Buho was 100% correct (SP100/ENG0) they still chose to endorse Miss Owl 55.6% of the time, and in the Faultless Disagreement Phase, they chose her 61.1% of the time. When Miss Owl was 100% correct (SP0/ENG100), they chose to endorse her 75% of the time and in the Faultless Disagreement Phase, 58.3% of the time. After experiencing 50% accuracy (SP50/ENG50), the children chose to endorse Miss Owl 75% of the time and in the Faultless Disagreement Phase, 58.3% of the time.

Overall Performance

These results were anticipated and provide evidence that children turn to the familiar accented speaker when asking for object labels and are much more likely to do so than adults. This data provides further evidence for children relying heavily on accent rather than accuracy, especially in the SP50/ENG50 condition in which accuracy was at chance. In addition, the

children were unable to correctly track accuracy in the Accuracy Phase. We do see an odd trend in the Faultless Disagreement Phase; children did not seem to rely on accent nor accuracy. This led us to believe that there was a third extralinguistic factor at play.

Figure 5. Children (>48 months) Preference Graph.

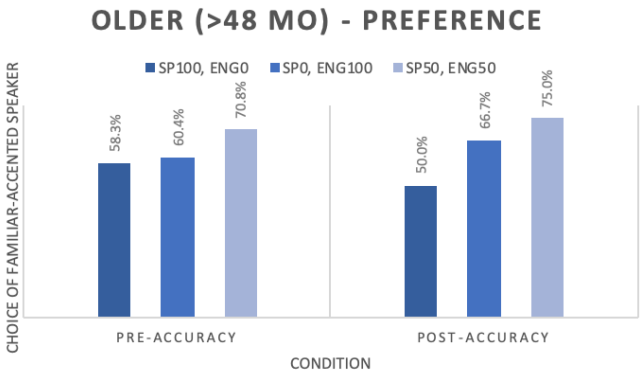
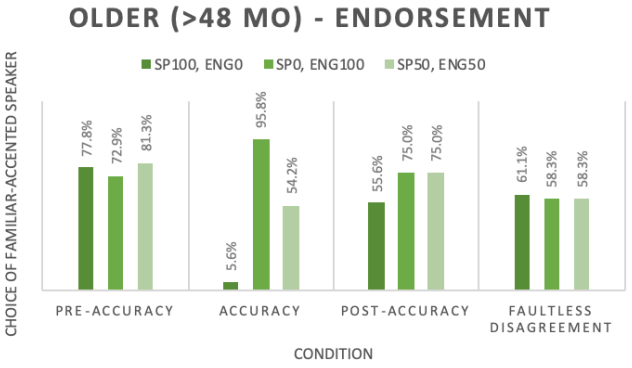


Figure 6. Children (>48 months) Endorsement Graph.



2.4.2.3 Children (<48 months)

Preference

Across all 3 conditions in Pre-Accuracy Phase, the younger children preferred to hear from Miss Owl between 57.1-80% of the time. See Figure 7. After experiencing the Accuracy Phase in the condition in which Señorita Buho was 100% correct (SP100/ENG0), in Post-Accuracy, the younger children continued to prefer to hear from Miss Owl 70% of the time,

whereas when Miss Owl was 100% correct (SP0/ENG100), their preference for hearing from her increased slightly to 71.4%. After experiencing the Accuracy Phase in the condition in which each speaker was 50% correct (SP50/ENG50) the children's preferences stayed at exactly 50%.

Endorsement

Across all 3 conditions in Pre-Accuracy Phase, the younger children chose to endorse Miss Owl between 60-68.8% of the time. See Figure 8. After experiencing the condition in which Señorita Buho was 100% correct (SP100/ENG0) the children continued to choose to endorse Miss Owl 80% of the time, and in the Faultless Disagreement Phase, 75% of the time. When Miss Owl was 100% correct (SP0/ENG100), their endorsement of Miss Owl surprisingly decreased to 57.1% of the time and in the Faultless Disagreement Phase they also endorsed her 57.1% of the time. After experiencing the SP50/ENG50 condition, the children chose to endorse Miss Owl exactly 50% of the time and once again in the Faultless Disagreement Phase.

