A Child's Display of Sequential Knowledge through Repetition of Boundary Tones: A Case Study

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Park, Yujong. (2014). A Child's Display of Sequential Knowledge through Repetition of Boundary Tones: A Case Study. Language Research, 50.3, 767-793.

Although repetition of prosody plays a significant role in children's language development, few studies have investigated the interactional role of children's use of boundary tones in talk-in-interaction. This study investigates the interaction between a two year old Korean child and her caretakers to describe the child's ability to participate in building adjacency pair sequences using boundary tone repetition. Analysis shows that the child acts as a competent interactant by building sequences, with the adult's evaluative repeats following immediately without delay after the child's initiation attempts. Adults are seen to ratify the child's turn with reference to articulation rather than with regard to interactional significance. The findings support constructivist approaches to language development by showing how the child builds up an inventory of constructions derived from interaction between what she hears and what she wants to say, specifically through boundary tones. Repeats of boundary tones are identified as providing opportunities to learn different social actions performed through sentence final intonation.

Keywords: conversation analysis, boundary tones, child language development, sequential knowledge, Korean

1. Introduction

The importance of input in young children's development of language has been supported by past research which showed how a large part of the child's first word production consists of repetition of child-directed speech from an adult (Brown 1999; Lieven et al. 2009) and the child's ability to produce relevant action through what she/he observed in prior interaction with their parents (Wootton 1997). However, studies on the

role of prosody in children's language beyond the individual utterance are still relatively few in number, partly due to the complexity involved in analyzing elements of the prosodic system, which consists of various aspects of speech including pitch patterns, intonation, stress, accent and tone (Selkirk 1995). The majority of research on child language has also focused on individual, isolated segments of talk rather than social actions built through talk-in-interaction although the important role that interaction plays in child language development has been noted by many in recent years (Tarplee 2010; Wootton 1997, 2010). In this paper, sequences of turns between a young child (22 months old) and her caretakers are analyzed using conversation analytic methodology to demonstrate that even though the child does not have the words to formulate sentences, she is nonetheless able to engage in interaction with caretakers by employing repetition utilizing boundary tones (prosody). A child of 22 months old was chosen in order to provide comparable results with prior conversation analytic studies on child interaction with their caretakers (Tarplee 2010; Wootton 1997, 2006, 2007, 2010).

Conversation analysis views conversation as the most basic form of talk and demonstrates how participants both produce and respond to social contexts (Schegloff 2007). The current study compares between child's utterances that follow the adult's initiation (through repetition) with child's utterances that initiate a sequence. Thus, rather than locating language development within the individual child's head (Bohannon & Stanowicz 1988), the study will locate language development within social interaction. The child in the one word stage displays herself as a capable social actor through the use of boundary tones in building sequences with adults playing a role in this development by employing repetition. Such a perspective views language as a mode of social action and social tool for shaping alignment and social identities of participants (Malinowski 1959, cited from M. Goodwin & C. Goodwin 2000) which can add explanatory value to traditional concepts in developmental psychology and linguistics (Bohannon & Stanowicz 1988; Vihman 1996).

The paper is organized as follows. The next section provides a brief review of conversation analytic studies on child language development

followed by related studies on prosody and child language acquisition. In sections 3 and 4, the data collected for this study is explicated and the results of the analysis are reported in two parts. The implication of the current study for child language studies is provided in the final section.

2. Theoretical Background and Literature Review

2.1. Conversation Analytic Studies on Child Language Development

In response to earlier nativist claims, the analysis of input has moved from being located in the study of registers to being located in discourse analytic studies by the early 1990s (Snow 1994). Conversation analysis, in particular, has made an important contribution to the study of children and their interactions by locating the child's developing control of language "in use" (Gardner & Forrester 2010).

Although conversation analytic studies largely focused on ordinary talk between adult members of the community, an increasing number of studies are beginning to investigate children's use of language in interaction with their peers and adults. The pioneering work of Wootton (1997) paved the way for the study of sequential understandings that inform the child's (from the age of two) verbal behaviors. Wootton (1997) analyzed sequences of child language behavior, paying systematic attention to figuring out the significance which particular forms of requests, the linguistic selections used, had for the child and exemplified how agreement played a pivotal role in achieving mutual understanding between the child and the adult. Corrin (2010) showed how the method of conversation analysis can contribute to child language research by examining children's self-initiated repair practices. She found that repair practices are found early in communicative proto-verbal development and that it establishes a joint focus between adult and child. In a series of studies, Tarplee (1996, 2010) analyzed dyadic interactions between children aged between 1;7 and 2;3 and their carers engaged in picture labelling activities. She found that repeating turns following a child's attempt at labelling a picture can be distinguished in terms of their interactional accomplishments and in terms of their proso-

