

How Do Parents Communicate with Their Infants?

: The Function of Parental Proxy Talk in Pre-Verbal Communication

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Abstract

How do parents communicate with their infants before the infants learn to talk? It has been observed that the parents use Parental Proxy Talk (PPT) as if the speech came from the infants' own voice. In other words, PPT reflects their expectations of what the infants were thinking and feeling. The present study of PPT explored how PPT functions from birth to 15 months of age, and how PPT contributes to communication with pre-verbal infants. The results showed that there are three periods in the development of the use of PPT; (1) a gradual increase between 0 and 3 months, (2) a peak period from 6-9 months, and (3) a period of decreasing use of PPT from 12-15 months. The study also showed that PPT functions to support not only the pre-verbal infants but also parents themselves, e.g., in parents' emotion regulation.

Issue

To what extent can we communicate with infants who cannot yet talk? This research paper on the proxy talk used by parents examines how communication between pre-verbal infants and parents is constructed and how this communication develops.

When adults communicate with most other people, they use language and culturally-specific non-verbal means—in other words, expressions and gestures. But what do they use when talking to a pre-verbal infant? Communication between pre-verbal infants and parents is also built on asymmetrical relationships in terms of verbal and other communication skills, and in terms of cultural development on a non-verbal level (Adamson, Bakeman, Smith, & Walters, 1987). Miscommunication is an everyday occurrence even between adults, which demonstrates the complexity of exchanging thoughts and feelings. In a clearly asymmetrical relationship such as that between parent and infant, it seems communication would be nearly impossible. How do parents communicate with a pre-verbal infant? If we reexamine parent-infant communication from this perspective, we find that not only does the parent talk to the infant from the parent's perspective, but also articulates what the infant seems to be saying—in other words, the parent speaks from the infant's perspective as the infant's proxy.

Through this proxy talk, the parent verbalizes the thoughts and feelings of the infant, for example, saying “Yummy! (*“oishii”* in Japanese)” to the infant when he/she is eating or “Aah, clean and fresh!” when changing the baby's diaper. In this situation, even when the same word “yummy” is being used, the parent can confirm with the baby by asking “Is it yummy?” or stating “I bet it's yummy,” and also speak from the infant's perspective with “mmm, yummy! (*“oishii”* in Japanese)” and even say “(We think it's) yummy, don't we (*“oishii-ne”* in Japanese)” from both the baby and the parent's own perspective (in other words, “our perspective”)¹¹. In this research, “proxy talk” refers to a method of utterances that includes the infant's perspective. Okamoto (2001) focuses on the parent's speech in communication with pre-verbal infants, and attempts to analyze their communication in terms of who the subject of the utterance is in the talk. The results showed that the parent's utterances are not a dichotomy between speech from the parent's perspective and speech from the child's perspective. Instead, it was found that the parent's utterances include four types of proxy talk: utterances from

(only) the child's perspective (proxy talk from child's position), utterances from the perspective of both the child and the parent (proxy talk from parent-child position), utterances in which the perspective is vague (proxy talk from ambiguous position), and utterances in which the perspective shifts midway from parent to child or from child to parent (proxy talk from transitional position). Utterances that do not include the infant's perspective are not deemed proxy talk. So how does proxy talk function in communication between parent and child? This research delves into parent-child communication methods from the parent's perspective through proxy.

The research on communication in asymmetrical relationships during the pre-verbal stage is too numerous to list comprehensively. Research on interactional synchrony (Condon & Sander, 1974), imitation during the neonatal stage (Meltzoff & Moore, 1977; Field, Woodson, Greenberg, & Cohen, 1982), the infants' preference for facial stimulation (Fantz, 1961; Simon, Macchi, Turati, & Valenza, 2003), and intersubjectivity (Trevarthen, 1979; Newson, 1977) found that infants focus on the stimulation provided by the adult facing them and are then able to respond. This research describes the orientation of infants toward people. In research on infant-directed speech (IDS) (Jacobson, Boersma, Fields, & Olson, 1983; Fernald et al., 1989; Kitamura & Burnham, 2003; Bryant & Barrett, 2007), infants show a preference for IDS itself and the emotional tone of IDS (Fernald, 1985; Kitamura & Lam, 2009), indicating the role that IDS plays in regulating emotion (Trainor, Austin, & Desjardins, 2000) and directing attention (Kaplan, Goldstein, Huckleby, Owren, & Cooper, 1995). In other words, before infants understand the linguistic meaning of the speech directed at them, they react to IDS in their own way.

In this way, research on communication in the pre-verbal stage and IDS research shows that even in asymmetrical relationships, infants express directionality to people and the speech directed at themselves and can participate in communication.

