

Laz Caregivers' Talk to Their Young Children:

The Importance of Context and Utterance Type in Eliciting Ancestral Language Use

Peri Yuksel

New Jersey City University, Jersey City

Cass Lowry

The Graduate Center, CUNY, New York, NY

Patricia J. Brooks

College of Staten Island and The Graduate Center, CUNY, New York, NY

In press, *First Language*

Peri Yuksel, Assistant Professor  
New Jersey City University  
2039 John F. Kennedy Blvd  
Jersey City, NJ 07305  
Department of Psychology  
Professional Studies Building, Room 432  
[PYuksel@njcu.edu](mailto:PYuksel@njcu.edu)

Cass Lowry, Linguistic Doctoral Student  
Second Language Acquisition Lab  
The Graduate Center, CUNY  
365 Fifth Ave. – Room 7393  
New York, NY 10016  
[clowry@gradcenter.cuny.edu](mailto:clowry@gradcenter.cuny.edu)

Patricia J. Brooks, Professor  
College of Staten Island, CUNY  
2800 Victory Boulevard  
Staten Island, New York 10314  
Department of Psychology  
Building 4S Room 103  
Phone: 718.982.3793  
Fax: 718.982.4114  
[patricia.brooks@csi.cuny.edu](mailto:patricia.brooks@csi.cuny.edu)

Acknowledgement

“Didi mardi” to all the Laz families for their research contribution and many thanks to our research assistant Selma Kurtoglu who helped with the transcription and coding. Our appreciation also extends to the blind reviewers and Dr. Evan Kidd for their thoughtful feedback on previous versions of this manuscript. Preliminary analyses were presented at the 2019 Boston University Conference on Language Development.

#### Funding

This work was supported by a dissertation grant from *Language Learning: A Journal of Research in Language Studies* and a Doctoral Student Research Grant from The Graduate Center, CUNY.

## Abstract

This study examined play interactions of 15 to 48-month-old children ( $n = 59$ ) and their caregivers in Lazuri, an UNESCO-rated endangered South-Caucasian ancestral language, and Turkish, a dominant language supplanting Lazuri usage in the community. Child-caregiver dyads played with two toy sets (animal farm, tea set) that provided different contexts for interaction. Participants' utterances were coded as instances of distinct functional utterance types (e.g., labels, commands, questions). Our goal was to analyze the influence of play context on child and caregiver functional utterances in order to identify factors that prompted children to use the ancestral language. The animal farm encouraged dyads to engage in labeling objects, while the tea set encouraged use of social language (e.g., comments). The differing contextual affordances led children to produce many more Lazuri labels than expected when playing with the animal farm. Mixed-effects regression analysis indicated that caregivers' use of Lazuri and their use of labels predicted children's use of Lazuri, along with child age. Notably, older children were less likely to use the ancestral language than younger children. The children's strong preference for speaking Turkish highlights the urgency of interventions to ensure language preservation in Laz communities. Interactions that promote labeling may serve as an effective first step in encouraging children's use of the Laz vocabulary.

**Keywords:** *functional utterances, endangered language, ancestral language preservation, caregiver-child interaction, play context, overhearing*

### Laz Caregivers' Talk to Their Young Children:

#### The Importance of Context and Utterance Type in Eliciting Ancestral Language Use

Children are born ready to learn the languages spoken in their communities, yet in contexts where a hegemonic dominant language (DL) has begun supplanting an ancestral language (AL), caregivers need to provide ample opportunities for children to hear and speak the two languages in order for children to acquire them both successfully. Without sufficient pressure for children to use the AL, it will become endangered and potentially lost within a few generations (Fishman, 1991). Throughout the world where economic and social factors have caused intergenerational language shift, fieldwork has tended to focus on documenting the AL use of adult speakers (Eisenbeiss, 2006; Grinevald, 2007; Lüpke, 2010). In contrast, less is known about how children acquire functional competencies in the AL to communicate effectively in different conversational contexts. Such research is critical given the observation that children growing up in bilingual communities may develop limited functional proficiency in their home language due to more limited occasions for its use (Hoff & Ribot, 2017; Montrul, 2016). The current study explores bilingual caregiver-child dyads' language use in two different interactive play conditions in the context of language loss to shed light on factors that may be successful in eliciting AL use.

Previous research on AL preservation notes that children's successful acquisition of an AL varies as a function of its status in the broader society, the availability of resources for teaching the AL at school, the number of speakers, oral language traditions, and parental language practices (King & Fogle, 2013; Meakins & Wigglesworth, 2013). Parental language practices indeed seem to be a powerful predictor in many indigenous contexts, especially when strong societal pressures favoring the DL are present. Often when proficiency in a DL is expected for school entry, families may inadvertently diminish their children's opportunities to acquire their AL by using the DL at

home (Fillmore, 1991). In familial contexts where speakers differ in their language preferences, code-switching is likely to be pervasive both across and within conversational turns. Thus, in informal settings where caregivers use an AL, their children may answer using the DL that they have learned at school, on television, or through interactions with peers (Kneebone, Christelow, Neuendorf, & Skelton, 2012; Lebon-Eyquem, 2015). Observing and studying caregiver-child interactions in various bilingual language communities will not only contribute to the knowledge of what kind of practices contribute to AL transmission, but may indicate what specific communicative practices facilitate language usage as a whole.

The current study investigates the immediate consequences of caregiver language on children's use of an endangered AL. The AL in question is Lazuri (aka Laz), a UNESCO-rated endangered South Caucasian language spoken in parts of Rize and Artvin, Turkey (Moseley, 2010), which is being supplanted by the DL, Turkish. For centuries Lazuri has been orally transmitted due to lack of a standardized script or formal school education (Ozfidan, Burlbaw, & Aydin, 2018). The data come from a previously reported study that attempted to promote children's use of the AL through floor play with parent and grandparent caregivers (Yuksel & Brooks, 2017). The previous analyses focused on the role of caregivers' deictic gestures in supporting children's uptake and use of AL. In contrast, the present analyses investigate specific aspects of the interactional context and conversational patterns (i.e., functional utterance types) that may have scaffolded children's ability to use the AL.

### *Context of Lazuri*

Living remotely at the eastern end of the Black Sea along the borders of modern-day Turkey and Georgia, the Laz people and their language (Lazuri) were separated for centuries from the Turkish-speaking inland through natural barriers (Braund, 1994; Hann, 1997). With the

introduction of a subsidized tea crop in the 1950s, massive development of infrastructure for transportation and communication revolutionized the Lazuri-speaking territories, yet at the same time severely endangered the transmission of the AL to subsequent generations of children (Ascherson, 1996; Hann, 1997).

Determining the extent of AL loss is difficult as there are few official records of Lazuri speakers. The most recent estimate comes from the Turkish census of 1965, which was the last census to ask about home languages. It indicated that 26,007 people spoke Lazuri as their mother tongue (Devlet İstatistik Enstitüsü, 1968). Turkey has never granted the Laz language an official status. The lack of socio-political recognition, combined with compulsory primary education in Turkish and increased access to modern technology, has pushed Laz communities towards rapid assimilation into the mainstream culture, thus irrevocably changing the linguistic landscape of intergenerational communicative practices (Kutscher & Genç, 1998; Kutscher, 2008). Although adults continue to speak Lazuri among themselves, they almost exclusively speak Turkish to children as preparation for school and higher status livelihoods (Kutscher, 2008; Yuksel-Sokmen, 2015). Laz children today typically grow-up in multigenerational households with only passive exposure to Lazuri, gained through listening into adult conversations. Kutscher (2008) estimates that adults younger than 35 years of age are no longer using Lazuri with their offspring; consequently, Lazuri is now rated as definitively endangered and is predicted to become extinct within the next two generations (Moseley, 2010).

#### *Challenges in Supporting Bilingual Language Development*

Being raised with exposure to two or more languages does not guarantee that a child will become bilingual (Hoff & Ribot, 2017). Indeed, even in vibrant bilingual, western communities where two prestigious “world-languages” are spoken, such as Spanish and English in South

Florida, school-age children often lag in home language development due to social pressures to use English (Hoff, Rumiche, Burridge, Ribot, & Welsh, 2014). Variability in bilingual language outcomes is driven by children's individual language learning experiences. Simply overhearing the home language used in conversation by others is not sufficient for bilingual children to develop active use of it (Hoff, 2006). As compared to western or WEIRD cultures, where didactic interactions are common, children growing up in small-scale traditional language communities spend more time in polyadic situations and acquire words by eavesdropping others' conversations (Correa-Chavez & Rogoff, 2009; Lieven, 1994). Little is known about how overhearing an endangered language affects children's overall language development. Extant research on Spanish, for example, suggests that overhearing a language as a child may facilitate later acquisition of speech sounds and accent, as compared to late learners without prior exposure to the language, but does not yield a measurable advantage for later acquisition of morphosyntax (Knightly, Jun, Oh, & Au, 2003).

