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## The Development of Indexicality: Perceptual evidence from 4- to 18-year-olds

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### Abstract

Despite the importance of the pre-adult developmental period to sociolinguistic theory (Labov 1972, Eckert 2000), children and teens remain understudied when it comes to understanding how indexicality develops. The present study seeks to bring the existing scholarship on child and teen evaluation of language varieties into a clearer dialogue with contemporary theories of indexicality focusing on the social meaning of individual variables. We conducted a matched guise task with listeners from age groups across the lifespan. From a larger dataset, we focus here on comparing the status ratings of adult listeners with those of children and teens, for six American English sociolinguistic variables. Listeners heard short audio stimuli containing unmarked or marked variants and were asked “Do you think this person would be a good teacher?”. Our results show that listeners as young as 4 years old can differentiate variants for status, and that teenagers aged 13-18 tend to pattern with adults in rating unmarked variants more positively for status. In addition, we identify a range of developmental patterns across variables: some, like creaky voice and /r/-insertion, show a unidirectional pattern, suggesting a linear development of status differentiation. For other variables, only listeners in middle childhood differ significantly from adults – for example, 10-12 year olds do not differentiate (ING) variants for status – highlighting the need for further research exploring the social meanings of variants in this developmental period in particular. Finally, 4-6 year olds differed from adults most often, but in varied ways, highlighting this period as one of transitions in which children begin to shift from a caregiver model to a peer-oriented one. In all, the results serve to bolster our call for increased attention to the indexical systems of children and teens, whose rich social-semiotic landscapes deserve further study.

# The Development of Indexicality: Perceptual evidence from 4- to 18-year-olds

Charlotte Vaughn and Kara Becker\*

## 1 Introduction

Despite a robust literature exploring the links between linguistic variation and social information in adults in both production (e.g. Zhang 2008, Podesva 2013) and perception (e.g. Campbell-Kibler 2010, Levon 2014, D’Onofrio 2018), and the importance of evaluation to variationist theory (Labov 1972), relatively little is known about how and when the sociolinguistic system of indexicality (Silverstein 2003) develops. This study contributes data from a matched-guise perception experiment with listeners from across the lifespan. The analysis focuses on documenting the developmental trajectories of status ratings for a range of variables, through a comparison of children’s and teens’ responses with adults’. Our goal is to bring theories of indexicality into more direct conversation with research on children and teens, social evaluation, and language development (cf. Eckert 2008b, Foulkes 2010), with the aim of enriching the understanding of language as a semiotic system.

### 1.1 Children, Teens, and Sociolinguistic Theory

Understanding the sociolinguistic patterns of children and teens has been central to the program on language variation and change (Eckert 2000, Labov 2001). This period is characterized by transmission with incrementation; i.e., the local adult system is faithfully acquired, but variability linked with ongoing change is advanced. Children produce variation early on, as young as 3- to 4-years old, likely the result of hearing caregivers style-shift (Labov 2001). Children’s variant use first tends to follow caregivers’ (Roberts 2018, Foulkes and Docherty 2006, Smith, Durham, and Fortune 2007), but shifts to a peer-oriented model as children enter school (Kerswill and Williams 2000, Nardy, Chevrot, and Barbu 2014). The “adolescent peak” (Cheshire 1987) marks the point at which innovation is most advanced, cementing adolescents’ status as leaders of linguistic change. The linguistic practices of children and teens are then thought to stabilize into adult patterns of variation, which range along multiple axes of social differentiation (Labov 1972).

Standing in contrast to the complex patterns of variation found across the lifespan in production is the suggestion that the social evaluation of variables is both shared and stable. Labov’s (1972:117) central criterion for a speech community is uniform evaluation; for example, New Yorkers show fine-grained class stratification in their production of syllable-coda /r/, but all agree that the rhotic variant is “correct,” regardless of whether or how much they produce it. However, more recent scholarship has demonstrated that different age groups of adults evaluate variants to have different social meanings, especially for variables undergoing change (Eckert 2014, Vaughn, Kendall, and Gunter 2018). More generally, research focused on indexicality has identified a confluence of factors that together influence the process of evaluation, where social meanings of specific variables are constructed locally based on properties of the speaker, the listener, and the context (e.g. Eckert 2008a, Levon 2014).