Overall Performance

The results of the younger children are incomplete and still in progress, as a global pandemic disrupted data collection. While the results are still relevant to report, the data does not provide sufficient evidence for distinct patterns of this younger age group, which is the cause for the interesting patterns that are seen.

Figure 7. Children (<48 months) Preference Graph.

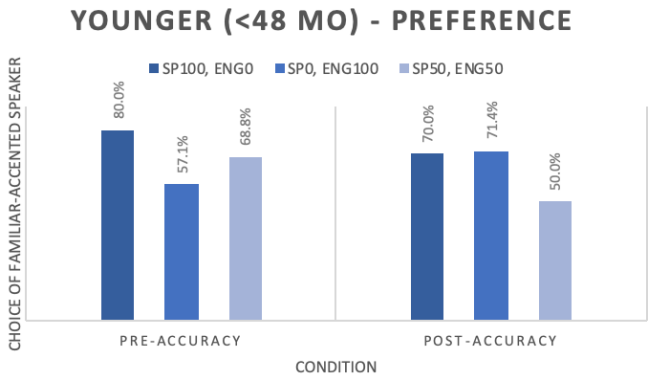
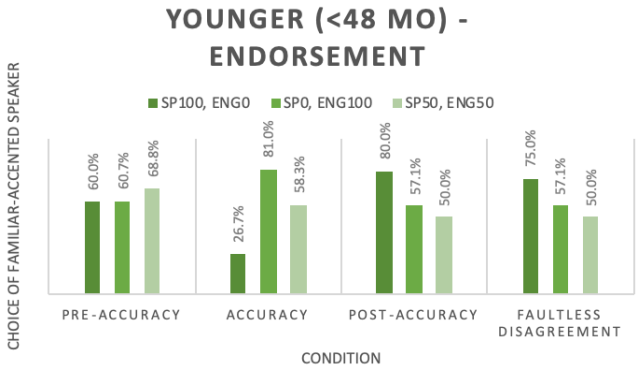


Figure 8. Children (<48 months) Endorsement Graph.



2.4.2.4. Faultless Disagreement Phase Findings

Given these seemingly inconclusive patterns in the Faultless Disagreement Phase in most of the age groups, we assumed that an additional extralinguistic factor was at play. After analyzing the data, we noticed that the speaker choices were not due to accent or accuracy, it was due to speaker positivity. In particular, children were choosing to endorse the speaker who was making the positive statement. See Figure 9 for overall choices. The younger children chose the positive PPT in the faultless disagreement trials between 56.3-85% of the time, while the older children chose the positive PPT in the faultless disagreement trials even more often, between 70-87.5% of the time. Adults chose the positive PPT in the faultless disagreement trials between 34.6-55.8% of the time. See Figure 10 for the individual choices of the younger children, and Figure 11 for those of the older children. See Figure 12 for the adult choices, as a comparison.

Figure 9. Overall Positive PPT Graph.

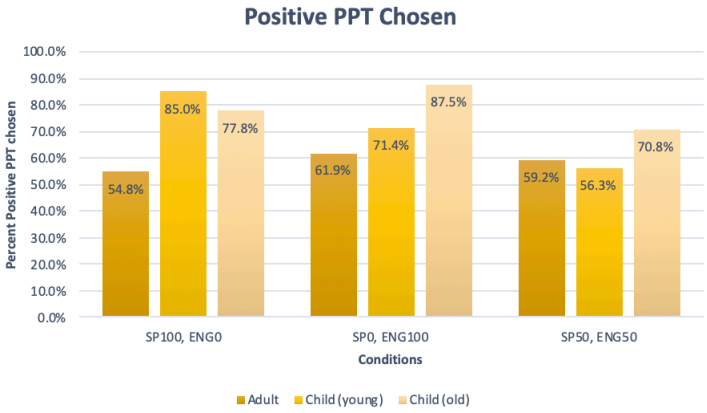


Figure 10. Children (<48 months) Chosen Positive PPT Graph.