The experiences of children overhearing an endangered language, as compared to those eavesdropping non-endangered home languages, might differ based on the fact that endangered language communities not only have fewer speakers, but also fewer language-specific resources, such as television programs, books, and educational materials (Romaine, 2007). Moreover, as would be the case for Laz families, the overheard language is likely to be in a hybrid or mixed form with code-switching between the endangered vernacular and the DL (Gippert, 2012; Romaine, 2007) Laboratory-based experiments show that children as young as 30 months are able to acquire new vocabulary through overhearing third party conversation about naming objects (Akhtar, Jipson, & Callanan, 2001). However, in contrast to the laboratory, children in the real

world are more likely to overhear adult-directed speech, especially in contexts of language loss (Fishman, 1991).

The overall quality and quantity of child-directed input in each language matters and contributes to a variety of bilingual language outcomes (Paradis, 2011). For children growing up in bilingual environments, both endangered and non-endangered, use of code-switching is a natural and common conversational phenomenon (Genesee, 1989; O'Shannessy, 2015; Yuksel & Brooks, 2017). Studies of early bilingual language acquisition report that children often exhibit both intra- and inter-utterance code-switching before the age of three (De Houwer, 1990; Meisel, 1990). Code-switching allows bilingual children to stretch their limited language proficiencies (e.g., to fill in a lexical gap) by borrowing from the other language (Genesee, Boivin, & Nicoladis, 1996). Notably, in bilingual environments involving an endangered AL, children often lack confidence and competencies in using both languages and thus fall back on the DL when discourse pressure necessitates their production of an efficient response (Romaine, 2007; Yuksel & Brooks, 2017). In addition to the effect of language input, research suggests that familial attitudes and societal pressures play key roles influencing children's motivation to speak an AL (Fishman, 1991). The current study utilized two semi-structured play tasks with culturally relevant toys (animal farm, tea set), with caregivers instructed to use the AL while interacting with their child. The tasks thus provided measures of caregivers' and children's AL proficiency in two distinct contexts of social interaction, which allowed us to explore how different functional utterances and interactive contexts encouraged children to use the AL.

### *The Role of Functional Utterances and Context*

Existing research on AL acquisition underscores the importance of eliciting children's use of an AL, but has not emphasized how the functional demands of daily language use might pressure

children to rely on a DL over an AL. To become a competent speaker, children need to comprehend and master various functional utterance types (e.g., questions, labels, deictics, commands, comments, invitations) that allow them to communicate effectively in myriad conversational contexts (Ninio & Snow, 1988). When conversing with children, caregivers use a variety of functional utterance types that place unique discourse demands on the child to use their linguistic resources to respond appropriately.

Building on the activity-oriented approach of Vygotsky (1966/2016; 1978), social interactionist theories (e.g., Bruner, 1983; Ninio & Bruner, 1978) stress how culturally mediated toy play and social routines—such as peekaboo, picture book reading, or toy play—provide initial contexts for language learning. Ninio (1983) described joint picture book reading with young children as a critical context for their vocabulary acquisition, where parents point to pictures and ask questions (e.g., “What’s that?”) that prompt children to respond with familiar labels (e.g., “fish”), creating opportunities for learning new words (e.g., “whale”). Such interactions with caregivers establish routines that encourage distinct communicative practices; this, in turn, may affect frequencies of different functional utterance types across conversational contexts (McDonald & Pien, 1982; Snow et al., 1976; Tulviste, 2019; Yont, Snow, & Vernon-Feagans, 2003).

Imaginary play has been identified as a context eliciting complex language and communication (Crain-Thoreson, Dahlin, & Powell, 2001), yet the style of communication may vary considerably as a function of the specific play activity. O’Brien and Nagel (1987) explored how different types of imaginary play influence conversation patterns. They found differences in the quantity and quality of child-directed input across three play contexts: playing with dolls led to more labeling and questioning; playing with vehicles was associated with less talk and more

imaginative sounds; and shape sorting led to increased use of directives and behavior controlling utterances. Hoff-Ginsberg (1991) also found significant variation in maternal conversational style across four different settings (mealtime, dressing, book reading, toy play). Her results suggest that maternal conversational practices are often context-driven and used intentionally to direct the child's attention ("Look") or behavior ("Put it in here"), or to obtain a child's response through conversation-eliciting utterances (e.g., various types of questions, such as "What's this?").

### *Research Questions*

We analyze the bilingual play interactions of children and their caregivers to understand the influence of play context and conversational dynamics on individuals' language production. Specifically, we are interested in how children and caregivers used their ancestral language (AL), Lazuri, compared to the societal dominant language (DL), Turkish. Our study addresses four research questions:

1. To what extent were children and caregivers able to use the AL in play interactions?

We expected the adult caregivers to follow instructions and mostly use the AL while engaged in the semi-structured play sessions with the children. Children were expected to code-switch to the DL while engaged with their caregiver, rather than relying on their less fluent AL. We predict children's DL usage to be more complex than their AL usage.

2. How do children and caregivers use functional utterance types across the two languages?

We hypothesized that children would produce the simplest functional utterances in their AL (i.e., single-word utterances such as labels) and more complex functional utterances in their DL. Caregivers would produce functional utterances that elicit conversational turns from the children (questions, commands, invitations) or identify their focus of attention (labels, deictics).

3. How do the play contexts elicit use of different functional utterance types?

We predicted the animal farm would promote more naming of the various animals, while the tea set would promote more directive language, such as commands and invitations. Given the economic importance and social ritual of tea in the Laz culture (or overall Turkish culture), the tea set would elicit more comments than the animal farm.

4. Which caregiver conversational strategies and play contexts were successful in eliciting children's use of the AL?

We expected children's AL usage will be facilitated by parental AL use and by parental functional utterances that allowed for simpler responses from the children, such as labels or deictics. We predicted children would reply more often in the DL when they needed to produce more complex responses, such as answering questions or replying to invitations.

## Method

### *Participants*

We recruited fifty-nine children (27 girls, 32 boys;  $M = 30.7$  months,  $SD = 10.3$  months; range 15–48 months;  $1^{st}$  quartile = 22.5 months,  $median = 29$  months,  $3^{rd}$  quartile = 41.5 months) and their caregivers from Laz village settlements in Ardaşen (71.2%) and Fındıklı (28.8%) in Rize, Turkey. Recruitment was restricted to families where adults regularly spoke Lazuri at home and within their community with Laz elderly. All caregivers indicated that they spoke Lazuri when conversing with other adults; 55 caregivers (93%) indicated that they spoke only Turkish with the children. Although no language testing was available, all caregivers were comfortable giving an interview in Lazuri with a local gender-matched informant (data collected for an unpublished dissertation). Naturalistic fieldwork observations prior to data collection revealed that young children did not converse in Lazuri with their peers but preferred Turkish (data collected for an unpublished dissertation). Over half of the children (57.6%) lived with or

in near proximity of their grandparents, who were often the primary caregivers while the parents typically worked in the fields or factories. About half of the children ( $n = 27$ ;  $M = 31.3$  months,  $SD = 10.0$ , *range* 17–48) were recorded interacting with a grandparent (13 grandmothers, 14 grandfathers;  $M = 61.8$  years,  $SD = 8.4$ , *range* 50–80) while the remaining children ( $n = 32$ ;  $M = 30.2$  months,  $SD = 10.7$ , *range* 15–47) were recorded with a parent (21 mothers, 11 fathers;  $M = 35.0$  years,  $SD = 8.8$ , *range* 23–66). All caregivers provided written consent for videotaped participation. Children received soft animal toys as gifts.