dic design, suggesting analysts to be cautious in the interpretation of the somewhat superficial treatment of a class of objects like 'repetitions' which appears in the child language literature. Closely related to this study, Tarplee (2010) suggested that child-adult interaction at an early age allows child's picking up parts of the adult's talk and imitating it to become the main interactional business. Except for Tarplee, earlier child speech aged under two is more difficult to find; largely because it is difficult to locate longer sequences of talk when children are in the one word stage. Therefore, speech of young children between the first and second year of their life has mostly been conducted through analysis of isolated, individual utterances that focused on linguistic aspects of language components. As a field, language acquisition continues to be dominated by research that deals largely with the actions of the speaker either as parent or as child in isolation from the interactional context. The contribution of the hearer is largely absent in this research tradition. However, much can be missed by focusing simply on the contribution of one speaker or on words or vocalizations as discrete entities distinct from the unit of talk. Conversely, much can be gained by shifting the focus to interaction and participation frameworks (Goffman 1981; Goodwin & Goodwin 2000) where both speaker and hearer align to and shape the talk in progress, as the small but growing number of studies using this approach to investigate the interactions of young children have shown (see for example, Jones & Zimmerman 2003; Kidwell 2005; Tarplee 1996, 2010; Wootton 1997, 2006, 2007, 2010 *inter alias*). To give a full view of the phenomenon in focus, however, a review of linguistically oriented studies on young child acquisition of prosody would be necessary.

2.2. Studies on boundary tones in child language

Researchers generally agree that children between the age of 1 and 2 enter a transition period in which constructed multi-word speech gradually emerges. Dore et al. (1976) described this period as being something more than one-word speech on the one hand and something less than syntax on the other. Several studies (Jusczyk 2001; Zamuner et al. 2004) showed

that children at this age are sensitive to prosodic patterns in the input and can identify word-level units by looking for regularities with higher phonotactic probability in their surroundings. For example, Cutler (1994) stated that infants utilize a rhythmic segmentation procedure to segment speech in different language structures (e.g., stress-based, syllabic, and moraic rhythm languages) and argued that the ability to process rhythm is inborn; by using this ability, infants are able to overcome the segmentation problem and take their first step towards compiling their own lexicon. Additionally, Choi and Muzuka (2003) proved that children as young as three years old are capable of using prosody to segment ambiguous sentences to the extent that the sentence did not include syntactic ambiguity. They suggested that the acquisition of prosody might begin earlier than the acquisition of syntax thereby providing evidence for 'prosodic bootstrapping' which claims that infants' sensitivity to the prosodic aspects of speech play a critical role in language acquisition by allowing infants to bootstrap into other aspects of language (Gerken, Jusczyz & Mandel 1994).

In terms of speech production, it is now understood that children begin to produce language specific patterns and perform various pragmatic functions (Halliday 1975, 1979) during the second half of their first year. Whalen et al. (1991) described language specific differences between the reduplicative babbling of French and English learning infants according to the input they receive. Jun (2006) investigated a Korean child's acquisition of prosody between the ages 14-22 month and showed how phonological patterns (such as phonemic values) develop between 2 and 22 month of the child's speech. Vihman (1996) provides results from various empirical studies conducted in this area, and reports that the collection of individual studies suggests individual variation in the use of prosody in the transition from the prelinguistic to the early word period rather than showing a generalizable pattern. These studies show that investigating the interaction of prosodic form and pragmatic or communicative function could provide evidence for the child's use of input available in the ambient environment in producing their first words to communicate with the outside word.

Prosodic qualities of child-directed speech may provide children with information about constituent stress and other aspects of syntax or word

formation. Flax et al. (1991) state that there is a significant interaction of terminal contour and communicative function in early speech. The study (1991) concludes that children use rising contours for requests, yes-no responses, protests and use non-rising contours for comment-interaction. One limitation of their study is their use of perceptual judgment rather than objective measures in proving their findings.

In the next section, a description of the participants and analytical method used for the study will be provided followed by a brief characterization of the child's phonological development stage. Finally, an analysis of the adults' and child's intonational patterns in interaction contrasting the child's use of repetition through prosody (boundary tones) in performing social actions will be provided.

3. Data and Method of Study

The excerpts that were chosen for analysis in this paper represent a total of two hour video-taped interaction collected throughout a month between one child (Hannah) aged 22 months and two adults. Only one child was selected to allow in-depth analysis of her productions although individual characteristics may be found. The data consists of a series of interaction between the child and two Korean adults, containing naturally occurring spontaneous speech (there were no scripts or prompts provided and the participants were videotaped as they engaged in natural play). One of the adults (Adult 1) has established a close relationship with the child, such that the child calls her 'auntie' while the other adult (Adult 2) encountered the child for the first time for data collection purpose. Therefore, most of the interaction occurred between Hannah and adult 1. Hannah has been exposed to the Korean language spoken by her parents and Korean speaking adults except for several English language videos she liked to watch. Her speech production is also dominantly Korean except for a few English lexical items such as 'bye' and 'hi.' The videotaped data was first transcribed into Korean using notations well established in conversation analysis (CA, Schegloff 2007; ten Have 2007; Sohn 1999)

and relevant audio data segments were analyzed using Pitchworks. Labeling was informed by the K-ToBI (Korean Tones and Break Indices) labeling conventions (Jun 2000), which is a prosodic transcription convention for standard (Seoul) Korean. ToBI was originally created as a common standard to transcribe the intonation patterns and other aspects of the prosody of English utterances (Beckman & Hirschberg 1994).