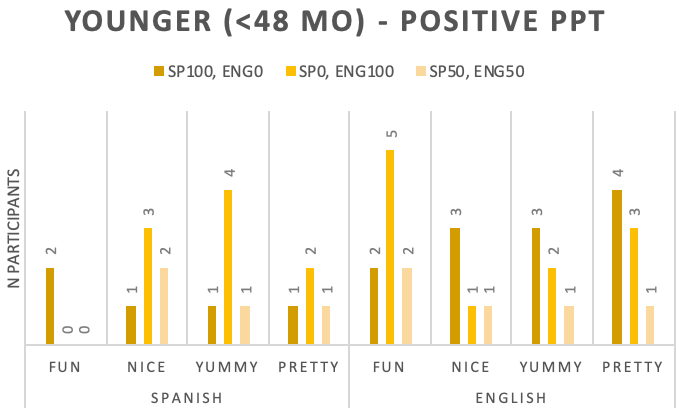


Figure 11. Children (>48 months) Chosen Positive PPT Graph.

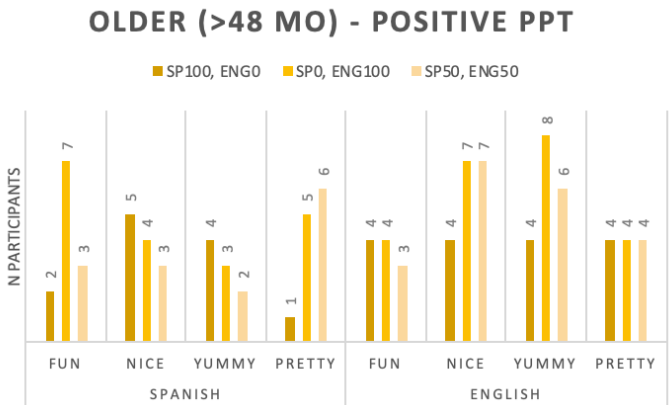
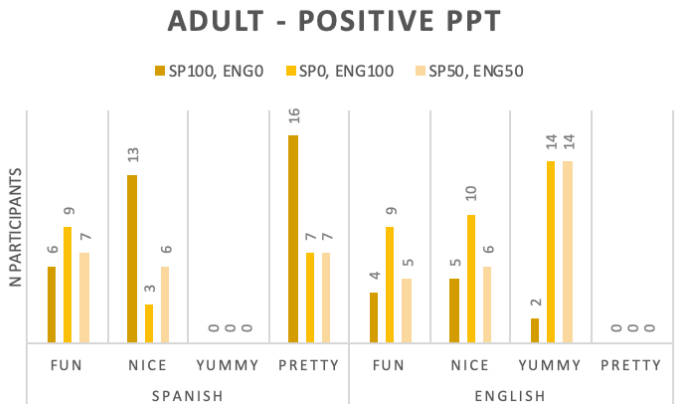


Figure 12. Adult Chosen Positive PPT Graph.



2.4.2.5 Statistical comparison of overall performance

We examined three factors: age, condition, and phase. The Generalized Linear Mixed Model (GLMM) provided evidence for the factors within three categories: preference, endorsement, and PPT valence.

Preference

We first asked whether children most often preferred to hear from Miss Owl, the familiar accented speaker in the Pre- or Post-Accuracy phases in a certain condition. There was a highly significant effect of age group, condition, and phase, with the children showing preference for Miss Owl in the Post-Accuracy Phase in the SP0/ENG100 condition (B = 0.60347, SE = 0.20794). There was also a moderately significant effect across conditions, with an effect in the SP100/ENG0 condition (B = -0.51786, SE = 0.21576). See Table 7.