### *Procedure*

All dyads engaged in floor play in two 10-minute tasks. They first played with the animal farm set by Fisher-Price followed by a tea party set by Schylling. At the beginning of each task, the toy set was presented in a cloth bag, allowing dyads to arrange the toys in various ways. Dyads were told to interact as they normally would; however, we instructed them to speak Lazuri (“Lazuri isinapi”).

### *Coding of Utterances*

Play sessions were videotaped in their entirety and coded using SubTrak video-coding software (Takash, Lindtvedt, & Ragir, 2006), which allows for simultaneous video viewing and coding of time-locked events. The first author watched the video recordings and transcribed all speech, with individual utterances distinguished by pause and pitch contours. For each utterance, we coded the participant (child, caregiver), and the language used (Lazuri, Turkish, or mixed), with mixed referring to the use of both languages (Lazuri and Turkish) within a single utterance (Imer, 1997). If an inter-sentential code-switched utterance contained a Lazuri lexical morpheme (e.g., noun, verb, adjective), the utterance was counted as an instance of Lazuri usage. If the utterance contained only Lazuri bound morphemes (inflectional or derivational; e.g., a Lazuri

diminutive suffix or plural inflection on a Turkish noun) or Lazuri functional morphemes (e.g., demonstrative pronouns, conjunctions) it was not counted as an instance of the AL; instead, it was categorized as a Turkish (DL) utterance<sup>1</sup>. For example, the caregiver utterance *afferin **bereskimi*** [bravo my child] was categorized as a Lazuri utterance because it contained the Lazuri noun **bere** [child] with Lazuri possessive inflection. Note that in all examples provided, Lazuri words are indicated in bold, and Turkish in italics.

Next, each utterance was coded for its functional use, using six categories (deictic, question<sup>2</sup>, label, command, comment, invitation) based on previous functional coding criteria and distinguished by pause and pitch contours (Hoff-Ginsberg, 1991; Ninio, 1980; Peirce, 1865/1982; Tomasello & Farrar, 1986). Table 1 provides a description of each coding category. Interjections (INJ), e.g., “aha”, “hmm”, were transcribed, but not analyzed. Utterances were independently coded by the first author and a trained research assistant (a native bilingual speaker of Lazuri and Turkish) with high inter-coder reliability ( $\kappa = .93$ ). All data analysis was conducted in R (R Core Team, 2018) using the RStudio environment (RStudio Team, 2016).

-----  
Table 1 about here  
-----

## Results

---

<sup>1</sup> We did not analyze mixed utterances separately because they were too few in number. Caregivers shared common structures in their mixed utterances: the most common was to combine a deictic expression of one language with a lexical item from the other language (e.g., *bu **lazuti*** [this corn] coded as a Lazuri utterance; ***him** bebek* [this doll] coded as a Turkish utterance).

<sup>2</sup> We coded for questions following Rowe, Leech, and Cabrera (2017) and achieved inter-rater reliability of 95.6% on 20% of the data. Since no significant results were found when analyzing the different question types, we do not report subcategories of questions.

Results are presented in order of our research questions. First, we describe child and caregiver language use during the play sessions. Then, we count and compare the functional utterance types used by each participant group. Third, we analyze the effect of play context on functional utterance and language use. Finally, we model the effect of caregiver conversation strategies and play context on children's AL use.

### *Language Use During Play Interactions*

Both the caregivers and children engaged in extensive code-switching between their two languages during their twenty-minute play session. Table 2 contains descriptive statistics of each groups' use of Lazuri and Turkish. Children produced the majority of their utterances in Turkish (mean = 80.4%). Overall, more of the children produced at least one utterance in Turkish (56 out of 59 children) than produced at least one utterance in Lazuri (46 out of 59 children). Children's utterances in Turkish (mean MLU = 1.97) were significantly<sup>3</sup> more complex than their Lazuri utterances (mean MLU = 1.42; Wilcoxon rank-sum  $W = 768.5$ ,  $p < .001$ ). In contrast to the children, the caregivers mostly complied with the task's instructions, producing most of their utterances in Lazuri (mean = 67.6%). Caregivers' Lazuri utterances were longer (mean MLU = 3.18) than their Turkish utterances (mean MLU = 2.33;  $t(94.096) = 8.963$ ,  $p < .001$ ), which may be due to the complexity of Lazuri verbal morphology with features such as polypersonal agreement, preverbs, and positional verbs (see Kutscher, 2008).

-----

Table 2 about here

-----

### *Use of Functional Utterance Types by Language*

---

<sup>3</sup> Children's average MLUs in each language were not normally distributed, so a Wilcoxon rank-sum test was used to test for significant differences.

Our second research question asked how participants' use of functional utterances would vary by language. To explore the interaction of language and functional utterance use, we tabulated utterance counts for each group (children, caregivers) according to these two variables (language, functional utterance type) and tested for significant patterns with chi-square tests (using the function *gmodels::CrossTable*; Warnes et al., 2018). Table 3 presents these utterance counts and standardized residuals derived from the chi-square tests. Both the children's and caregivers' use of functional utterances were not randomly distributed across their languages (Children  $\chi^2(5) = 451.973, p < .001$ ; Caregivers  $\chi^2(5) = 540.325, p < .001$ ). If the absolute value of a given cell's standardized residual is greater than or equal to  $\pm 1.96$ , it means that the observed number of utterances is significantly different ( $\alpha = .05$ ) from the distribution of utterances we would expect if there were no association between language and functional utterance type. That is, the number of utterances in the cell is either significantly greater ( $> +1.96$ ) or lesser ( $< -1.96$ ) than would be expected by chance.

-----  
Table 3 about here  
-----

Children produced significantly more labels in Lazuri than expected by chance (std. resid = 15.87), and they produced more comments (std. resid = 2.43), deictics (std. resid = 2.17), invitations (std. resid = 2.04), and questions (std. resid = 3.23) than expected in Turkish. Caregivers, in contrast, produced significantly more commands (std. resid = 7.64), invitations (std. resid = 2.48), and questions (std. resid = 2.88) in Lazuri than expected by chance, and more comments (std. resid = 5.50), deictics (std. resid = 10.38), and labels (std. resid = 8.59) than expected in Turkish.

*Influence of Play Contexts on Functional Utterance Use*

We next wanted to explore whether the different play contexts had an effect on participants' use of the various functional utterance types. To do so, we conducted a similar set of chi-square analyses. First, we split participants' utterances by language, then conducted separate chi-square tests on the effect of play context on functional utterance use. We present the results for the children first, and then the results for the caregivers.

-----  
Table 4 about here  
-----

Table 4 displays the utterance counts and standardized residuals of children's use of functional utterance types by context for each language separately. In both languages, children's use of functional utterance was significantly influenced by the play context (Lazuri  $\chi^2(5) = 189.907, p < .001$ ; Turkish  $\chi^2(5) = 121.443, p < .001$ ). The play context had both language-general and language-specific effects on children's functional utterances. With regard to language-general effects: the animal farm promoted children's use of labels (std. resid. = 4.37 for Lazuri, std. resid. = 4.85 for Turkish) while the tea set promoted use of commands (std. resid. = 4.73 for Lazuri, std. resid. = 3.66 for Turkish) and comments (std. resid. = 3.45 for Lazuri, std. resid. = 3.26 for Turkish). With regard to language-specific effects, when speaking Lazuri, children produced significantly more deictics than expected by chance while engaged with the tea set (std. resid. = 7.17). When speaking Turkish, the children produced more invitations (std. resid. = 2.58) and fewer questions (std. resid. = -2.26) than expected while engaged with the tea set.

We performed an identical analysis on the caregivers' utterances. Table 5 displays the utterance counts and standardized residuals of caregivers' use of functional utterance types by

context, split by language. In both languages, caregivers' functional utterance types were not randomly distributed across play contexts (Lazuri  $\chi^2(5) = 1009.01$ ,  $p < .001$ ; Turkish  $\chi^2(5) = 142.403$ ,  $p < .001$ ). With regard to language-general effects: the animal farm toy set promoted caregivers' use of labels (std. resid = 18.36 for Lazuri, std. resid = 5.93 for Turkish) whereas the tea set elicited more commands (std. resid = 10.82 for Lazuri, std. resid = 2.87 for Turkish) and invitations (std. resid = 4.28 for Lazuri, std. resid = 4.55 for Turkish) than would be expected by chance. In addition, there was one language-specific effect: When speaking Lazuri, caregivers produced significantly more questions than expected (std. resid. = 4.44) when playing with the animal farm.