Recent scholarship on the evaluation of individual variables has contributed important insights for sociolinguistic theory, yet has remained largely restricted to adults. This omission may perpetuate the notion that indexical systems, though rich and context-dependent, are “fixed” by adulthood, a perspective similar to the notion that individual adults stabilize their linguistic systems around the end of adolescence (Labov 1972, 2001). Given the careful work examining children’s and teens’ sociolinguistic variation in production, we argue that it is just as critical to examine the social evaluations made by these age groups, including whether and how they may come to resemble adults’.

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## 1.2 Children, Teens, and Social Evaluation

In contrast to sociolinguistic studies of production in development, which center around individual linguistic features, the literature on evaluation and attitudes in development has focused primarily on attitudes toward holistic language varieties. This work, typically using some version of a matched-guise task, has demonstrated that children begin to link varieties to social meanings from a young age (e.g. Rosenthal 1974, Giles, Harrison, Creber, Smith, and Freeman 1983, De Vogelaer and Toye 2017, McCullough, Clopper, and Wagner 2019). For example, American 5 year-olds expressed a friendship preference for speakers of their local variety over speakers of a non-native variety (Kinzler, Shutts, DeJesus, and Spelke 2009). Similarly, Canadian 5-6 year-olds believed that speakers of their local variety would be better teachers than those from other accent backgrounds, both native and non-native (Paquette-Smith, Buckler, and Johnson 2022). The development of attitudes toward varieties continues to change into the teenage years, with some studies finding increasing endorsement of standard language ideology during adolescence and others finding increased linguistic tolerance with age (Giles 1970, Lambert, Giles, and Picard 1975, Garrett, Coupland, and Williams 2003). Much of the recent developmental work in this area has been conducted by psychologists, and remains notably disconnected from sociolinguistic theory and theories of indexicality.

Though attitudes toward holistic varieties are well-studied, the social evaluation of individual linguistic forms prior to adulthood has received far less attention. Chevrot, Beaud, and Varga (2000) had 6-7 and 10-12 year-old French children evaluate variants of post-consonantal word-final /R/ and choose whether the adult speaker had “spoken well” or had “spoken badly”, and found that both groups of children showed differentiation by variant. Investigating liaison in French, Barbu, Nardy, Chevrot, and Juhel (2013) asked 2-6 year-old French children which of two puppets was speaking correctly, one producing a standard and another a non-standard variant. Children’s responses were at chance until ages 4 to 5, where the standard variant was more acceptable than the non-standard. At ages 5 to 6, upper SES children strongly favored standard variants, while lower SES children did not have a preference. Unlike the early view that awareness of the social significance of sociolinguistic variants does not occur until adolescence (Labov 1972), these kinds of findings suggest that indexical links are evident much earlier.

The few studies in this area have been illuminating, yet overall we still know very little about how and when the indexical system develops. As Foulkes and Hay (2015) write: “There are still more questions than answers about the trajectory of acquisition for socio-indexical knowledge” (297). The centrality of evaluation to sociolinguistic theory, combined with increasing interest in understanding the meanings and construal of sociolinguistic variables, makes this the right time to begin to answer these questions.

## 1.3 This Study

The current study asks whether developmental patterns are observable in listener evaluations of six sociolinguistic variables when comparing adults with children and teens. We targeted both status and solidarity dimensions of attitudes toward variants, but analyze here only the status dimension. Our central measure of interest is the difference in status ratings between unmarked and marked variants, and how that difference varies across age groups. Following other matched-guise work, we take the presence of a difference as an indication that social differentiation (in this case, status) is indexed by variants of that variable. An initial question is whether younger participants differentiate variants at all; given the findings of Chevrot et al. (2000) and Barbu et al. (2013), we hypothesized that children ages 4 and up would be able to distinguish variants for status. Importantly, a pilot study of our sample population confirmed that children this young were able to perceptually discriminate the variants from our stimuli in a same/different task.