In this paper, the functions of a child's repetition of adult speech is analyzed by showing the prosodic patterns in the interaction between a child and adult, focusing on IP (Intonational Phrase) boundary tones indicated by the wave form and intonational contours of the utterance. An IP is marked by a boundary tone at the end (e.g. H%, L%, LH%) which delivers various pragmatic meanings as well as information about the sentence type (Jun 2000). The child's ability to use words with different prosodic cues, mainly their use of intonational contrast to communicate different pragmatic meanings, will be investigated by adopting the framework of conversation analysis. For an example, refer to the following figure which has three tiers marked.

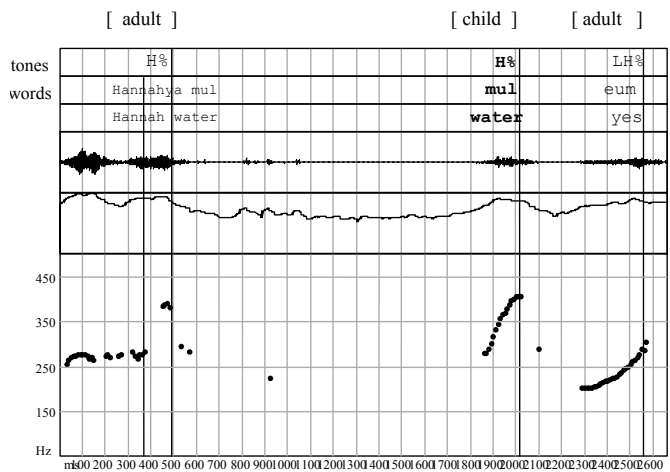

Figure 1. "Hannah water" - "water'.

The first line is the phonological tone tier marking the boundary tone (%).[1)] In Figure 1, the adult's first turn asking for water employs a H%

boundary tone which is matched in the next turn with Hannah's H% boundary tone. The second line is the word or orthographic tier which provides the actual Korean words spoken by the interactants and the third line is provided for the English equivalent when one exists. Hannah's utterances and the repeated portion of the adult utterance (when it can be identified) are bold faced.

3.1. Hannah's stage of development

Hannah's mean length of utterance (MLU) as measured in morphemes across all her utterances in the data set was 1.35.[2] According to Miller and Chapman (1981) this places Hannah in early Stage I and at roughly the predicted chronological age for their MLU (MLU range: 1.01-1.49, Age range: 19-22 months). Hannah possessed a limited number of function words such as the variant forms of the declarative final particle *cwo*[3] (sometimes pronounced '*to*') which communicates the speaker's commitment to the statement produced (Park 2010). Her lexicon consists predominantly of verbs. This is in line with Choi (2000)'s study which found that Korean-speaking children have more verbs in their early lexicon compared to English-speaking children who have more nouns at the same stage. In the current data, the caregiver input mostly ends with verb-final particles (not including the word teaching sequences) which suggests that

1) Since IP-final positions overlapped with the AP-boundary tone in most of Hannah's utterances, and because boundary tones will be the focus of the study, IP-final boundary tones instead of AP-boundary tones are marked in the first tier. For adult utterances both AP and IP tones are labeled whenever necessary.

2) When recognizable, final suffixes were counted as separate morphemes (e.g. 'ka-yo?' consists of 2 morphemes 'ka' and 'yo').

3) Korean is transcribed using the following Yale romanization system (Sohn, unpublished).

Consonants	Vowels and diphthongs
ㄱ k ㅋ kh ㄲ kk	ㅏ a ㅓ e ㅗ o
ㄷ t ㅌ th ㄸ tt	ㅜ o ㅡ u ㅣ i
ㅂ p ㅍ ph ㅃ pp	ㅔ ey ㅐ ay ㅒ yay
ㅈ c ㅊ ch ㅉ cc	ㅑ ya ㅕ ye ㅛ yo ㅠ yu
ㅅ s ㅆ ss	ㅚ oy ㅟ wi ㅝ we ㅘ wa
ㄴ n ㅁ m ㅇ ng	ㅢ uy ㅞ wey ㅙ way
ㄹ l ㅎ h	

the child may be sensitive to this pattern in the input she is receiving.

There are some instances of reduplicative babbling (e.g., *cwumcwumc-wum* "car", *cici* "dirty stuff", *kkakka* "cracker"). She over-extends certain words using *uyu* "milk" to refer to both milk and orange juice, and using *cib* "house" to refer to "any kind of play."

Hannah is yet in the single-word stage as most of her turns consisted of single words, some with more than one final particle. Most of her utterances were repetitions of the adult's preceding utterance (partial or whole). The rest were voluntary word productions, which included adult-like tokens as well as nonsense words and reduplicative babbling. Excluding the repeated words, it is estimated that the child has less than 100 words. The child can answer wh-questions initiated by the adult and has word-like pitch contour. The child's utterances are mostly of one AP (accentual phrase) length which consists of a lexical marker plus a case marker or a postposition (Jun 2000). Similar to children in similar age groups (Wootton 1997), she is unable to exactly imitate the adult segments produced immediately before her utterance but as the production of the pitch tracks shows below, she is able to repeat the prosodic quality of the adult utterance by preserving the pitch and intonational contour; thus, showing her ability to produce sentence-like intonation. Let us now begin with the analysis of her utterances in two separate sequential locations.