However, the infants' actions that make this kind of communication are very undeveloped and undifferentiated. Communication is not taking place because of the contributions from the infant alone, but rather the adult is attaching meaning to the immature actions of the infant (for example, Kato, Kurebayashi, Yuki, 1992; Adamson et al., 1987; Kaye, 1979; Marcos, Ryckebusch, & Rabain-Jamin, 2003; Masuyama, 1991). Parents respond even to infant behavior that does not have any particular significance as if the

infant is trying to convey something, and this helps the infant's consciousness emerge (Masuyama, 1991), while the parents' interpretation encourages developmental changes in the infant (Adamson et al., 1987). Valsiner (2007) calls this the "as-if" structure. Interpretations prompt the "as-if" nature. i.e., leaps in inference and organization of particular situations.

The proxy talk that we attempt to address in this research is formed on the back of this as-if structure. Parents act as proxies by speaking in the infant's stead, as if the infant is thinking and feeling what the parent voices. Given the asymmetrical relationship between parent and child, the thoughts and feelings of the infant given expression via proxy talk do not necessarily accurately reflect those of the infant, but are instead the result of the parent's leaps in inference and organization of the situation. In the sense that this leap compensates for the part that cannot be fully interpreted, it is similar to the semi-interpretation described by Okamoto (2001; 2008b), who studied proxy talk.

Moreover, proxy talk is the parent articulating the infant's voice. "Voice" is a concept derived from Mikhail Bakhtin and does not refer to the actual physical voice, but voice as a sociocultural personality (Wertsch, 1991; Holquist & Emerson, 1982). This kind of voice is initially borrowed from society, and the individual spiritual function expressed via the voice has its origins in the social communication process (Wertsch, 1991). The voice has an address directed toward it, and when people borrowed the voice accepts the cultural meaning accompanied by the emotions directed toward this address. Moreover, Hermans and his colleagues (Hermans, 2001; Hermans & Hermans-Jansen, 2003) mention that the "I-position," from the multiple different perspectives associated with this voice, forms the dialogical self through repeated dialogue. This concept provides a significant suggestion and also raises questions when considering the parent's proxy talk. Proxy talk certainly makes it easier for the voice as a sociocultural personality to be internalized during the infant's development while forming his/her dialogical self, and dialogue with these internalized voices forms the foundation for the infant's dialogical self. Given this, proxy talk has a major impact on cultural development, including the infant's emotional attitude. At the same time, whose is the voice spoken as a proxy for the infant's voice? Parents have not heard the infants' voices yet, so how are the infant's voices conceived? This brings to mind the leap in the "as-if" structure mentioned above (Valsiner, 2007). A parent cannot guess at the cultural voices of the infant, which they

have not yet heard, without excesses and deficiencies, but the parent likely compensates for the infant's' immature behavior in creating a voice based on the parent's own lived experiences in that culture.

Children are born into particular regions, households, and historical times, and are guided by adults and elders (such as parents) who are accustomed to that community. While acquiring cultural voices, they are able to participate in the community. This process is not one in which children passively internalize culture in the community, but rather a process in which children appropriate cultural tools such as speech. At the same time, from the parent's perspective, this implies a process in which they use the cultural tools they have already acquired and have the chance to mold the existing culture anew, while adding their own interpretation of the infant's actions. Proxy talk is an internalized process of a child's cultural development, and at the same time, an externalized process of the parent's cultural experience. In other words, proxy talk is a cultural intermediation through which culture is transferred between parent and child. This research attempts to reexamine development as a process by which the infant participates in the cultural community (Rogoff, 2003) and a process that includes cultural transfer, not simply the infant's own personal history. Needless to say, it is difficult to approach cultural transfer between generations in this research. However, by examining the parent's proxy talk in detail, we can grasp the threads of the argument behind the externalization of the parent's cultural experience.

Given the above, this study aims to take another look at the functions that proxy talk play from the parent's perspective in communication between parents and pre-verbal infants between the ages of 0–15 months. We will discuss the externalization of the parent's cultural experience, which supports the process by which infants participate in the cultural community, and the possibility of internalization from the infant's perspective.

Method

Study participants

The study analyzes 12 pairs of mothers and infants living in the Tokyo suburbs who participated in a longitudinal study from pregnancy. Observational data from 0–15 months after birth is used. The average age of the mothers at

birth was 29.2 (from 24–36 years of age) and all of the children were firstborns (six boys and six girls). When the longitudinal study began from pregnancy, participants were recruited from the mother's class or both parents' class held by local cities and towns, and the study was explained in writing and at a panel that explained the observation. After the parents gave their informed consent, they were included in this study.