We examine several variables to see how differentiation between variants patterns across age groups. Results will reveal whether it is possible to observe patterns across age groups in development. If patterns are evident, we ask whether all variables show similar developmental trajectories, show highly idiosyncratic trajectories, or whether they may fall into different describable types of patterns. For example, younger groups could show less social differentiation between variants than adults, with increasing differentiation across age groups. Or, other developmental patterns may

emerge, such as the “rollercoaster” and curvilinear patterns identified in longitudinal studies of African American English feature use (Van Hofwegen and Wolfram 2010, Kohn, Wolfram, Farrington, Renn, and Van Hofwegen 2020).

In order to focus our attention on fine-grained age groupings of children and teens, here we elected to bin all adults (ages 19 and up) into a single group that we treat as a baseline for comparison. With this choice, we do not mean to suggest that there is a single static adult system of indexicality; we take as a guiding assumption that indexicality is a process, and that social actors of various ages will negotiate this process in their own age-appropriate social realms. Nonetheless, we hypothesize that, when presented with relatively neutral stimuli, adults overall will differentiate unmarked and marked variants for status, giving higher ratings to the unmarked variant. Although there are many interesting hypotheses to explore about variation within the adult group, we put these aside to focus on the patterns of children and teens. We emphasize that our approach here is not the only or even the most meaningful way to measure children’s and teens’ indexical meanings of variables; to complete the full picture, other methods are needed, including close ethnography (e.g. Eckert 2000, Lake and Pistor 2021) and qualitative analyses (e.g. Vaughn and Becker in prep). If, for example, a certain age group does not show a distinction between unmarked and marked forms in our study, we do not take this to indicate that that group does not have indexical associations with those forms. Instead, it may be that their specific social meanings don’t line up with adults’, or that the variants are not especially meaningful to them in this context. That being said, we believe our methodology is an important source of converging evidence along with other types of work, as it provides a birds-eye view of how many different age groups orient to the same stimuli.

## 2 Methods

### 2.1 Variables

We selected six American English sociolinguistic variables with existing literatures that captured a range of factors we hypothesized to be relevant to the development of social meaning, including linguistic level, degree of stability/change, prestige, geographic distribution, and salience. *Adjective intensifiers*, or modifiers that boost meaning, are a site of frequent change, with lexical variants like *very* decreasing in the usage of young people (Tagliamonte 2008), while newer forms like *super* are associated with young people by older listeners (Vaughn et al. 2018). *Creaky voice* is a non-modal phonation type that is both highly salient and stigmatized in contemporary American society, though its social meanings are varied, ranging from authoritative and professional to uncertain (Podesva 2013, Eckert 2014). The variable (*ING*), or the alternation between the word-final nasals /ŋ/ and /n/ as in *talking* and *talkin*, has an indexical field of related meanings that change depending on listener expectations, though intelligence is typically implicated (Campbell-Kibler 2010). *Released /t/*, where intervocalic /t/ is not flapped or tapped, has an indexical field that centers on an underspecified meaning of *articulate*, which can take on context-dependent meanings in situated use (Eckert 2008a). *Pre-g /æ/ raising*, sometimes called *bag-raising*, is a vocalic feature used primarily by older speakers in the Pacific Northwest (the location of this study) and Western Canada; it has low salience overall, though is linked to conservative ideologies towards local change (Swan 2020). *R-insertion*, or intrusive /r/, in words like *wash* and *Washington* (Kurath and McDavid 1961) is locally salient and stigmatized as low status.