4. Findings

The repetitional sequences which form the basis for analysis here are taken from recordings of Hannah engaged in play with her care-takers (predominantly with adult 1). The analysis will first provide the child's production located in second pair part turns relevant to the adult's first pair part turn. Second, an analysis of child initiated sequences (first pair part) that are followed by adult's second pair part turn is provided. The findings will shed light onto the interactional role that the child's use of boundary tones play in talk-in-interaction by examining two different sequential locations.

4.1. Second turns: Child repetition of boundary tones to do "answering"

A major part (approximately 84%) of the language produced by participants in this data shares a similar adjacency pair structure with a first pair part action initiated by the adult followed by a second pair part action from the child which is vocalized through the repeat of the boundary tone found in the adult's initiating turn. The product of this practice and these features may be represented schematically in the following transcript diagram.

Turn 1 adult: First pair part
Turn 2 child: Second pair part – Repeat of boundary tone in Turn 1

Of particular interest for this paper is the fact that different instances of the first pair part is followed immediately in the transition relevance place by second pair part turns that repeat the boundary tone of the last syllable or word of turn 1. These second pair part turns produced by the child are frequently coupled with relevant nonverbal actions, such as eye gaze, hand reach or head movement to suggest that the turn is pair-type related to the first turn.

In the following example, the adult is 'inviting' the child to play with her (turn 1). The adult's first pair part turn presents the child with a question *imolang ike halkka?* 'do you want to do this with auntie?' and is therefore a turn which carries quite specific implications for what is to follow: on its completion, an answer (acceptance or rejection) to that question (invitation to play) is relevant. However, the child's following turn, '*(hal)kka?'* appears not to provide an answer to the adult's question, nor, indeed, any kind of contingent response to it (as, for example, a response such as "I don't know"). Directly after the child's production of part of the adult's turn, the adult presents her question again but now with a LH boundary tone frequently employed for labelling actions (Jun 2006, also see Example 5 below). Four turns are provided to show that the interactional sequences proceeded through a series of adjacency pair sequences rather than one.

(2) Invitation sequence

turn 1 A1: hannah imo-lang i-ke hal-kka? (H%)
hannah aunt-with this-thing do-INTERR
→ Hannah do you want to do this with auntie?

turn 2 C: → (hal)kka? (H%) ((Hand reach gesture toward adult))

turn 3 A1: i-ke hal-kka::? (LH%)
this-thing do-INTERR
Do you want to do this?

turn 4: C: halkka? (LH%)

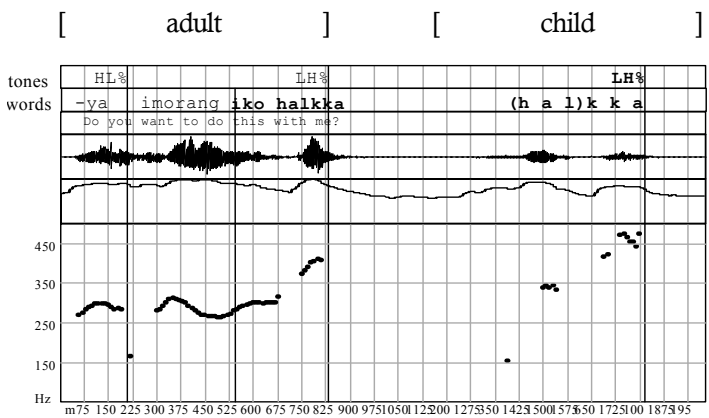

Figure 2. "imolang ike halkka?" - "halkka?'

As shown above, the child's voice is in similar pitch range with the adult (350-450 Hx). Within this range, she repeats the last word of the adult's first pair part turn and its boundary tone (H%). Although the words containing the second pair part and its final prosody are not adequate as an answer to a yes/no question in adult terms, Hannah nonetheless communicates her understanding of the question as requiring a second pair part response through a vocal repetition of boundary tones coupled with a reaching gesture towards the adult. The display of participation in the joint activity is made visible as an embodied performance – through the way she mimics and repeats prosodic elements (boundary tone and pitch range) of the preceding adult speech. Most importantly, the child's turn is a version of part of the adult's turn which preceded it; that is,

it is a partial imitation of that turn. These turns produced by the child represent the picking up of part of that turn and an attempt at articulating it – filling up the second pair part turn at the appropriate moment through repetition. By repeating the question using a different boundary tone (LHL%) in the next turn, the adult ratifies the child's prior turn with reference to articulation rather than with regard to interactional significance (Tarplee, 2010) as evidenced in turn 4 wherein the child repeats the boundary tone (LH%) of the adult turn.