Study period

July 1997 to January 1999

Procedures

The authors visited the participants' homes for observation. The data was analyzed a total of six times, when the child was 0, 3, 6, 9, 12, and 15 months of age. The observation lasted 15–20 minutes, and the parent was instructed to play with the infant as usual, and there were no restrictions on toys other than those that make a loud noise and could affect the analysis. All of the processes were recorded on video with the parent's permission. The observers tried not to be involved in the parent-child interaction, but when the infant and parent seemed to be nervous and the observer was approached, the observer responded enough to keep the atmosphere natural (for details, refer to Okamoto, 2008a). The parts in which the observer responded were excluded from the analysis.

Analysis

The utterances and vocalizations between the parent and child and the contexts in the recorded scenes were transcribed. All of the utterances from the mother that could be discerned were given an ID number, and 50 utterances from the start of the observation were analyzed in each observation setting. The observation began after the recording started and the attention directed to the observer up until that point shifted to the play between parent and child. The starting part of the observation was included in the analysis because it is difficult for very young infants in particular to maintain a good mood as the observation time passes, and the observation began when the infant was calm. Fifty utterances were analyzed for each observation at the six time

periods for the 12 pairs. In order to ensure that differences in the number of utterances by parents did not affect the overall analysis, the number of utterances was standardized in each case. Utterance units were identified by syntactic cut-off points or one second or more of silence.

First, we determined the perspective of the mother's utterances and identified the proxy talk in terms of who was the subject of the utterance. Based on Okamoto (2001; 2008b), each of the utterances was coded according to the four types of proxy talk and non-proxy talk. The specific categories were 1) proxy talk from child's position, 2) proxy talk from parent-child position, 3) proxy talk from ambiguous position, 4) proxy talk from transitional position, and 5) non-proxy talk. Non-proxy talk refers to utterances that do not include the infant's perspective, and the subject of these non-proxy utterances is not necessarily the parent (in subsequent analysis, it was found that the subject of the speech was occasionally a toy). A dichotomized category of proxy talk and non-proxy talk was not used because the utterances could include a vague and context-dependent perspective by nature (specifically, proxy talk from parent-child position, proxy talk from ambiguous position, and proxy talk from transitional position) in order to consider the utterances that broadly included the different infant's perspectives as proxy talk. The category definitions and examples are shown in Table 1. After the first author and third author discussed the category definitions beforehand, the coding work was divided up. The concordance rate for the two authors was considered for 10% of all of the data, showing that the concordance for the five categories was .90 and the non-proxy talk concordance was .92. In the case of disagreement, the author in charge of coding made the decision.

Table 1—Definitions of four types of proxy talk and non-proxy talk

| Categories | Definitions | Examples |
|--|---|--|
| Proxy talk Proxy talk from child's position | Proxy talk by the parent, who is speaking from the child's position with the child as the subject of the utterance | [Zero-month old baby girl and mother] When the mother stops breastfeeding, the mother asks the child if she wants to drink more. Asking "is your stomach full?," she brings her breast close to the child, but the child does not put it in her mouth. Seeing this, the mother uses proxy talk from the child's position, stating " <i>no more.</i> " Confirming by asking, "you don't need anymore?," she decides that they are done breastfeeding. [Three-month old baby boy and mother] Hitting the baby's two hands together, the mother says " <i>clap clap clap</i> " several times. |
| Proxy talk from the parent-child position | This is proxy talk by the parent uttered from the parent-child position with "us" as the subject of the utterance and the parent and child being "us." | [Three-month old baby boy and mother] When the child burps after breastfeeding, the mother responds with "Ohh, the burp came up up up!" After this proxy talk from the child's position, she said " <i>that was good, wasn't it,</i> " speaking proxy talk from the parent-child position as she rubbed the baby's back. [Zero-month old baby girl and mother] After breastfeeding, the mother held the baby up to get her to burp, saying " <i>let's lift you up a little,</i> " explaining her own action using proxy talk from the parent-child position. |
| Proxy talk from an ambiguous position | Proxy talk from an ambiguous position refers to utterances for which it is clear whether child or parent-child are the subject of the utterance or just the parent. It is not clear whether such utterances are proxy talk or non-proxy talk. | [Six-month old baby girl and mother] The child is staring at the observer. The mother looks back and forth between the child and the observer and, keeping her voice low, says "It's strange, isn't it," expressing the child's internal state from the parent-child position with proxy talk. When the child shifts her gaze to the mother, the mother says " <i>What is that?</i> " and " <i>what, what?</i> " and then answers her own question by saying " <i>video, video.</i> " In this question-and-response format, one is proxy talk and one is non-proxy talk, but we cannot clearly classify them. |
| Proxy talk from transitional position | These are utterances in which the subject of the utterance shifts from the child to the parent or from the parent to the child in mid utterance. The sentences end in "say" or a question. | [Three-month old baby boy and mother] Holding the baby, the mother turns to the observer and says "See, we have a guest," using non-proxy talk, and then continues with "hello," using proxy talk from the child's position. Then she uses transitional proxy talk by adding " <i>say hello.</i> " She shifts from the proxy talk of "hello" to non-proxy talk by adding "say." |
| Non-proxy talk | This is the parent's utterance that does not include the child's perspective, and includes proxy talk by toys and third parties. | [Three-month old baby boy and mother] When the child begins to fuss, the mother says, " <i>you're still tired, aren't you.</i> " If this had been proxy talk, she would said "still tired" or "sleepy." |

Note: The text in italic indicates the relevant category of proxy talk.