Variable	Unmarked variant	Marked variant
<b>adjective intensifiers</b>	<i>very</i>	<i>super</i>
<b>creaky voice</b>	modal	creaky
<b>(ING)</b>	[ɪŋ]	[ɪn]
<b>pre-g /æ/ raising</b>	no raising	raising
<b>r-insertion</b>	no insertion	insertion
<b>t-release</b>	released [t <sup>h</sup> ]	flapped [ɾ]

Table 1: Six variables and their unmarked and marked variants.

For each variable, we operationalized one variant as “unmarked” and another as “marked,” summarized in Table 1. We made this simplification to track broad developmental trends in how variants index status in our task. Beginning with the general hypothesis that the adults in our sample would rate the unmarked variants higher than the marked variants for status, we compare children’s and teens’ ratings to adults’ ratings. We acknowledge that the social meanings for these variables are far more complex and context-dependent than can be captured in this experimental design.

## 2.2 Stimuli and Design

Each of the six variables was situated in two short sentences, for a total of 12 sentences. Six young cisgender women, all natives of Oregon, with various racial and ethnic backgrounds, produced the stimulus sentences in a sound booth. Speakers were coached to produce matched-guise pairs that differed only for the target feature. All participants produced all twelve sentences, and two sentences were chosen from each speaker for use in the experiment; for each variable, the two sentences chosen were always spoken by different speakers. The final stimulus materials were 24 sentence productions (6 variables x 2 sentences x 2 variants).

Each participant heard half of these sentences (12 total) presented in a randomized order. Participants heard both sentences from all six variables, and were randomly assigned to receive one of two lists that counterbalanced which variant of each variable they heard; i.e., if one sentence for a variable contained one variant (e.g., *He washed [no r-insertion] the dishes in the sink*), the same participant heard the other sentence for that variable with its alternate variant (e.g., *I just moved here from Wa[r/shington]*). Thus no participant heard the same sentence, or the same speaker, with both variants, but all participants heard both variants of each variable.

## 2.3 Participants and Procedure

Beginning in summer 2019, we recruited participants at the Oregon Museum of Science and Industry (OMSI) in Portland, Oregon, collecting data from 215 participants before the museum closed due to COVID-19. In summer of 2020, we pivoted to collect data online to fill out our age groups, using word-of-mouth recruitment and posting our study on the Children Helping Science website ([www.childrenhelpingscience.com](http://www.childrenhelpingscience.com)), a platform where researchers can post online studies for parents to find. Online data collection resulted in an additional 371 participants. All together, our sample includes data from 586 participants, age range 4-80 (Table 2). Self-reported gender identities were binned as male = 202, female = 377, and gender non-conforming = 7. Again, for this paper, we binned adults ages 19 and up into a single group and treat them as a baseline for comparison. Children and teen participants were binned into three-year age groups.

Age Group	Total <i>N</i>
4 to 6	62
7 to 9	60
10 to 12	47
13 to 15	33
16 to 18	37
19 to 80 (Adult)	347
<b>Total</b>	<b>586</b>

Table 2: Distribution of participants by age group.

The experiment was presented via the browser-based survey tool Qualtrics. In person at OMSI, participants completed the study on their own if they could, with guidance from a member of the research team or a parent for children not able to read or type fluently. For online participants, two versions of the study were created: one designed for older children and adults to self-administer, and another designed for parents to administer to younger children (following the same guidance protocols as we used in person). All participants were asked to wear headphones. Participants at OMSI could choose a toy from our table, and online participants received a gift card for their time.

The study followed a typical matched-guise design. On each trial, participants were allowed to listen to the stimulus sentence as many times as they wished. All participants were encouraged to

focus “on how the speaker sounds instead of what they are saying”. In each trial, participants were given two questions: “Do you think this person would be a good friend?” and “Do you think this person would be a good teacher?” and were asked to drag a slider along a bar from 1 to 6 according to how good/bad of a friend/teacher they think they would be (1: A really bad friend/teacher to 6: A really good friend/teacher). The two questions were designed, following prior literature, to target solidarity (friend) and status (teacher) dimensions but in a way that would make sense for both children and adults. Listeners of different ages likely have different exemplars and associations with friends and teachers, but both groups are familiar with the concepts. As teachers are quite frequently young adults, asking children and teens to rate young adults’ voices as teachers is a fairly natural task (likely more natural than giving friend ratings), but our results would be complemented by an approach asking listeners to respond to age-matched voices, where we expect that different indexical links would come to the fore. After each slider question, participants could optionally provide open-ended responses about their reasoning, but these qualitative data are not analyzed here.