Following is an additional example of the child repeating the boundary tone of the preceding adult turn ("what are you doing?"). In this excerpt the adult employs an open ended question in the first turn.

(3) Open ended question

turn 1 A1: hannah mwe ha-nun ke-ya? (H%)
hannah what do-TOP thing-INTERR
→ Hannah what are you doing?
turn 2 C: → (k)eya? (H%)
turn 3 A1: mwe ha-nun ke-ya::? (LH%)
what do-TOP thing-INTERR
What are you doing?
turn 4: C: iya? (H)

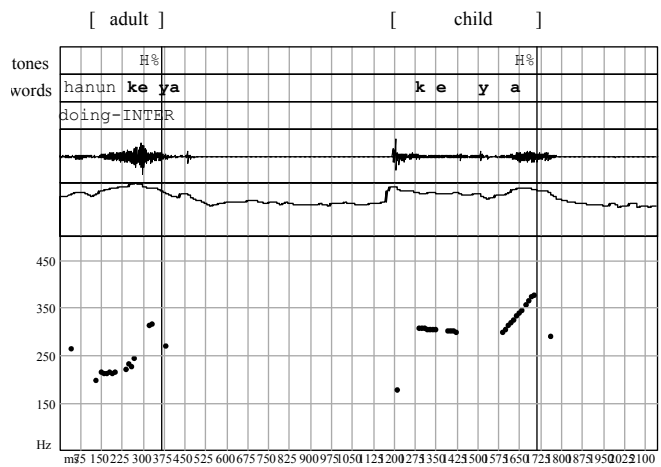

Figure 3. "ihanun keya?" - "(k)eya?'.

Here the adult finds the child playing with toys and moves over to her side to ask what she is doing. In the following turn, the child ties her pitch range and boundary tone with the adult and repeats the final syllable '(k)eya'. The child produces a verbal response at the transitional relevance place following the question swiftly without delay. She is capable of building her moves within a field of meaning that has been brought into existence by the conditional relevance of the prior questioning action (Schegloff 2007). Turns 3 and 4 following this adjacency pair repeats turns 1 and 2.

Child's repetition of the first pair part is not limited to turns following questioning actions or invitations by the adult, however, as shown in (4) below. Here, the child responds to the adult's request to collect black colored blocks with a repetition of the adult's final boundary tone.

(4) Request

turn 1 A1: kkamansayk-man moa-pwa. (L%)
black color-only collect-try
→ Collect only the black colored ones.
turn 2 C: → >mwa.< (L%)
turn 3 A1: kkamansayk-man moa-pwa::. (LH%)
black color-only collect-try
Collect only the black colored ones::.
turn 4: C: wa::. (LH%)

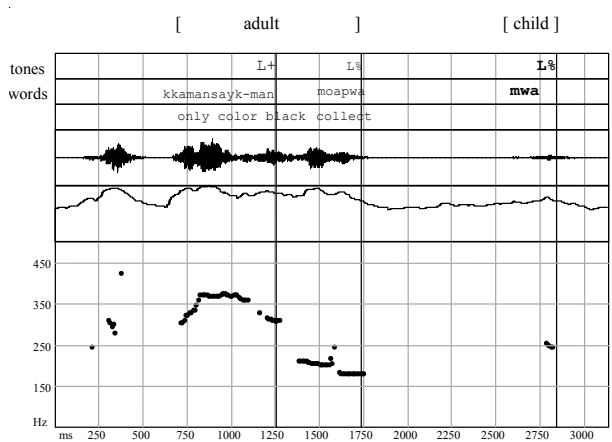

Figure 4. "kkamansaykman moapwa" - "mwa'.

A request to collect black colored blocks is performed through a L% boundary tone by the adult and the child repeats the boundary tone of the first pair part turn through '>*mwa*<'. The child's second pair part turn lacks the linguistic resources necessary to make up an intelligible sentence, however, it takes on the status of a performance – a presentation of certain skills that is in these cases the ability to interact with others through the basic unit of talk-in-interaction. A child's matching of boundary tones, then, presents a display of the child's interactional abilities through (prosodic) resources that are available to her at the moment.

In addition to repeats and questions, the adults also engage in labelling activities with the child. Labelling is frequently performed through a LHL % boundary tone at the end of the turn. Here, the boundary tone and end of the utterance is what is being repeated by the child instead of the word as shown in (5) and Figure 5 respectively.

(5) Labelling

turn 1 A1: cusawi:::. (LHL%)
dice
→ Dice. (A1 holds up the dice.)
turn 2 C: → awi::. (LHL%)
turn 3 A1: cusawi::. (LHL%)
turn 4: C: wi::. (LH%)

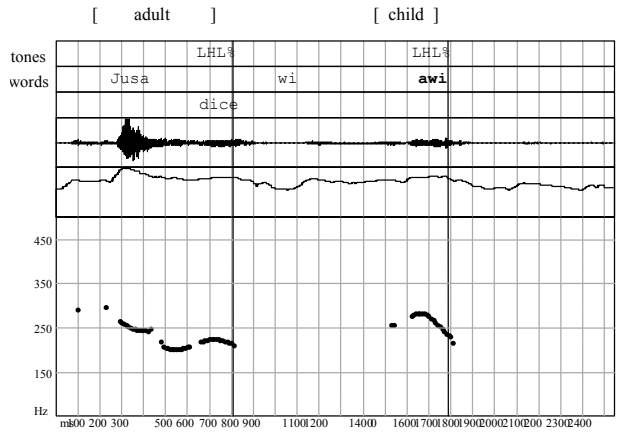

Figure 5. "cusawi:::" - "awi".