-----  
Table 5 about here  
-----

#### *Effect of Caregiver Discourse and Play Context on Children's AL Use*

The final question of our study concerned factors which prompted children to use the AL, their dispreferred and lesser-used language. We hypothesized that both play context and characteristics of the caregivers' utterances would predict the likelihood that the child would respond in Lazuri as opposed to Turkish.

To measure the effect of caregivers' discourse, we selected only those utterances in which children were responding to a caregiver's immediately preceding conversational turn (i.e., 5,234 utterances, 70.8% of children's total). We could not fit a model with all six functional utterance types within a single variable, so we decided to reduce the levels of this nominal variable. To do so, we collapsed the functional utterances into a two-level variable: caregivers' functional utterances which increased the likelihood of the child responding in Lazuri versus all other

functional utterance types. By including this two-level variable in the statistical model, we could determine whether caregivers' functional utterances had an effect on children's language production while controlling for the other variables of interest.

As an initial step, we tabulated the utterances according to caregivers' functional utterances and children's language of response and conducted a chi-square test; see Table 6 for the results. Children's language of response was not randomly distributed across caregivers' functional utterances ( $\chi^2(5) = 144.766, p < .001$ ). Only caregivers' labels promoted children's use of Lazuri in response (std. resid. = 9.38).

-----  
Table 6 about here  
-----

We used mixed effects logistic regression (*lme4::glmer* package; Bates et al., 2015) to model effects of the caregiver's language (i.e., whether the preceding utterance was in Lazuri or Turkish), the caregiver's functional utterance type (i.e., whether the preceding utterance was a label vs. other utterance type), and play context (animal farm, tea set) as predictors of the child's use of the AL in response to the caregiver's utterance. Each independent variable was sum coded. We included children's age (mean centered and *z*-scaled) in months as a control variable and included a random intercept of dyad group. Significance testing of main effects was conducted through model comparisons using the function *lmtest::lrtest* (Zeileis & Hothorn, 2002). Table 7 presents the estimates and standard errors for each fixed effect, as well as significance of each fixed effect (given by the  $\chi^2$  statistic and associated *p*-value). The caregiver's previous language, the caregiver's previous functional utterance, and the child's age all significantly improved the model's fit ( $\alpha = .05$ ), meaning that they were significant predictors of child's AL use. When the

caregiver produced a preceding utterance in Lazuri, children were significantly more likely to respond in the AL. Also, when the caregiver's preceding utterance was a label, children were significantly more likely to respond in the AL. Child's age had an inverse effect on AL production: the older the child, the less likely they were to respond in the AL. Play context did not significantly influence the likelihood of children responding in the AL when controlling for the caregiver's language, functional utterance type, and child's age.

-----  
Table 7 about here  
-----

### **Discussion**

In communities like Rize, Turkey, where a DL (Turkish) has supplanted use of an AL (Lazuri), urgent steps must be taken to promote use of the AL with children before the language becomes extinct. As is typical in situations where an AL is critically endangered, the Laz families in our study conversed with their children almost exclusively in the DL—a decision prompted by the perceived need to prepare children for entering schools where Turkish is the language of instruction. The current study explored how functional utterance types (deictic, question, label, command, comment, invitation), produced in the context of caregiver interactions with young children, might encourage children to speak Lazuri as opposed to Turkish. We re-analyzed data from an earlier study where caregivers were asked to speak Lazuri while engaged with children in floor play with culturally relevant toy sets. The previous analyses of this dataset demonstrated pervasive code-switching, with caregivers mostly complying with the instruction to speak Lazuri and children mostly responding in Turkish (Yuksel & Brooks, 2017). The Laz children spoke Turkish in the majority (80%) of their utterances despite being spoken to in Lazuri. Their MLU

when speaking Turkish was significantly longer as compared to Lazuri. Additionally, the children's use of Lazuri was largely restricted to labeling objects. These findings indicate that the children were more capable speakers of Turkish, the DL, and were able to use it for a wider range of communicative purposes than Lazuri. Children's difficulties conversing in Lazuri may have made it challenging for the caregivers to speak exclusively in Lazuri, as approximately 32% of the caregiver input to children was in Turkish despite instructions to speak Lazuri. In light of the children's strong preference for using Turkish while engaged with their caregivers, it may take more time and require multiple sessions of Lazuri-driven caregiver input for children to use Lazuri effectively in social settings. When faced with low institutional and societal support for intergenerational transmission of an endangered language, Mac Fhlannchadha (2012) suggests that caregivers must be motivated and committed language activists if they wish to raise a bilingual child (as cited in O'Toole & Hickey, 2017).

For the current study, data analyses focused on whether the caregiver was successful in eliciting the AL or whether the child continued to speak in Turkish, using features of the preceding caregiver utterance as predictors of child AL usage. We predicted that the child's use of the AL might vary in relation to the discourse demands created by the caregiver's previous utterance. That is, given their limited linguistic resources, we expected that children might vary their language use in order to respond appropriately to different functional utterance types. We found that caregiver labels were effective in eliciting Lazuri responses, whereas the other functional utterance types were not. In the context of joint attention, Clark and Estigarribia (2011) found that caregivers provided three times more labels when interacting with one-year-olds than with three-year-olds, but were more likely to discuss the object properties after naming the objects while engaged with the older children. Notably, in the current study, the relationship between child age and caregivers'

labeling of objects was not significant in either language (Lazuri  $r(56) = -.111, p = .404$ ; Turkish  $r(56) = .185, p = .165$ ).

Excerpt (1), involving a grandmother in Fındıklı, Rize with her 32-month-old grandson, illustrates how caregivers were successful in eliciting children's production of Lazuri labels for toy figures through a series of questions and labeling acts. Heath (1983) argues that such adult-child routines provide a teaching context that focuses on the child's current state or ability, and serves to prepare them for the scholastic model where teachers expect children to respond to their questions.

Excerpt (1)

Grandmother: **haya mu non ?** (question)  
 this what is ?  
 What is this?

Grandson: *oyuncak* (label)  
 toy  
 Toy.

Grandmother: **ho mu non ?** (question)  
 yes what is ?  
 Well, what is this?

Grandson: **ho** (deictic)  
 yes  
 Yes

Grandmother: **ha biç'i en** (label)  
 this boy is  
 This is a boy.

Grandmother: **ha bozo-n** (label)  
 this girl-is  
 This is a girl.

Grandson: *bu ne ?* (question)  
 this what  
 What is this?

Grandmother: **biç'i** (label)  
 boy  
 Boy.

Grandson: **biç'i mi** (question)  
 erkek-Q  
 Is this a boy?

Grandmother: **hati bozo-n** (label)  
 that girl-is  
 That one is a girl.

Grandson: **bozo-n** (label)  
 girl-is  
 [This] is a girl.

Researchers have distinguished between two caregiver conversational styles: conversation eliciting vs. behavior directing (e.g., Hoff-Ginsberg 1991). Utterances that elicit conversational routines, such as naming objects, have been shown to facilitate vocabulary development because children are encouraged to talk more (Masur, Flynn, & Eichorst, 2005; Ninio & Bruner, 1978). In studies with young children, didactic labeling has been shown to be more beneficial for word learning than directive utterances, i.e., commands (Callanan, Akhtar, & Sussman, 2014). In contrast to the grandmother in excerpt (1), other caregivers exhibited a directive style, as illustrated in excerpt (2) involving a father in Ardaşen, Rize, engaged with his 39-month-old daughter. Here, the father does not name the toy animals, but asks his daughter where to position the toys [**so dodvaten?**] and directs the setup of the animal farm. Although his daughter follows the instructions of her father successfully, she responds exclusively in Turkish.

Excerpt (2)

Father: **ham so dodvaten?** (question)  
 this where put-us  
 Where will we put this?

Daughter: *haburiya* (deictic)  
 here to

[We will put it right] here.

Father: **gale** **kododv-i** (command)  
 Outside put-you-IMP  
 You must put it outside!

Daughter: *tamam* (comment)  
 alright  
 Alright.

Father: *afferin* (comment)  
 well done  
 Good job!

Daughter: *şimdi buda kuş* (label)  
 now this bird  
 This here is now a bird.

Father: **oxori yanda-i?** (question)  
 house side-Q  
 [Do you mean the bird] at the side of the house?