Table 7. GLMM result for Preference.

```
GLMM result for CHILD_preference
Call:
glmm(fixed = response ~ age_group + condition + phase, random = list(~0 +
    lab_id), varcomps.names = c("participants"), data = CHILD_p,
    family.glmm = bernoulli.glmm, m = 10^4, debug = TRUE)


Link is: "logit (log odds)"

Fixed Effects:
                   Estimate Std. Error z value Pr(>|z|)
(Intercept)         0.60347    0.20794   2.902  0.00371 **
age_groupchild      0.01786    0.18832   0.095  0.92446
conditionSP100_ENG0 -0.51786    0.21576  -2.400  0.01639 *
conditionSP50_ENG50  0.09402    0.22103   0.425  0.67058
phasepre_acc         0.10477    0.18652   0.562  0.57432
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1


Variance Components for Random Effects (P-values are one-tailed):
            Estimate Std. Error z value Pr(>|z|)/2
participants 0.020293   0.006665   3.045    0.00116 **
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```

Endorsement

Next we asked whether children most often endorsed Miss Owl, the familiar accented speaker in the Pre- or Post-Accuracy phases in a certain condition. Once again, there was a highly significant effect of age group, condition, and phase, with the children showing preference for Miss Owl in the Pre-Accuracy in the SP0/ENG100 condition (B = 1.00215, SE = 0.18370). There was also a moderately significant effect of age group overall, with children endorsing Miss Owl more often than adults. (B = 0.36154, SE = 0.17540). In addition, there was a highly significant effect across conditions in SP100/ENG0 (B = -2.25889, SE = 0.19201) and in SP50/ENG50 (B = -0.93383, SE = 0.17961). The Pre-Accuracy Phase also had a highly significant effect on endorsement (B = 0.90362, SE = 0.15942). See Table 8.

Table 8. GLMM result for Endorsement.

```
GLMM result for CHILD_endorsement
Call:
glmm(fixed = response ~ age_group + condition + phase, random = list(~0 +
    lab_id), varcomps.names = c("participants"), data = CHILD_e,
    family.glmm = bernoulli.glmm, m = 10^4, debug = TRUE)


Link is: "logit (log odds)"

Fixed Effects:
                  Estimate Std. Error z value Pr(>|z|)
(Intercept)        1.00215    0.18370   5.455 4.89e-08 ***
age_groupchild     0.36154    0.17540   2.061   0.0393 *
conditionSP100_ENG0 -2.25889    0.19201 -11.765  < 2e-16 ***
conditionSP50_ENG50 -0.93383    0.17961  -5.199 2.00e-07 ***
phasefd            -0.06129    0.15075  -0.407   0.6843
phasepost_acc       0.30465    0.19248   1.583   0.1135
phasepre_acc        0.90362    0.15942   5.668 1.44e-08 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```

PPT Valence

After noting the effect of PPT positivity in the Faultless Disagreement Phase, we examined whether there was any effect of age group or condition on the choice of a statement which contains a positive valence. There was a moderately significant effect of age group and condition, with the children showing preference for the positive PPT in the SP0/ENG100 condition (B = 0.5487, SE = 0.2467). A highly significant effect was found in age group overall with children being most likely to choose a statement with a positive PPT (B = 1.0655, SE = 0.2685). There was no effect across conditions. See Table 9.