Here, we may observe a basic two part adjacency pair structure. After an elicitation turn from the adult (turn 1), a repeat of the boundary tone is produced by the child (turn 2) and a further elicitation (turn 3) followed by a repetition (turn 4) is produced. This example shows us that the adult offers opportunities for rehearsal of development skills on the part of the child and Turn 3 invites the child to have another try at articulating her responses.

All these examples illustrate a pattern whereby a child's repetition of an adult boundary tone occupies the second pair part turn. Even though the child is unable to perform a linguistically adequate version of a response through words, she employs prosodic elements (boundary tones) by imitating adults to occupy a second pair part turn in the adjacency pair sequence. We may conclude that the child in the one word stage is capable of producing the central organizing format for sequences, which is the adjacency pair (Schegloff 2007) before having the language base for producing longer utterances. Data shows that the adult initiates a wide range of actions in the first turn which includes requests, invitations, questions and labelling. These turns are followed by the child's second pair part turns which include a repeat of the boundary tone produced in the immediately preceding turn to serve a relevant second pair part action in that location. The adjacency pair structure is retained through boundary tones (and nonvocal actions served simultaneous when relevant). Further, all examples show us that the care-taker is continuously working on the child's developing articulatory skills by repeating the same sequence twice. For example, in (5) the adult's '*cusawi*' (turn 3) initiates repair after the child's '*awi*' is produced, which leads to additional opportunities for the child to practice the word.

The next question is whether the child initiates sequences using appropriate boundary tones that matches the adult utterances. We can assume that if the child learned to interact with adults using the adjacency pair structure she would be able to initiate turns at talk through boundary tones as well. To address this question the next section will analyze sequences in which child initiation occurs and examine the type of actions performed by the employment of boundary tones.

4.2. Initiating turns: Requests and questions through boundary tone

Above, it was shown that the child is able to perform a second pair part action through repetition of boundary tones. This performance is mirrored in the boundary tones that Hannah uses to initiate first pair parts, which we will turn to in this section. As the adult's evaluative repeat follows swiftly without delay after the child's initiation attempt, actual opportunities for this type of initiation are minimized in the corpus (as shown below). Since the child's vocabulary is limited to one word consisting of less than three syllables, she relies on contrasting boundary tones at the end of the word to interact with her caretakers. Therefore, the boundary tone of the child's voluntary utterances delivered various pragmatic meanings (e.g., requests, questions, statements) which could only be interpreted within the local contexts. The words were not adequately formulated (i.e., the appropriate particles which should be used for performing a request to an older person were not used); however, the adults were able to understand that Hannah was performing a particular action by interpreting the context in which it occurred and the boundary tone through which the utterance was produced. Here sequences take the shape of the following turns.

Turn 1 child: First pair part (request, question etc) through boundary tone
Turn 2 adult: Repeat of Turn 1 in full linguistic form
Turn 3 child: Repeat of boundary tone in Turn 2

Let us begin with an instance of the child asking questions. In the following example the child is seen to hold up a toy truck she was playing with and placing it in front of A1's view. By virtue of such positioning and the final boundary tone employed (H%), the adult interprets turn 1 as a question. Rather than answering the question, in turn 2, the adult asks the child to name the object she has been playing with (*ike meya ike:::.* 'what is this this:::.') by employing a LHL% boundary tone commonly employed in labelling actions. In turn 3, the child repeats the boundary

tone associated with the final particle *ke* in the preceding turn.

(6) Question

turn 1 C: → ddada? (H%)

turn 2 A1: → i-ke me-ya i-ke:::. (LHL%)

this thing what-INTERR this thing

What is this this:::.

turn 3 C: ke::. (LHL%)

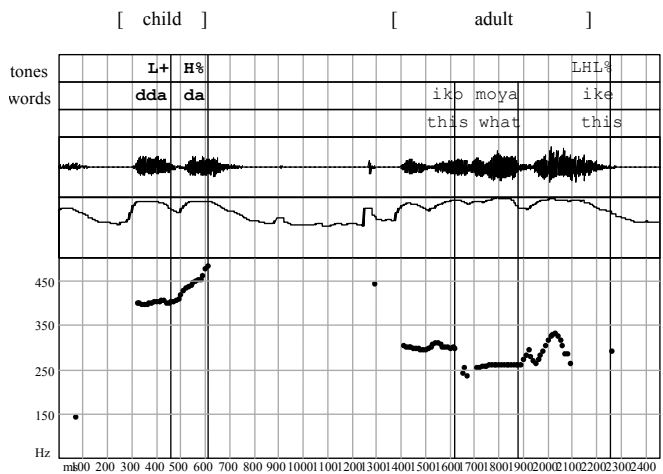

Figure 6. "ddada" - "I-ke me-ya ike:::?"