Daughter: *oldu-mu bu buraya?* (question)  
 work-Q this here  
 [Does the bird] fit here?

Father: **majura ti kelodv-i** (command)  
 other also put-IMP  
 Put the other one there, as well!

Father: **ar daha dodv-i** (command)  
 once again put-IMP  
 Try it again!

Daughter: *düşüyor* (comment)  
 fall  
 [It] falls [on the ground].

Even when the daughter labels the bird toy object in Turkish [*şimdi buda kuş*], the father does not use this moment to teach the Laz word for *kuş*. Instead he seeks clarification as to which one she means [**oxori yanda-i?**] and instructs her to put the other bird into the stable as well [**majura ti kelodvi**]. The father's frequent use of commands to direct the play behavior of his

daughter suggests passivity on the part of the child (Tulviste, 2019). We can only provide some hypothetical ideas to explain what might have motivated the more directive style of interaction in excerpt (2). One possibility is that the caregiver was concerned that his daughter would not play with the toys appropriately. Given the prominence of the livestock in the Laz culture, caregivers may have issued commands to ensure that the children put the animals inside the stable to keep the animals out of harm and in their proper position. For instance, after five minutes play time, the father in excerpt (2) says “**koçinape doloxe, majura ti gale**” ordering the daughter to keep the [humans inside and the other outside] because “**oxori doloxe va iren**” [you cannot keep animals inside the house].

Another possibility is that caregivers had concerns that their children would not understand their Lazuri. For example, after two minutes of recording time, a Laz mother asked the researcher “*Arada türkçe buǰvari?*” [Could I sometimes repeat in Turkish?], because she believed that her 46-month-old son “**Lazuri var oxǰonu**” [did not understand Lazuri]. Yet, despite such concerns, none of the recorded interactions suggested that children were struggling to play along or that their caregivers’ use of Lazuri was an impediment to a successful interaction. Thus, despite the fact that the dyads engaged in code-switching across conversational turns, as illustrated in excerpt (1) and excerpt (2), they succeeded in exchanging information and grounding the play activity to the here-and-now with reference to the toy objects. Our data analyses build on this finding and suggest that caregivers’ communicative intent and style influenced the extent to which their children used Lazuri—in particular, whether they emphasized object naming as part of the communicative routine.

### *Effect of Play Context*

The current study contrasted the functional utterances produced in the two play contexts (animal farm, tea set), which allowed us to examine how the social and communicative affordances of the activities also influenced AL use. The dyads responded to the affordances of the toy sets by producing more labels when playing with the animal farm and more commands, comments, and invitations when engaged with the tea set. While the children produced more Lazuri utterances overall while engaged with the animal farm as compared to the tea set (539 vs. 194 utterances in total), our model indicated that children's use of Lazuri was elicited by caregivers' use of labeling while playing with the animal farm, rather than a beneficial effect of play context per se.

Excerpt (3) below, recorded in Fındıklı, Rize during the animal farm task, illustrates how a father engages in a labeling routine with his 25-month-old son. The child imitates the father's utterances as they set up the toys for pretend play. The father attempts to draw the child's attention to a toy rooster with the interjection [INJ] "aha" but his son continues to play with the toy cow and the well. He disregards his father's new label **mamuli** [rooster] and repeats **tsari** [water]. The father starts labeling and physically pointing to other toy objects; now the son responds by lifting the toys and repeating **bere** [child] and subsequently **3xeni** [horse].

Excerpt (3)

Father:       **tsari şvasen** (comment)  
                   water drink-FUT  
                   [The toy cow] will drink water [from the well].

Father:       **tsari şvasen** (comment)  
                   water drink-FUT  
                   [The toy cow] will drink water [from the well].

Son:           *möh*  
                   moo  
                   [pretends cow is drinking water from the well]

Father:       **haya mamuli** (label)  
                   this rooster

This one is a rooster.

Father: aha **mamuli** (label)  
INJ rooster  
Ah, a rooster.

Son: **tsari** (label)  
water  
Water.

Father: **tsari** (label)  
water  
Water.

Father: **bere** (label)  
child [points at toy child]  
Child.

Son: [lifts toy child]

Father: **bere** (label)  
child  
Child.

Son: **bere** (label)  
child  
Child.

Father: aha **ntsxeni** (label)  
EX horse  
Ah, a horse.

Son: [stretches out hand to reach for the toy horse]

Father: **3xeni** (label)  
horse  
Horse.

Son: **3xeni** (label)  
horse  
Horse.

In contrast, in excerpt (4), a 39-month-old girl from Fındıklı, Rize does not produce any Lazuri while engaged in play with her mother in the context of the tea set. Here, the mother uses

deictics and commands to direct the behavior of her daughter. Throughout the interaction, the mother mostly converses in Lazuri, while her daughter speaks exclusively in Turkish. The daughter nevertheless demonstrates an understanding of her mother's questions and commands uttered in Lazuri and responds appropriately in Turkish accompanied with loud slurps.

Excerpt (4)

Mother:        **si**     **ti**     **ezdi** (command)  
                   you    also    take  
                   Take one as well.

Daughter:    *o*     *senin* (deictic)  
                   that    yours  
                   That one is yours.

Daughter:    *bu*    *senin* *olsun* (deictic)  
                   this    yours    be  
                   Let this one be yours.

Mother:        *tamam* **heya** **çkimi** **tas** (deictic)  
                   OK    this    mine    be  
                   OK, this one is mine.

Mother:        **skani** **naya**    **ren** ? (question)  
                   yours which    is  
                   Which one is yours?

Daughter:    *buda benim olsun* (deictic)  
                   this    mine    be  
                   Let this one be mine.

Mother:        *tamam* (deictic)  
                   OK  
                   OK.

Mother:        hayde                **şvi** (command)  
                   common-INJ    drink  
                   Common, drink it now.

Daughter:    makes loud sound of slurping out of the teacup

These differences in functional utterance use between the animal farm and tea set play contexts are consistent with previous work documenting how characteristics of speech vary as a function of the activity context in which the observations are taking place (e.g., Hoff-Ginsberg, 1991; Puccini, Hassemer, Salomo, & Liszkowski, 2010; Tamis-LeMonda, Custode, Kuchirko, Escobar, & Lo, 2019; Yont et al., 2003). The impact of the activity on communicative practices has been examined by contrasting contexts of action versus regard, which alter the dynamics of caregiver-child interaction. Puccini and colleagues (2010) compared caregiver-infant communication during free floor play (i.e., a context of action) and while exploring a richly decorated room (i.e., a context of regard), and observed communicative interactions to be structured by the affordances of the contexts, especially with regards to whether infants could manually (as opposed to visually) explore objects. Puccini et al. (2010) observed higher frequencies of naming objects in the context of regard than in the context of action; in contrast, the context of action elicited more frequent demonstrations of actions through object manipulation. In our study, the caregivers and children treated play with the animal farm as a context of regard and engaged with the tea set as a context of action.

As exemplified in the excerpts, our results suggest that caregivers used the animal farm toy figures for didactic purposes. Both caregivers and children heavily used labels to identify the parts of the barn and to name the various animal figures. In contrast to the referential communication style observed in the animal farm context, dyads used the tea set context to enact cultural rituals in pretend play—treating the toys as if they were real objects—and using commands to indicate, for example, how to hold a teacup, set up the table, or express politeness, and invitations to initiate further engagement. Given the prominence of the tea service in social life of the Laz culture,

caregivers may have issued commands as demonstrated in excerpt (4) to ensure that their children served the tea correctly, especially with a visitor [the first author] in their home.

*Practical Implications for Bilingualism in Communities Facing Language Loss*

Children play an important role in the AL transmission and maintenance and should be seen as active agents in the language socialization process rather than passive recipients (Fishman, 1991; Luykx, 2005; O'Shannessy, 2015). In indigenous communities where rapid modernization is causing language shift from an ancestral language to a state-official language, caregivers are stigmatized and often branded as linguistically deficient if they do not provide adequate DL socialization for their children. Encouraging children's learning of the DL is seen to aid children's social and economic survival in the mainstream culture (King, 2001; Luykx, 2005). As a result, caregivers may stop speaking their AL with their children. Compounding the lack of AL exposure in the home, once they enter school, children will have greater access to DL linguistic resources, such as books, websites, and videos, that are recognized and valued by the mainstream culture. Together these factors conspire to promote children's usage of the state-official language over the AL of their community (Fillmore, 1991; Luykx, 2005). In the current study, older children were less likely to use Lazuri than younger children; this may be due in part to families' increased emphasis on DL proficiency as their children approach school entry.