Table 9. GLMM result for Valence.

```
GLMM result for CHILD_valence
Call:
glmm(fixed = response ~ age_group + condition, random = list(~0 +
    lab_id), varcomps.names = c("participants"), data = CHILD_v,
    family.glmm = bernoulli.glmm, m = 10^4, debug = TRUE)


Link is: "logit (log odds)"

Fixed Effects:
                   Estimate Std. Error z value Pr(>|z|)
(Intercept)          0.5487     0.2467   2.224   0.0261 *
age_groupchild       1.0655     0.2685   3.968 7.25e-05 ***
conditionSP100_ENG0  -0.4001     0.2942  -1.360   0.1738
 conditionSP50_ENG50  -0.2632     0.3194  -0.824   0.4099
 ---
 Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```

2.4.3 Discussion

In our experiment, we had expanded upon that of Corriveau, Kinzler, and Harris (2013) by adding an additional layer of subjectivity through the introduction of instances of faultless disagreement, to assist in the analysis of which extralinguistic factors are used throughout the process of language development. The previous research by Corriveau et al. (2013) had shown that children are able to overcome their preferences for speakers with familiar accents when that speaker proves to be inaccurate and they are confronted with an accurate speaker who happens to have an unfamiliar accent. Their study indicated that children over the age of four years (48 months) are most successful at this task, while younger children rely mostly on accent when making their preference and endorsement decisions. Our results pattern similarly to those of Corriveau et al (2013). Our data provided evidence that the older children were able to somewhat track accuracy in the SP100/ENG0 and SP0/ENG100 conditions, whereas in the SP50/ENG50 condition, those children relied on accent. The results of the younger children were less consistent, due to the lack of participants in that age group. However, for both age groups, the children were unable to correctly track accuracy within the Accuracy Phase, which indicated that the familiarity of a speaker's accent was more important to children than accuracy. The adults' results in the Accuracy Phase were immaculate; they were able to track accuracy without error when the objects were familiar. Despite this, in the SP50/ENG50 condition, the adults did not pattern at chance in the Post-Accuracy and Faultless Disagreement phases and were slightly more inclined to rely on accent. These results have proven that in all age groups, when it came to accuracy being at-chance, participants were simply more likely to prefer to hear from and endorse the familiar speaker, Miss Owl, though in varying levels of likelihood. Nevertheless, neither accent nor accuracy seemed to matter in the Faultless Disagreement Phase, especially for

children. When considering the data in the Faultless Disagreement Phase, we initially were identifying which of the two extralinguistic factors, accent or accuracy, participants were relying on. After examining the data, we noted that there was a third extralinguistic factor that had come into play – that of predicate of personal taste (PPT) positivity. Children, and even some adults, tended to choose the 'nice' speaker over the familiar or accurate speaker.

Given these results, we see that children are not as good at tracking accuracy as previous research has shown. Why do the conclusions of this study differ drastically from those of Corriveau et al. (2013)? Why are even the older children not tracking accuracy as well as they had been in previous research? We see that once a layer of subjectivity is introduced, participants are likely to recruit additional extralinguistic factors in order to make their decisions about who to endorse. While accent familiarity and the accuracy of a speaker is important, the 'niceness' of a speaker is also very important to listeners. But, what accounts for the positivity of a statement as being more important than an in-group classification, or a speaker who has provided impeccable knowledge about object names? In attempting to answer these questions, we must turn to additional prior research about children and their preference for similar statements.

3. General Discussion

In investigating the hesitation of children in tracking the accuracy of speakers, we must look at the Accuracy Phase, where the accuracy tracking begins. Children were not willing to endorse the correct speaker in all of the trials; all ages made errors in the Accuracy Phase, with younger children making the most errors which conflicts with the evidence provided by Corriveau et al. (2013) that children are able to flawlessly track accuracy. Only the adults were able to do so without errors. This is an indication that children rely on their preferences more than accuracy, as they were choosing the familiar speaker despite there being an explicitly