The child's utterance '*ddada*' is a proto-word and it is difficult to understand the social action performed by it without the surrounding context. In the speech situation, the child visibly displays her action a question by 1) placing a toy so it can be in view of A1 and 2) shouting '*ddada*' utilizing a H% boundary tone which is used for questioning actions in Korean (Jun 2006). But instead of producing an answer, the adult re-directs the question to Hannah using a complete sentence, who in turn repeats the last syllable *ke.* Two points are worth mentioning here; first, the child' question is not being answered by the adult but rather being repeated through reformulation of the prior utterance into a full fledged sentence, and second, this changes the direction of the sequence back to adult ini-

tiation ("I-ke me-ya ike:::?") followed by the child's repeat of the boundary tone ("ke"). This sequence shows that these care takers recast children's ungrammatical utterances into conventional adult forms to be repeated, which offers opportunities for rehearsal of developmental articulatory skills on the part of the child.

Adults' utterances tend to end with a rising pitch (H% or LH%) when addressing the child, compared to the L% boundary tones which are frequently used when talking among adults in Korean. Hannah appears to be repeating the intonation contour of adult produced sentences addressed to her which is evidenced by her dominant use of H% boundary tones in voluntary utterances shown above. In the following example, when the child asks for a candy bar using a H% boundary tone the adult corrects the utterance and recasts it into the conventional adult form using a LHL% boundary tone.

(8) Request for candy

turn 1 C: → woto? (H%)

turn 2 A1: → cusey-yo::. (LHL%)

give-POL

Please give it to me.

turn 3 C: ciwoto. (LH%)

turn 4: A1: cusey-yo:::. (LHL%)

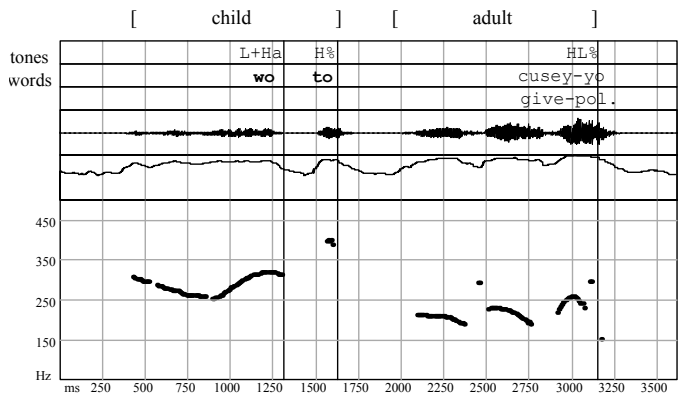

Figure 8. "woto" - "cuseyyo::".

The word *woto* that the child uses to perform this request does not exist in the Korean language. The last syllable *to* may be interpreted as an ill-formed final particle *-cwo* which acts as a request for someone to perform a particular act for the speaker. This form is not appropriate when addressing an adult. Instead of producing a relevant second pair part to this turn, the adult repeats the child's request, replacing the ill-formed word with a pragmatically and grammatically appropriate version of it using the honorific participle "yo": *cusey-yo* "please give it to me." By doing this, the adult responds to the child's request by turning it back on the child; it invites a child version and the child responds to this with a version of the target, which the adult repeats again in target form (Turn 4). In the following sequences, this same request sequence is repeated five times until the child is able to repeat the full sentence in target-like form *cusey-yo.*

Finally, the child may initiate a sequence of talk after a triggering event. In the following example, the child has been playing with an assembled toy figure and it has just scratched her finger. She throws it onto the floor at the same time saying 'ttejjijji'. The word is an onomatopoeia associated with a scolding action accompanied by spanking in Korean. Following the child's outburst, the adult repeats the word and makes a hitting motion toward the object on the floor.

(9) Statement sequence

((child throws down the toy onto the floor))

turn 1 C: → ttejjijji. (HL%)
bad toy

turn 2 A1: → ttejji ttejji. (HL%)
bad toy

turn 3 C: ttejjijji. (HL%)
bad toy

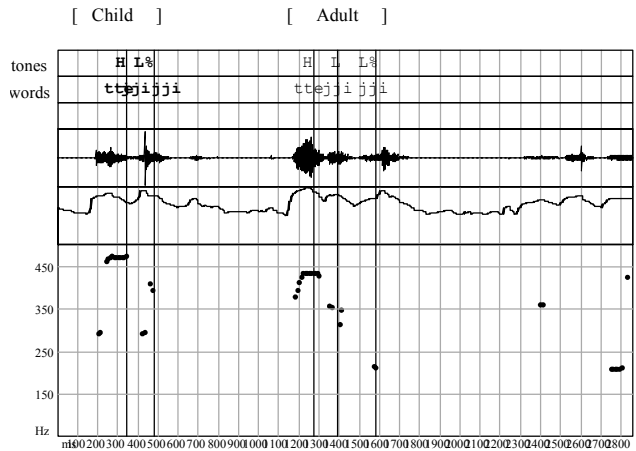

Figure 9. "ttejjijji" - "ttejjijji".