In the case of the Laz, the almost complete absence of literacy materials in the AL makes it difficult for caregivers to engage in routines, such as joint picture-book reading, that promote vocabulary development. The increased availability of books, television programs, and other learning materials in Turkish makes it almost inevitable that the less prestigious Laz language will be in constant competition with Turkish. Under such circumstances it becomes necessary for caregivers and the community as a whole to view AL preservation as a priority and a communal

endeavor, while emphasizing bilingualism as an asset and not a deficiency. It takes a whole village to raise an indigenous language. An anonymous Laz proverb interlaces the strong relationship between language and identity, **Nananena gondinina, ti skaniti gondineri giğun!** [If you lose your mother tongue, you lose your identity]. For children to inherit their AL and understand their ethnic identity, families must speak the AL with children while engaged in daily routines and in stimulating learning contexts, such as imaginary play, that mimic day-to-day social activities and cultural practices.

### **Limitations and Conclusions**

Several limitations in our study might guide future research. Firstly, we can only draw tentative conclusions about AL practices from a snapshot of caregiver-child interactions taken in two play contexts on a single visit. Future longitudinal research should focus on how children's exposure to Lazuri might change over time or while engaged with different family members. Secondly, although our models used caregiver speech to predict children's subsequent language use, we cannot assume that the conversational patterns were only driven by the caregivers. Indeed, we expect that the language preferences and practices of the Laz children likely impacted the caregivers' frequency and choice of utterance type and language. In particular, the children varied widely in age (i.e., from 15 to 48 months), which no doubt influenced the observed patterns of caregiver-child interaction. Thirdly, in future studies, it would be of interest to examine adult dual language usage, both in structured and unstructured contexts, in relation to their children's language development. Unfortunately, our dataset lacked measures of adult AL fluency and relied on caregiver self-report that they felt comfortable to interact in the AL for at least 20 minutes.

Raising bilingual children is no easy task and requires parental persistence and patience. Oftentimes bilingual parents worry that their children might potentially develop an accent in the

mainstream language or confuse languages (e.g., Byers-Heinlein & Lew-Williams, 2013; Place & Hoff, 2011; Yuksel & Brooks, 2017). Yet, if their goal is to raise bilingual children, especially amidst limited access to AL teaching resources as is typically seen in language shift contexts, then families should minimize use of the DL and concentrate on modeling use of the AL. Children need to be provided ample opportunity to speak the AL and have their AL use reinforced within the home and with the help of members of their community. Our findings highlight the importance of using labels as a means of encouraging children to begin using AL vocabulary despite their limited ability to speak the language. Even though the caregivers and children were code-switching extensively across conversational turns, the conversations seemed to flow naturally, with children for the most part seeming to understand what was said. This suggests that with additional encouragement and emphasis on AL usage within the home, the children have the potential to become bilingual speakers, much as their parents and grandparents did in previous generations.

### References

- Akhtar, N., Jipson, J., & Callanan, M. A. (2001). Learning words through overhearing. *Child Development, 72*(2), 416-430. <https://doi.org/10.1111/1467-8624.0028>
- Ascherson, N. (1996). *The Black Sea*. New York: Hill & Wang.
- Bates, D, Maechler, M., Bolker, B., & Walker, S. (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software, 67*(1), 1-48. arXiv:1406.5823
- Braund, D. (1994). *Georgia in antiquity: a history of Colchis and Transcaucasian Iberia 550 BC–AD 562*. Oxford, UK: Clarendon Press.
- Bruner, J. S. (1983). *Child's talk: Learning to use language*. New York: W. W. Norton & Company.
- Byers-Heinlein, K., & Lew-Williams, C. (2013). Bilingualism in the early years: What the science says. *LEARNING Landscapes, 7*(1), 95-112 .Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6168212/>.
- Callanan, M. A., Akhtar, N., & Sussman, L. (2014). Learning words from labeling and directive speech. *First Language, 34*(5), 450-461. <https://doi.org/10.1177/0142723714553517>.
- Clark, E. V., & Estigarribia, B. (2011). Using speech and gesture to introduce new objects to young children. *Gesture, 11*(1), 1-23. <https://doi.org/10.1075/gest.11.1.01cla>.
- Correa-Chávez, M., & Rogoff, B. (2009). Children's attention to interactions directed to others: Guatemalan Mayan and European American patterns. *Developmental Psychology, 45*(3), 630. <https://doi.org/10.1037/a0014144>.
- Crain-Thoreson, C., Dahlin, M. P., & Powell, T. A. (2001). Parent-child interaction in three conversational contexts: Variations in style and strategy. *New Directions for Child and Adolescent Development, 2001*(92), 23-38. <https://doi.org/10.1002/cd.13>.

- De Houwer, A. (1990). *The acquisition of two languages from birth: A case study*. Cambridge, UK: Cambridge University Press.
- Devlet İstatistik Enstitüsü (Turkey) (1968). *Genel nüfus sayımı : idari bölünüş : il, ilçe, bucak ve köy (muhtarlık) nüfusları, 24.10.1965* =: Census of population by administrative division: province, district, sub-district, and village (muhtarlık) population. Ankara: T.C. Başbakanlık Devlet İstatistik Enstitüsü.
- Eisenbeiss, S. (2006). Documenting child language. *Language Documentation and Description*, 3, 106-140.
- Fillmore, L. W. (1991). When learning a second language means losing the first. *Early Childhood Research Quarterly*, 6(3), 323-346. [https://doi.org/10.1016/S0885-2006\(05\)80059-6](https://doi.org/10.1016/S0885-2006(05)80059-6).
- Fishman, J. A. (1991). *Reversing language shift*. Philadelphia: Multilingual Matters.
- Genesee, F. (1989). Early bilingual development: One language or two? *Journal of Child Language*, 16(1), 161–179. <https://doi.org/10.1017/S0305000900013490>.
- Genesee, F., Boivin, I., & Nicoladis, E. (1996). Talking with strangers: A study of bilingual children's communicative competence. *Applied Psycholinguistics*, 17(4), 427-442. <https://doi.org/10.1017/S0142716400008183>.
- Gippert, J. (2012). Language-specific encoding in endangered language corpora. In F. Seifart, G. Haig, N. P. Himmelmann, D. J., A. Margetts, & P. Trilsbeek (Eds.), *Potentials of language documentation: Methods, analyses, and utilization* (pp. 25-31). Honolulu: University of Hawai'i Press. Retrieved from <https://scholarspace.manoa.hawaii.edu/bitstream/10125/4512/1/03gippert.pdf>.

- Grinevald, C. (2007). Linguistic fieldwork among speakers of endangered languages. In O. Miyaoaka, O. Sakiyama, & M. E. Krauss (Eds.), *The vanishing languages of the Pacific rim* (pp. 35-76). New York: Oxford University Press.
- Hann, C. (1997). Ethnicity, language and politics in north-east Turkey. In C. Govers, & H. Vermeulen (Eds.), *The politics of ethnic consciousness* (pp 121- 156). London: Palgrave Macmillan.
- Heath, S. B. (1983). *Ways with words: Language, life and work in communities and classrooms*. Cambridge, UK: Cambridge University Press.
- Hoff, E. (2006). How social contexts support and shape language development. *Developmental Review*, 26(1), 55-88. <https://doi.org/10.1016/j.dr.2005.11.002>.
- Hoff, E., Rumiche, R., Burrige, A., Ribot, K. M., & Welsh, S. N. (2014). Expressive vocabulary development in children from bilingual and monolingual homes: A longitudinal study from two to four years. *Early Childhood Research Quarterly*, 29(4), 433-444. <https://doi.org/10.1016/j.ecresq.2014.04.012>.
- Hoff, E., & Ribot, K. M. (2017). Language growth in English monolingual and Spanish-English bilingual children from 2.5 to 5 years. *The Journal of Pediatrics*, 190, 241-245. <https://doi.org/10.1016/j.jpeds.2017.06.071>.
- Hoff-Ginsberg, E. (1991). Mother-child conversation in different social classes and communicative settings. *Child Development*, 62(4), 782-796. <https://doi.org/10.1111/j.1467-8624.1991.tb01569.x>
- Imer, K. (1997). Türkçe-Lazca konuşan ikidillilerde kod değiştirimi. In K. Imer & E. Uzun (Eds.), *Proceedings of the VIII International Conference on Turkish Linguistics* (pp. 275-283). Ankara: Ankara University. <https://doi.org/10.1080/01690960701307348>.