correct and incorrect speaker. Thus, this study provides evidence that while children do track accuracy, they rely heavily on their preferences when choosing who to turn to when asking for object labels and who they identify as being 'right'. This ability to correctly track accuracy and overcoming an accent preference develops as we develop more complex language abilities.

This study also allowed us to identify that children are recruiting more extralinguistic factors than we initially thought. While they do recruit in-group/out-group classifications and track accuracy to some extent, children weigh the conventionality of speaker statements within a community, and this was proven through the positivity bias that children have. This bias does not come as such a surprise, as previous research has shown that children consider the conventionality of speaker statements when making decisions about whether that speaker is correct or mistaken. In Holubar & Markman's study (2013), children ages three to five as well as adults were asked to identify whether speakers making unconventional statements were 'making a mistake' or 'being silly', and if the statements were incorrect. Children and adults alike were rejecting unconventional statements such as *I don't like ice cream* or *Ice cream is yucky*, as they go against our community's social norms. In our society, we tend to praise people who are polite and make positive statements, which is why children, and some adults, side with the speaker who is more positive. However, we also (try to) teach children to understand and respect the opinions of other people. Repacholi and Gopnick's study (1997) found that children as early as 18 months of age are able to understand the desires of other people and offer food to experimenters who expressed a positive affinity to a food, despite that food conventionally being unappetizing to children (i.e. broccoli versus crackers). This would mean that while preschoolers have developed their understanding that positive statements are more appropriate and socially acceptable, they should have already learned that individuals can have different desires and opinions.

4. Conclusion

The results of this study have provided evidence that, as language and our cognitive abilities develop, we acquire additional methods for making decisions about which speakers we should turn to when making choices about whom to trust regarding learning. The first intuition of a three-year-old is to turn to that speaker who is most similar to them – the speaker that has a familiar accent. There is no reason to trust anyone with any other accent, despite having had a certain level of exposure to that accent (Kinzler et al. 2011, Paquette-Smith et al. 2019). However, as the three-year-old learns and develops their language abilities in preschool and in the real world, they become better at recognizing the conventionality of speaker statements and, as the results of this study indicate, they are more eager to side with a speaker who has made positive statements (Holubar & Markman 2013).

Unlike previous research, this study has provided evidence that children are actually not as good at recognizing and recruiting speaker accuracy for making decisions about speaker endorsement as we had originally thought. Despite children being able to make predictions about speakers based off of their prior accuracy, our study has proven that they are not likely to recruit accuracy in making decisions about endorsement in subjective scenarios such as the instances of faultless disagreement (Birch et al. 2008, Brosseau-Liard & Birch 2010, Corriveau et al. 2013). However, our research initially did not anticipate children employing this new, third extralinguistic factor of speaker positivity. Due to this confound, we were not able to have been as thorough in examining a true instance of faultless disagreement in which children are only able to recruit either accent or accuracy in making their endorsement decision.

Henceforth, we propose ideas for further research to create a scenario in which one could examine faultless disagreement without a confounding positivity bias. In order to focus solely on

accent and accuracy, the speaker statements must not include an adjective. Instead, the statement should feature a novel adjective, as such statements will eliminate any adjective bias and will allow children to rely only accent or accuracy in making their decisions. Such speaker statements could be: *This game is spoovy* and *This game is wuggy*. If, instead, one is interested in further exploring the positivity bias and predicates of personal taste (PPTs), one could expand upon the instance of faultless disagreement in manipulating the noun. By replacing the noun in the speaker statement with a novel noun, creating statements such as *This tulver is fun* and *This tulver is boring*, the conventionality bias that the object carries would be eliminated (i.e. games are supposed to be fun, snacks are supposed to be yummy). One could also eliminate the noun all together, providing statements such as *This is fun* and *This is boring.*