## 2.4 Analysis

Our analysis here focuses on the results of the teacher ratings. Because we did not expect to see identical developmental trajectories for our six variables, we fit linear mixed effects regression models on the data for each variable separately, with the numeric rating as the dependent variable. For each model, fixed effects included Age group (dummy coded, with adult as reference level), and Variant (dummy coded, with unmarked as reference level), and the interaction between Age group and Variant. Random effects included random intercepts for Speaker/Sentence and Participant. Significance was assessed in R using the *lmerTest* and *car* packages, and post-hoc comparisons across levels for significant interactions were conducted using the *emmeans* package.

The interaction between Age group and Variant is the result that most directly addresses our research questions, as it reveals the age groups whose difference between marked and unmarked variants is different than the adults’ difference between marked and unmarked variants. Further, post hoc tests of that interaction will determine which age groups beyond adults show differentiation in their teacher ratings between marked and unmarked variants of a variable.

## 3 Results

Figure 1 provides an overview of mean teacher ratings by Variable and Age group. Though the range of ratings differs by variable, this is likely due to some combination of the speaker and sentence content; the relevant observation for our purposes is the relative difference between the unmarked and marked ratings.

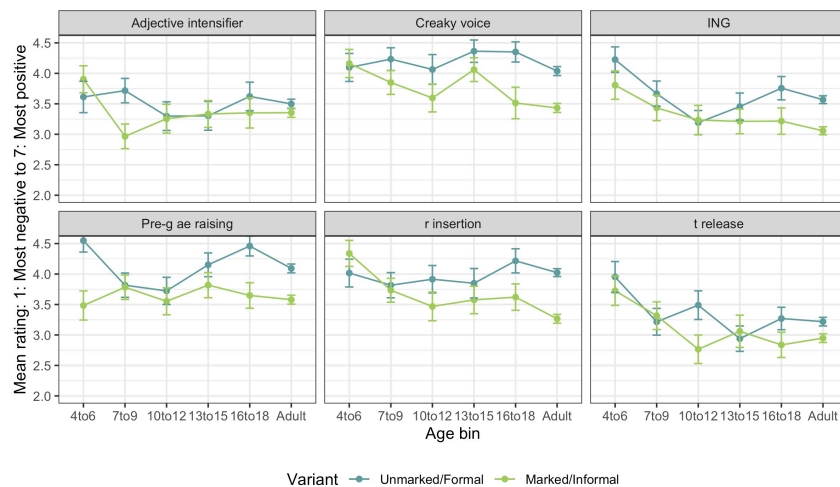


Figure 1: Raw ratings on teacher scale for each variant by Variable and Age group.

With few exceptions, participants across age groups give higher mean ratings for the unmarked

(blue) variants than the marked (green) variants. For all variables, adults show the expected pattern, where the unmarked variant is given a numerically higher status rating than the marked variant, though the difference appears small for some variables. When comparing adults' patterns with children's and teens', it appears that the oldest pre-adult group, 16-18 year-olds, treat the variables similarly to adults, with clear differentiation between most variants. In contrast, participants in the younger age groups at times show far less of a contrast, and the behavior of the youngest age group, 4-6 year-olds, is notable, with high ratings across variants for some variables (e.g. t-release, (ING)) and higher mean ratings for the marked variants for adjective intensifiers and r-insertion.