- King, K. A. (2001). *Language revitalization processes and prospects: Quichua in the Ecuadorian Andes*. London: Cromwell Press.
- King, K. A., & Fogle, L. W. (2013). Family language policy and bilingual parenting. *Language Teaching, 46*(2), 172-194. <https://doi.org/10.1017/S026144481200049>.
- Kneebone, L. B., Christelow, J., Neuendorf, A., & Skelton, F. (2012). Footprints in time: the longitudinal study of indigenous children: an overview. *Family Matters, 91*, 62-68.
- Knightly, L. M., Jun, S. A., Oh, J. S., & Au, T. K. F. (2003). Production benefits of childhood overhearing. *The Journal of the Acoustical Society of America, 114*(1), 465-474. <https://doi.org/10.1121/1.1577560>.
- Kutscher, S. (2008). The language of the Laz in Turkey: Contact-induced change or gradual language loss? *Turkic Languages, 12*(1), 82-102. Retrieved from <https://core.ac.uk/download/pdf/83653179.pdf>.
- Kutscher, S., & Genç, N. S. (1998). *Ardeşen narrates-Ardeşeni na isinapinenpe* (Vol. 14). Lincom Europa.
- Lebon-Eyquem, M. (2015). Specific linguistic profiles in a Creole-speaking area: Children's speech on Reunion Island. *First Language, 35*(4-5), 327-340. <https://doi.org/10.1177/0142723715617875>.
- Lieven, E. V. M. (1994). Crosslinguistic and crosscultural aspects of language addressed to children. In C. Gallaway & B. J. Richards (Eds.), *Input and interaction in language acquisition* (p. 56-73). Cambridge University Press. <https://doi.org/10.1017/CBO9780511620690.005>.
- Luykx, A. (2005). Children as socializing agents: Family language policy in situations of language shift. In J. Cohen, K.T. McAlister, J. MacSwan, & K. Rolstad (Eds.), *ISB4:*

- Proceedings of the 4th International Symposium on Bilingualism* (pp. 1407-1414).  
Somerville, MA: Cascadilla Press.
- Lüpke, F. (2010). Research methods in language documentation. *Language Documentation and Description*, 7, 55-104. Retrieved from <https://core.ac.uk/reader/2794004>.
- Mac Fhlannchadha, P. (2012). An tuismitheoir mar gníomhaire [The parent as activist]. In B. Ó Broin (ed.), *Thógamar le Gaeilge Iad [We raised them with Irish]* (101–107). Baile Átha Cliath (Dublin): Coiscéim.
- Masur, E. F., Flynn, V., & Eichorst, D. L. (2005). Maternal responsive and directive behaviours and utterances as predictors of children's lexical development. *Journal of Child Language*, 32(1), 63-91. <https://doi.org/10.1017/S0305000904006634>.
- McDonald, L., & Pien, D. (1982). Mother conversational behaviour as a function of interactional intent. *Journal of Child Language*, 9(2), 337-358.  
<https://doi.org/10.1017/S030500090000475X>.
- Meakins, F., & Wigglesworth, G. (2013). How much input is enough? Correlating comprehension and child language input in an endangered language, *Journal of Multilingual and Multicultural Development*, 34(2), 171-188.  
<https://doi.org/10.1080/01434632.2012.733010>.
- Meisel, J. M. (Ed.). (1990). *Two first languages: Early grammatical development in bilingual children*. Berlin: Walter de Gruyter.
- Montrul, S. (2016). *The acquisition of heritage languages*. Cambridge, UK: Cambridge University Press.
- Moseley, C. (Ed.). (2010). *Atlas of the World's Languages in Danger*. UNESCO.

- Ninio, A. (1980). Picture-book reading in mother-infant dyads belonging to two subgroups in Israel. *Child Development*, 51(2), 587-590. <https://doi.org/10.2307/1129299>.
- Ninio, A. (1983). Joint book reading as a multiple vocabulary acquisition device. *Developmental Psychology*, 19(3), 445-451. <https://doi.org/10.1037/0012-1649.19.3.445>.
- Ninio, A., & Bruner, J. (1978). The achievement and antecedents of labeling. *Journal of Child Language*, 5(1), 1-15. <https://doi.org/10.1017/S0305000900001896>.
- Ninio, A., & Snow, C. (1988). Language acquisition through language use: The functional sources of children's early utterances. In Y. Levy, I. Schlesinger, & M.D.S. Braine (Eds.), *Categories and processes in language acquisition* (pp. 11-30). Hillsdale, NJ: Erlbaum.
- O'Brien, M., & Nagel, K. (1987). Parents 'speech to toddlers: the effect of play context. *Journal of Child Language*, 14(2), 269-279. <https://doi.org/10.1017/S0305000900012927>.
- O'Shannessy, C. (2015). Multilingual children increase language differentiation by indexing communities of practice. *First Language*, 35(4-5), 305-326. <https://doi.org/10.1177/0142723715609227>.
- O'Toole, C., & Hickey, T. M. (2017). Bilingual language acquisition in a minority context: using the Irish-English Communicative Development Inventory to track acquisition of an endangered language. *International Journal of Bilingual Education and Bilingualism*, 20(2), 146-162. <https://doi.org/10.1080/13670050.2016.1179256>.
- Ozfidan, B., Burlbaw, L. M., & H. Aydin (2018). The minority languages dilemmas in Turkey: A critical approach to an emerging literature. *Journal of Educational Issues*, 4(1), 1-19. ISSN 2377-2263

- Paradis, J. (2011). The impact of input factors on bilingual development: Quantity versus quality. *Linguistic Approaches to Bilingualism*, *1*(1), 67-70. <https://doi.org/10.1075/lab.1.1.09par>.
- Peirce, C. S. (1865/1982). Logic of the sciences. In M. Fisch, C. Kloesel, E. Moore, N. Houser *et al.* (Eds.), *The writings of Charles S. Peirce: A chronological edition* (Vol 1., pp. 322-336). Bloomington, IN: Indiana University Press.
- Place, S., & Hoff, E. (2011). Properties of dual language exposure that influence 2-year-olds' bilingual proficiency. *Child Development*, *82*(6), 1834-1849. <https://doi.org/10.1111/j.1467-8624.2011.01660.x>.
- Puccini, D., Hassemer, M., Salomo, D., & Liszkowski, U. (2010). The type of shared activity shapes caregiver and infant communication. *Gesture*, *10*(2-3), 279-296. DOI: 10.1075/gest.10.2-3.08puc.
- R Core Team (2018). R: A Language and Environment for Statistical Computing. R Foundation for Statistical Computing, Vienna, Austria URL <https://www.R-project.org>.
- Rowe, M. L., Leech, K. A., & Cabrera, N. (2017). Going beyond input quantity: Wh-questions matter for toddlers' language and cognitive development. *Cognitive Science*, *41*, 162-179. <https://doi.org/10.1111/cogs.12349>.
- Romaine, S. (2007). Preserving endangered languages. *Language and Linguistics Compass*, *1*(1-2), 115-132. <https://doi.org/10.1111/j.1749-818X.2007.00004.x>.
- RStudio Team (2016). RStudio: Integrated Development for R. Boston, MA: RStudio Inc. Retrieved from <http://www.rstudio.com/>.
- Snow, C. E., Arlman-Rupp, A., Hassing, Y., Jobse, J., Joosten, J., & Vorster, J. (1976). Mothers' speech in three social classes. *Journal of Psycholinguistic Research*, *5*(1), 1-20. <https://doi.org/10.1007/BF01067944>.

Takash, S. G., Lindtvedt, K. A., & Ragir, S. (2006, August). TakLin SubTrak video coder.

Invited presentation in the symposium on New Technology for Behavioral Analysis at the *Annual Meeting of the Animal Behavior Society*, Snowbird, UT.

Tamis-LeMonda, C. S., Custode, S., Kuchirko, Y., Escobar, K., & Lo, T. (2019). Routine language: Speech directed to infants during home activities. *Child Development, 90*(6), 2135-2152. DOI:10.1111/cdev.13089

Tomasello, M., & Farrar, M. J. (1986). Joint attention and early language. *Child Development, 57*(6), 1454-1463. <https://doi.org/10.2307/1130423>.