While previous research has made advances to understanding the extralinguistic factors that children employ throughout their process of language development, our discovery of the positivity bias indicates that there might be more unanticipated extralinguistic factors that are being used in children's evaluation of speakers. While our confound of the positivity bias leaves unanswered questions about how children are able to assign truth values to true instances of faultless disagreement, as well as questions about children's use of accent and accuracy in subjective scenarios which lack a PPT, the proposed expansions upon this study hope to answer these questions. Research of this kind would provide additional evidence for the sophisticated choices (rather than previously assumed accent-biased choices) that children make when confronted with speakers who don't speak quite like them – scenarios which are becoming more and more common as the world around us becomes more and more diverse.

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Appendices

Appendix A: Passage from *Curious George and the Firefighters*

Title Page

Pg. 1

This is George. He was a good little monkey and always very curious. Today George and his friend the man with the yellow hat joined Mrs. Gray and her class on their field trip to the fire station.

Pg. 2

The Fire Chief was waiting for them right next to a big red fire truck. “Welcome!” he said, and he led everyone upstairs to begin their tour.

Pg. 3

There was a kitchen with a big table, and there were snacks for everyone. The Fire Chief told them all about being a firefighter. George tried hard to pay attention, but there were so many things for a little monkey to explore.

Appendix B: List of differences between American and Hispanic accented English

American English	Hispanic English
/ɪ/	/i/
/ʌ/	/a/
/ʊ/	/u/
/ɹ/	/ʀ/
/v/	/b/
/ʃ/	/s/
/θ/	/t/
/ð/	/d/
/z/	/s/
/pʰ/, /tʰ/, /kʰ/	Lack of aspiration: /p⃗/, /t⃗/, /k⃗/
Word-final /d/, /g/, /v/	Devoiced to /t/, /k/, /f/
/st-/ cluster	Epenthesis of /ɛ/ to /st-/ cluster

Appendix C: Experimenter Script

Lab ID: _____ Date: ___ / ___ / _____
Child Name: _____ School: _____
Condition: SP100 EN0 A / SP100 EN0 B SP50 EN50 A / EN50 B SP0 EN100 A / SP0 EN100 B

Introduction:
Here are two owls!
This is Miss Owl.
This is Señorita Buho.

Accent Familiarization Phase:
(Both owls pictured)
Do you see these two owls? They're each going to tell you a story. I want you to listen very carefully.
(Miss Owl)
Let's listen to Miss Owl first.
(Señorita Buho)
Now let's listen to Señorita Buho.
(Both owls pictured)
Remember, this is Miss Owl (point) and this is Señorita Buho (point).

Pre-Accuracy Phase:

1. Miss Owl and Señorita Buho found some funny objects. Let's see what they found!

Do you know what this is called? **No** **Yes (if yes, correct them)**

I bet one of the owls probably knows what it is called! Who do you want to hear from first? **Miss Owl** **Señorita Buho**

Click on each owl

Who do you think is right? Let's give the owl that you think might be RIGHT a CHECK. Let's give the other one an X. **Miss Owl** **Señorita Buho**

2.

Do you know what this is called? **No** **Yes (if yes, correct them)**

I bet one of the owls probably knows what it is called! Who do you want to hear from first?

Miss Owl **Señorita Buho**

Click on each owl

Who do you think is right?
Let's give the owl that you think might be RIGHT a CHECK. Let's give the other one an X.

Miss Owl **Señorita Buho**

3.

Do you know what this is called?

No **Yes (if yes, correct them)**

I bet one of the owls probably knows what it is called! Who do you want to hear from first?

Miss Owl **Señorita Buho**

Click on each owl

Who do you think is right?
Let's give the owl that you think might be RIGHT a CHECK. Let's give the other one an X.

Miss Owl **Señorita Buho**

4.

Do you know what this is called?

No **Yes (if yes, correct them)**

I bet one of the owls probably knows what it is called! Who do you want to hear from first?

Miss Owl **Señorita Buho**

Click on each owl

Who do you think is right?
Let's give the owl that you think might be RIGHT a CHECK. Let's give the other one an X.

Miss Owl **Señorita Buho**

Accuracy Phase:
Miss Owl and Señorita Buho found some other things. You might know about these things. The owls might be RIGHT, or they might be WRONG.
Let's see what they found!

5.