Turning to our statistical results across the six variables, we first briefly mention main effects, before exploring our effect of interest, the interaction between Variant and Age group. In investigating the interaction, we first explore which age groups' patterns for variants differ from adults'. Then, we use post hoc tests to determine which age groups (besides adults) rate marked and unmarked variants differently. Table 3 summarizes the main effects and interactions from the statistical models for each variable and presents the Beta value and significance level of each factor.

In terms of main effects, Variant is significant for all variables except adjective intensifiers, showing that for these variables unmarked variants were rated significantly higher than marked variants for the adult age group (the reference level). We suspect that adjective intensifiers do not pattern neatly along a standard to nonstandard continuum, a likely factor in teacher ratings. Further, there is a significant main effect of Age group for 4-6 year-olds for (ING), pre-g /æ/ raising, and t-release, such that their ratings of the unmarked variants (the reference level) for those variables was higher than adults' ratings of unmarked variants. No other age group patterned significantly differently from adults in their ratings of unmarked variants, for any variable.

	Adjective intensifiers	Creaky voice	ING	Pre-g /æ/ raising	r-insertion	t-release
(Intercept)	3.50 *	4.17 ***	3.57 ***	4.09 ***	4.02 ***	3.22 ***
Variant-Marked	-0.15	-0.60 ***	-0.51 ***	-0.51 ***	-0.76 ***	-0.27 **
Age group-4-6	0.15	0.07	0.66 ***	0.46*	-0.02	0.73 ***
Age group-7-9	0.18	0.21	0.10	-0.28	-0.19	0.01
Age group-10-12	-0.26	0.04	-0.38	-0.38.	-0.08	0.28
Age group-13-15	-0.25	0.36	-0.11	0.05	-0.16	-0.27
Age group-16-18	0.04	0.38	0.19	0.36	0.22	0.07
Variant x Age group-4-6	0.37	0.69**	0.09	-0.56 *	1.10 ***	0.06
Variant x Age group- 7-9	-0.52 *	0.20	0.28	0.49 *	0.65 **	0.36
Variant x Age group- 10-12	0.23	0.05	0.55 *	0.36	0.27	-0.47 .
Variant x Age group- 13-15	0.29	0.15	0.27	0.19	0.45	0.37
Variant x Age group- 16-18	0.03	-0.30	-0.03	-0.28	0.12	-0.19

Table 3: Summarized output of the statistical model for each variable, presenting the Beta value (estimate) for each factor, and using the following codes to indicate significance:

\*\*\* < 0.001; \*\* = 0.001; \* = 0.01; . = 0.05

Our primary interest is in the interaction of Variant and Age group. We visualize this pattern in Figure 2, which presents another view of the data, as difference plots: the y-axes represent the rating



for the unmarked variant minus the marked variant of each variable, by age group.

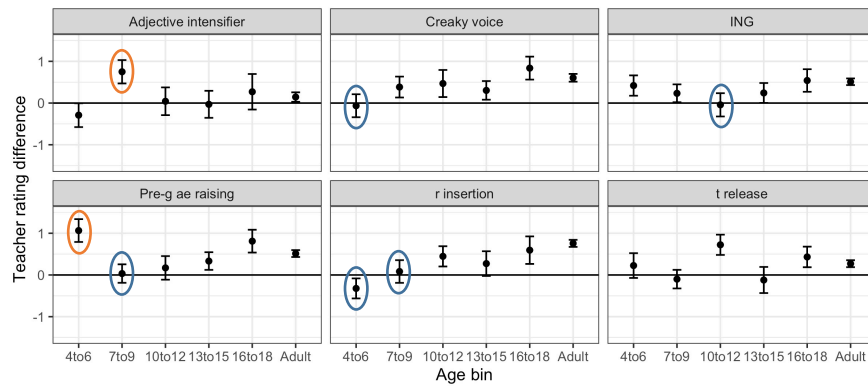


Figure 2: Plots of differences in ratings between Variants. Horizontal line at zero indicates no difference between variants, positive values indicate unmarked variant rated more highly than marked. Circles indicate a significant interaction between Variant & Age group, orange indicating higher values than adults and blue indicating lower values.