The initiating turn is similar to what Goffman (1981) described as a "response cry" which occurs in a specific sequential position following the actor's displays. The normal pitch of the child is 250 and 350 Hz; while here, the child's voice leaps to 460 Hz over the word '*ddada*' showing her emotional distress. The adult co-participates in the activity of scolding by repeating the child's turn verbatim using similar pitch ranges. Through such repetition, intersubjectivity (Hutchby and Moran-ellis, 1998) – mutual understanding between adult and child – is built and maintained.

While in examples (6) to (8), the adult followed the child's initiation with a correction or a rejection, in example (9), the adult participates in the propositional content of that observation. Either way, child initiations in the corpus are most frequently followed by adult repetitions of these initiations either by recasting them in correct form or through verbatim repeats.

To address the earlier posed question on the role of the adjacency pair sequence in early developing child speech, the findings so far reveal that the child in focus who is still in a one word stage has developed interactional resources, boundary tones, to engage in social actions with her interlocutors through the adjacency pair structure. Even without appropriate words, boundary tones (especially those with H% boundary tones) serve the purpose of giving meaning to the child's initiated turn. Detailed

analysis of the sequences showed the adults' effort at employing repetitions to make the child participate in these sequential actions, in particular, articulatory actions. The findings may provide evidence to usage based approaches to child language development (Tomasello, 2003) which emphasize the role of adult input and repetition in child directed speech in early child language.

5. Conclusion

Recently, an increasing number of child language studies are shifting from more nativist-linguistic approaches to a concern with the nature of interactions between child and adult as the site of children's language development (Gardner & Forrester 2010; Snow 1994; Tomasello 2003). Following this recent trend, this paper examined a 22 month old child's ability to respond to and initiate sequences primarily through the use of boundary tones and repetition by utilizing the adjacency pair sequence. At this stage idealized linguistic rules and grammatical correctness are less necessary for meaningful interactions with others. Because Korean is agglutinative in its morphology (Lee & Ramsey 2001) turn final elements carry important meaning when compared to English which depends on word order to distinguish between sentence types. This may explain the child's use of boundary tone repetition to build different types of second pair part turns. The analysis also reveals that the child's output mirrored the input in terms of sequence organization. As the majority of utterances produced by the child was repetition of the boundary tones found in adults' first pair part turn which did requests or questioning, the few first pair part initiations made by the child were also produced through boundary tones that performed a request (invitation) or a question.

These finding raises three particular points for discussion. First, the findings support the importance of input in the development of child language use (output). Some parallels can be drawn from other work which has been carried out on the role of input in child language production. An interesting finding related to input is the adults' use of repetition in

response to child initiated sequences (for instance, see examples 6, 8 and 9). This mirrors the way in which the child repeats the boundary tone of adult initiated sequences in examples 2 to 5. The similarity of sequence structure found in the child's input and output support constructivist approaches to language development whereby children are seen as building up an inventory of constructions derived from an interaction between what they hear and what they want to say (Tarplee 1996, 2010).

Second, the findings evidence the importance of the basic adjacency pair sequence in child interaction with caretakers that suggests its role in child language socialization. The child in this study is unable to produce linguistically full-fledged responses. However, interaction is sustained through mimicry of boundary tones that communicate different pragmatic meaning. Boundary tones may show the child's developing pragmatic competence and her ability to track turn endings and initiate turns. The precision timing of her voice (Jefferson 1973), the way it begins exactly at the first possible completion of the adult's turns provide evidence for this claim. At least in this stage (one-word utterance), the child is able to engage in social actions by using boundary tones that exist in abundance in the surrounding interaction with adults at least when conversing Korean. The adult educates the child into an interactional being through social interaction. For example, the question in (3) is not a real question whereby the questioner projects the intended answerer to be knowledgeable about the matter (Heritage 1984). Instead the question tests the occurrence of the child's answer and these types of interactions, when repeated, may help the child to become a competent social actor. If language is conceptualized as an individual competence located in one's mind, then the performances of Hannah remains limited and inaccessible to study. However, as shown through this study, Hannah emerges as a competent actor capable of finely coordinated participation in the activities that make up a state of talk. She uses language of others to participate in a state of talk by co-constructing relevant action through prosody, specifically boundary tones.

A number of directions for future studies can be suggested. First, this study focused on single word utterances produced by a 2 year old child

(1;10), therefore, the consideration was limited to lexical matters and boundary tones. It would be of interest to pursue this line of research with conversational data from older age groups. Second, the relationship between various prosodic aspects of language acquisition could be investigated in future studies to make a comprehensive argument about how these elements are integrated and developed to become adult-like speakers. Finally, the sampling of this study represented only a small portion of what a child said or heard which made identifying developmental claims very difficult. The issue may be taken up in future studies by tracking the developmental process of one child using similar methodology.

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Received: October 20, 2014
Revised version received: November 25, 2014
Accepted: December 2, 2014