Do you know what this is called?

Yes **No**

Click on each owl, beginning with Miss Owl/Señorita Buho.

Miss Owl said it was a(n)_____. Señorita Buho said it was a(n)_____. What do you think it is?

Response: _____

Who do you think is right?

Miss Owl **Señorita Buho**

Let's give the owl that is right a check, and the other owl an X.

6.

Do you know what this is called?

Yes **No**

Click on each owl, beginning with Miss Owl/Señorita Buho.

Miss Owl said it was a(n)_____. Señorita Buho said it was a(n)_____. What do you think it is?

Response: _____

Who do you think is right?

Miss Owl **Señorita Buho**

Let's give the owl that is right a check, and the other owl an X.

7.

Can you describe this **train**?

Response: _____

Click on each owl, beginning with Miss Owl/Señorita Buho.

Miss Owl said it was a(n)_____. Señorita Buho said it was a(n)_____. What do you think it is?

Response: _____

Who do you think is right?

Miss Owl **Señorita Buho**

Let's give the owl that is right a check, and the other owl an X.

8.

Can you describe this **flower**?

Response: _____

Click on each owl, beginning with Miss Owl/Señorita Buho.

Miss Owl said it was a(n)_____. Señorita Buho said it was a(n)_____. What do you think it is?

Response: _____

Who do you think is right?

Miss Owl **Señorita Buho**

Who gets the check? Who gets the X?

9.
Look! The owls found a **box**! I know there's a **ball** in the **box**, but let's let the owls take a peek and tell us what they see.

Click on each owl, beginning with Miss Owl/Señorita Buho.

Miss Owl said it was a(n)_____. Señorita Buho said it was a(n)_____. What do you think it is?

Response: _____

Who do you think is right?

Miss Owl **Señorita Buho**

Who gets the check? Who gets the X?

10.
Look! The owls found a **bag**! I know there's a **sock** in the **bag**, but let's let the owls take a peek and tell us what they see.

Click on each owl, beginning with Miss Owl/Señorita Buho.

Miss Owl said it was a(n)_____. Señorita Buho said it was a(n)_____. What do you think it is?

Response: _____

Who do you think is right?

Miss Owl **Señorita Buho**

Who gets the check? Who gets the X?

Post-Accuracy Phase:
11.

Miss Owl and Señorita Buho found some more funny objects. Let's see what they found!

Look! The owls found another **box**! I'm not sure what's in the **box**, but I'm sure the owls know! Let's let the owls take a peek and tell us what they see.

Do you know what this is called?

No **Yes (if yes, correct them)**

I bet one of the owls probably knows what it is called! Who do you want to hear from first?
Miss Owl **Señorita Buho**

Click on each owl.

Who gets the check? Who gets the X?
Check:_____ **X:**_____

12.
Look! The owls found a **bag**! I'm not sure what's in the **bag**, but I'm sure the owls know! Let's let the owls take a peek and tell us what they see.

Do you know what this is called?
No **Yes (if yes, correct them)**

I bet one of the owls probably knows what it is called! Who do you want to hear from first?
Miss Owl **Señorita Buho**

Click on each owl.

Who gets the check? Who gets the X?
Check:_____ **X:**_____

Faultless Disagreement Phase:

13.
Miss Owl and Señorita Buho found another **box**, but this time, they won't show us what's in it. Let's see what they found!

I know there is a **game** in this **box**, but I don't know what it's like. Let's let the owls take a peek and tell us about the **game**!

Click on each owl, beginning with Miss Owl/Señorita Buho.

What do we think?
Who gets the check? Who gets the X?

Check:_____ **X:**_____

Why does Miss Owl/ Señorita Buho get the check? Why does Miss Owl/ Señorita Buho get the X?

14.
I know there is a **shirt** in this **bag**, but I don't know what it's like. Let's let the owls take a peek and tell us about the **shirt**!

Click on each owl, beginning with Miss Owl/Señorita Buho.

What do we think?
Who gets the check? Who gets the X?

Check:_____ **X:**_____

Why does Miss Owl/ Señorita Buho get the check? Why does Miss Owl/ Señorita Buho get the X?

15.
I know there is a **snack** in this **box**, but I don't know what it's like. Let's let the owls take a **taste** and tell us about the **snack**!

Click on each owl, beginning with Miss Owl/Señorita Buho.

What do we think?
Who gets the check? Who gets the X?

Check:_____ **X:**_____

Why does Miss Owl/ Señorita Buho get the check? Why does Miss Owl/ Señorita Buho get the X?

16.
I know there is a **picture** in this **bag**, but I don't know what it's like. Let's let the owls take a peek and tell us about the **picture**!

Click on each owl, beginning with Miss Owl/Señorita Buho.

What do we think?
Who gets the check? Who gets the X?

Check:_____ **X:**_____

Why does Miss Owl/ Señorita Buho get the check? Why does Miss Owl/ Señorita Buho get the X?