There were significant interactions between Variant and Age group for most variables, indicating change in developmental time. Interestingly, 13-15 and 16-18 year-olds did not differ from adults for any variable. Instead, the younger age groups are more different than adults; both 4-6 year-olds and 7-9 year-olds differed significantly from adults for half of the variables explored.

Two variables, creaky voice and r-insertion, show a unidirectional pattern, with either the youngest age group (for creaky voice) or the two youngest age groups (for r-insertion) exhibiting significantly less differentiation than adults, with stable differentiation appearing by 10-12 years old. For one variable, pre-g /æ/ raising, 4-6 year-olds showed more differentiation than adults, 7-9 year-olds showed less differentiation, and older children and teens showed no difference from adults. Two variables exhibit nonlinear patterns: for adjective intensifiers, only 7-9 year-olds demonstrated significant differentiation compared with adults. For (ING), conversely, all group groups except 10-12 year-olds patterned with adults in giving higher ratings to *-ing* over *-in*. Finally, for t-release there was no significant interaction between Age group and Variant.

The interactions between Variant and Age group were significant overall for three variables according to a likelihood ratio test: creaky voice, pre-g /æ/ raising, and r-insertion. For these three variables we conducted post-hoc testing to determine which other age groups besides adults showed differentiation between marked and unmarked variants. For creaky voice, 10-12 and 16-18 year-olds also differentiated between variants. For pre-g /æ/ raising, 4-6 and 16-18 year-olds, and, for r-insertion, 10-12 and 16-18 year-olds, also differentiated between variants. These results indicate that children as young as 10-12 years old, but not younger, gave significantly higher status ratings to unmarked than marked variants for creaky voice and r-insertion, and children as young as 4-6 years old showed this pattern for pre-g /æ/ raising. Curiously, 13-15 year-olds did not show such differentiation, despite the presence of differentiation for 10-12 and 16-18 year-olds for these variables (see Figure 2). Whether the dip in differentiation for this age group is a true developmental pattern or an accident of our data is unclear.

#### 4 Discussion

Though the patterns are not consistent across variables, the overall picture from our data is one where children and teen listeners by-and-large rate an unmarked variant higher than a marked one for status, with teens (ages 13 to 18) patterning across-the-board like adults. The emergence of differentiation between variants in teacher ratings depended on the variable, which was expected given that our variables differ with respect to salience and meaning. R-insertion, for example, showed a unidirectional pattern, where ages 10-12 and up patterned with adults (with a dip in differentiation for ages 13-15). While we selected this feature based on metalinguistic commentary from adults in the region that highlighted its stigma, we have little information about its current use in production.

It may be the case that younger listeners have not yet had enough exposure to this variant to form indexical links.

Another variable with a similar pattern is creaky voice, which is widely used in production by young people, making it unlikely that the youngest age group is unfamiliar with this voice quality. Since it is only 4-6 year-olds who pattern differently than adults, with less differentiation between variants, we pause here to consider this age group, which for most children encompasses the transition from a caregiver model to a peer one as they enter school. Recall also that for the French children in Barbu et al. (2013), age 4-5 was when children began to distinguish /R/ for status. Given this perspective of transition into the peer order, it may be the case that our age 4-6 group is made up of children who vary with respect to how much they replicate caregivers' models of evaluation vs. peers, or even attend to evaluations of status at all. Another relevant finding is the main effect of Age group for 4-6 year-olds, who gave higher ratings for unmarked variants compared with adults. Interpreting this result leads us to consider the task – these children are sitting with an adult, sometimes unknown to them, listening to an adult voice over headphones. One possibility is that these young children aim to please in such a setting, giving higher ratings overall despite distinguishing between most variants for status. While we feel comfortable that children this young in our sample population could perceptually distinguish between variants based on a pilot study, we must ask to what extent young children are “doing” the same task as adults. Alternatively, it may be that this youngest age group is simply more tolerant of a range of productions in their teacher ratings.