Tulviste, T. (2019). Mother's conversational style in a changing developmental context.

*TRAMES: A Journal of the Humanities & Social Sciences, 23*(3). 277-286.

<https://doi.org/10.3176/tr.2019.3.01>.

Warnes, G., Bolker, B., Lumley, T., & Johnson, R. C. (2018). *gmodels: Various R programming tools for model fitting*. R package version 2.18.1. <https://CRAN.R-project.org/package=gmodels>

Vygotsky, L. S. (1966/2016). (N. Veresov & M. Barrs, Transl.). Play and its role in the mental development of the child. *International Research in Early Childhood Education, 7*(2), 3-25. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1138861.pdf>.

Vygotsky, L. S. (1978). *Mind and society: The development of higher mental processes*.

Cambridge, MA: Harvard University Press.

Yont, K. M., Snow, C. E., & Vernon-Feagans, L. (2003). The role of context in mother-child interactions: An analysis of communicative intents expressed during toy play and book reading with 12-month-olds. *Journal of Pragmatics, 35*(3), 435-454.

[https://doi.org/10.1016/S0378-2166\(02\)00144-3](https://doi.org/10.1016/S0378-2166(02)00144-3).

Zeileis, A., & Hothorn, T. (2002). Diagnostic Checking in Regression Relationships. *R News*, 2(3), 7–10.

Yuksel, P., & Brooks, P. J. (2017). Encouraging usage of an endangered ancestral language: A supportive role for caregivers' deictic gestures. *First Language*, 37(6), 561-582.

<https://doi.org/10.1177/0142723717713502>

Yuksel-Sokmen, P. O. (2015). *Tales of language loss and language maintenance: Elicited ancestral language use in Lazuri-Turkish and Turkish-German caregiver-child dyads during structured play* (Doctoral dissertation, City University of New York). CUNY Academic Works. [https://academicworks.cuny.edu/gc\\_etds/1197](https://academicworks.cuny.edu/gc_etds/1197)

**Table 1**

*Examples of Functional Utterance Types in Lazuri and Mixed (Turkish and Lazuri) with English Glosses. Lazuri words are in bold, Turkish in italics.*

Type	Definition	Lazuri	Mixed	English
deictic	Person uses a demonstrative pronoun, endearment, or other deictic expression not including named objects.	<b>haʒi hante</b> <b>bozo-ʒkʷimi</b>	<b>haʒi bunlar</b> <i>kız-ım</i>	[now these daughter-mine]
question	Person uses an interrogative form to query.	<b>kochi</b> <b>nakon?</b>	<b>kochi kaç</b> <i>tane var?</i>	[how many men are there?]
label	Person labels object (with or without demonstratives)	<b>ham puci</b> <b>ren</b>	<i>bu puci dir</i>	[this is a cow]
command	Person uses verb into the imperative form.	<b>xolo</b> <b>kodolob-i!</b>	<b>xolo koy!</b>	[again pour]
comment	Person comments on event, action, or object.	<b>nako skva</b> <b>dadal-epe</b>	<i>nekadar güzel</i> <b>dadal-epe</b>	[what beautiful toy-s]
invitation	Person initiates a cooperative activity.	<b>haʒo gale</b> <b>gogamir-at</b>	<b>haʒo gale</b> <i>çıkartal-ım</i>	[like this, let's take it outside]

*Note: Bozo can mean daughter (see Table 1) or girl (see Excerpt 1)*

**Table 2***Language Use by Participant*

	Children ( <i>n</i> =59)		Caregivers ( <i>n</i> =59)	
	Lazuri	Turkish	Lazuri	Turkish
Mean # utterances (SD)	12.5 (18.4)	61.2 (51.3)	210.6 (92.5)	95.5 (48.9)
Mean % utterances (SD)	16.2 (18.8)	80.4 (24.0)	67.6 (15.4)	32.4 (15.4)
Mean MLU (SD)	1.42 (0.48) <i>n</i> = 46	1.97 (0.78) <i>n</i> = 56	3.18 (0.37)	2.33(0.63)

*Note: MLUs were calculated only for utterances that were purely Lazuri or Turkish. Utterances that featured any mixing were excluded. Children who did not produce utterances in a language (MLU = 0) were excluded from the calculation of group mean and SD.*

**Table 3**

*Participants' Number of Functional Utterances by Type and Language (and Standardized Residuals)*

	Children ( <i>n</i> = 59)			Caregivers ( <i>n</i> = 59)		
	Lazuri	Turkish	Total	Lazuri	Turkish	Total
Command	63 (0.74)	273 (-0.34)	336	4349 (7.64)	1295 (-11.30)	5644
Comment	61 (-5.36)	639 (2.43)	700	1560 (-3.72)	937 (5.50)	2497
Deictic	136 (-4.77)	1059 (2.17)	1195	1514 (-7.02)	1127 (10.38)	2641
Invitation	4 (-4.50)	158 (2.04)	162	701 (2.48)	229 (-3.67)	930
Label	424 (15.87)	745 (-7.20)	1169	1304 (-5.81)	927 (8.59)	2231
Question	45 (-7.12)	683 (3.23)	728	2575 (2.88)	970 (-4.26)	3545
Total	733	3557	4290	12003	5485	17488

**Table 4**

*Children's (n = 59) Number of Functional Utterances by Type and Context, Split by Language  
(and Standardized Residuals)*

	Lazuri			Turkish		
	Animal Farm	Tea Set	Total	Animal Farm	Tea Set	Total
Command	27 (-2.84)	36 (4.73)	63	125 (-3.00)	148 (3.66)	273
Comment	31 (-2.07)	30 (3.45)	61	330 (-2.67)	309 (3.26)	639
Deictic	57 (-4.30)	79 (7.17)	136	605 (-1.13)	454 (1.38)	1059
Invitation	2 (-0.55)	2 (0.92)	4	74 (-2.11)	84 (2.58)	158
Label	389 (4.37)	35 (-7.29)	424	548 (4.85)	197 (-5.91)	745
Question	33 (-0.02)	12 (0.03)	45	446 (1.85)	237 (-2.26)	683
Total	539	194	733	2128	1429	3557

**Table 5**

*Caregivers' (n = 59) Number of Functional Utterances by Type and Context, split by Language  
(and Standardized Residuals)*

	Lazuri			Turkish		
	Animal Farm	Tea Set	Total	Animal Farm	Tea Set	Total
Command	1761 (-10.42)	2588 (10.82)	4349	595 (-2.79)	700 (2.87)	1295
Comment	787 (-0.78)	773 (0.81)	1560	442 (-1.85)	495 (1.90)	937
Deictic	741 (-1.58)	773 (1.64)	1514	572 (-0.35)	555 (0.36)	1127
Invitation	285 (-4.12)	416 (4.28)	701	70 (-4.42)	159 (4.55)	229
Label	1154 (18.36)	150 (-19.07)	1304	607 (5.93)	320 (-6.11)	927
Question	1498 (4.44)	1077 (-4.61)	2575	539 (1.76)	431 (-1.82)	970
Total	6226	5777	12003	2825	2660	5485

**Table 6**

*Effect of Caregivers' Functional Utterance on Child's Language Choice (n = 59): number of utterances (and Standardized Residuals)*

Caregiver's previous functional utterance	Child's language of response	
	Lazuri	Turkish
command	80 (-3.32)	559 (1.56)
comment	35 (-3.05)	287 (1.43)
deictic	61 (-1.48)	346 (0.69)
invitation	5 (-2.77)	84 (1.30)
label	188 (9.38)	343 (-4.41)
question	141 (-0.75)	689 (0.35)

**Table 7***Mixed Effects Logistic Regression Model Predicting Children's Use of AL*

	$\beta$	S.E.	$\chi^2$	$p(\chi^2)$
(Intercept)	-3.847	0.259		
Caregiver's Language			155.250	< .001
Lazuri	1.939	0.177		
Turkish	-1.939			
Caregiver's Functional Utterance			55.243	< .001
Label	1.131	0.150		
Other	-1.131			
Play context			1.560	.212
Farm	0.168	0.134		
Tea set	-0.168			
Child's Age	-0.052	0.019	7.318	.007