One variable where 4-6 year-olds show a distinct pattern that does lend itself to interpretation is pre-g /æ/ raising. The pattern for this variable is somewhat U-shaped, with 4-6 year-olds having the largest differentiation (significantly larger than adults'), while 7-9 year-olds have the least, and ages 10 and up did not differ from adults. This variable's profile is unique in our study: it is the lone regional variant, but importantly, that variant is receding in apparent time, and is variably salient to locals (Becker, Aden, Best, and Jacobson 2016). Perhaps 4-6 year-olds evaluate this variable modeling their caregivers, who may use it or comment on it, whereas slightly older children, having re-oriented to a peer evaluation model where the feature plays little to no role, do not differentiate. Then, as these local children age, they gain back some awareness of this local feature due to increased orientation to the adult world, such that their evaluations come back in line with adults'.

Finally, some variables show evidence of discontinuity, such as 10-12 year-olds' dip in social differentiation for (ING), and 7-9 year-olds' heightened differentiation between *very* and *super*. Here, we note that Kohn et al. (2020: 49) argue that middle childhood is often overlooked in sociolinguistic studies, falling as it does between acquisition studies that often go to age 6, and preadolescent studies that often start at age 12. We suggest that this age group is similarly important for understanding the development of indexicality. The 7-9 year-olds in our data are particularly intriguing, with both flat and exaggerated patterns for status ratings that often look dramatically different from the age groups around them as well as from adults.

Indeed, this observation leads us to highlight the limitations of our work: we do not know what these variables mean to 7-9 year-olds (nor to any of the listeners' in our study): we only know that their ratings for status often differentiate between unmarked and marked variants in ways incompatible with adult ratings. This does not mean that 7-9 year-olds have failed to acquire social meaning or do not have indexical associations for some variables. Similarly, finding compatible patterns does not imply that children's and teens' social meanings are the same as adults'. Our ongoing qualitative work speaks to this, for example illustrating that the social categories meaningful to younger children are based on a different pool of category exemplars than adults' (Vaughn and Becker in prep). The patterns identified here lay out exciting open questions, and serve as a call for further research on indexicality in young people, using methods that can explore what variation means to children and teens, and how different age groups make meaningful use of variation.

## 5 Conclusion

This experimental look at social evaluation across the full lifespan is a first step toward bridging the gap between research on children's and adults' systems of indexicality. We find that children as young as 4 years old differentiate sociolinguistic variants for status in our matched-guise task; for example, the raised and unraised variants for pre-g /æ/ raising. As children develop into teens, their evaluations become more similar to adults: 13-18 year-olds pattern like adults in these data.

Across variables we observed a range of developmental trajectories (leaving aside adjective intensifier variants, which adults did not socially differentiate). Both /r/-insertion and creaky voice showed a unidirectional trajectory, suggesting that the link between each variable and social status develops in a linear fashion. The pattern for pre-g /æ/ raising was fairly U-shaped, calling attention to the unique behavior of the youngest two age groups, while the nonlinear pattern for (ING) highlights the behavior of 10-12 year-olds; both cases underscore the need for increased attention paid to the middle childhood period, where the dominance of the peer social order likely inculcates local and specific social meanings relevant to the developmental period. For t-release, there is no pattern save that the youngest age groups rate the unmarked non-released variant significantly higher than the adults do; this is a surprising result for teacher ratings given the proposed indexical field for the released variant, which has been described as indexing a “school-teachery standard.” (Eckert 2008: 468). Indeed, findings like these illustrate the limitations of this experimental study, which cannot show what indexical links children and teens have nor how they acquire them. Yet, we do see clear evidence that children and teens overall can differentiate individual variables for status, a central aspect of adults’ indexical systems. With our examination of social evaluation by children, teens, and adults, we begin to bridge the gap between the disparate literatures on indexicality and acquisition. Much more work is needed to understand the development of indexicality, yet it is clear that the social-semiotic landscapes of children and teens (Eckert 2019) deserve more scholarly attention.

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