Before the analysis, we carried out a preliminary analysis to get a broad overview of the proxy talk and confirm shifts in ages overall. The preliminary analysis determined shifts in the frequency of proxy talk in the 50 utterances in each case observed and the percentages for each of the four types of proxy talk, and used this as a rough standard for qualitative analysis in Analyses 1 and 2.

In Analysis 1, a qualitative analysis based on episode interpretation was carried out to determine the repertory of functions for proxy talk, that would be possible in interaction between parent and child, and to find relations between forms and functions of proxy talk.

Specifically, the changes in ages in the proxy talk from the 12 pairs of parents and children were confirmed, and two pairs of mothers and male infants and two pairs of mothers and female infants were chosen from the pairs, ensuring that there was no excessive distribution, and the observations were analyzed with a descriptive approach up to the 50 utterances used in the preliminary analysis. Referring to the transcripts in which the types of the proxy talk had already been coded and the videos of the observations, the scenes including proxy talk that could be interpreted functionally were written out as proxy talk episodes. At this point, to ensure that context was considered, continuous speech comprising a series of utterances was analyzed as a single episode. In addition, the KJ method (Kawakita, 1967) was carried out, based on the similarities in the proxy talk functions, rather than similarities in context and utterance forms.

In Analysis 1, we examined the functions of proxy talk. On the other hand, how is communication between parents and children formed when proxy talk is not used? By considering the situations in which proxy talk was not used, we can obtain complementary data in order to show development changes in proxy talk. In Analysis 2, we treated the non-proxy talk situations and explored why proxy talk was not used and also whether or not it could have been used. We reviewed the videos of the same observations as in Analysis 1, and wrote down the non-proxy talk episodes while exploring the possibility of alternatives to proxy talk. As with Analysis 1, we used the KJ method (Kawakita, 1967) for non-proxy talk episodes.

Results and considerations

Preliminary analysis

We determined the frequency of proxy talk out of the 50 utterances in each case for infants from 0–15 months of age, and calculated and graphed the average (Figure 1). These utterances are not categorized by the type of proxy talk. Next, in Analysis 1, in order to consider whether proxy talk needed to be categorized by type, the percentage of each of the four types of proxy talk in the total number of proxy talk incidences was organized by the age of the infant observed (Figure 2).

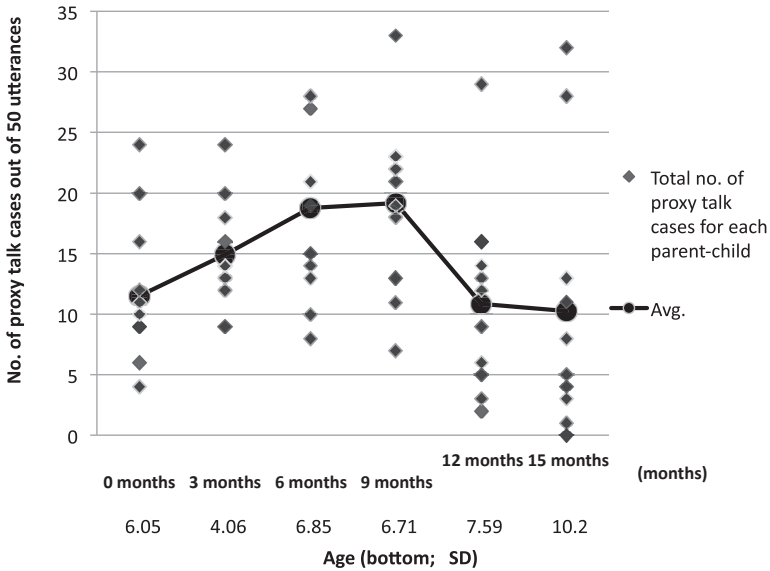


Fig.1 Changes by age in parental proxy talk

Note: Data shown using a line graph is the shift in the average proxy talk cases out of 50 utterances by mothers. Each plot is proxy talk from observation of each parent.

Proxy talk gradually increased from the age of 0 months (average of 11.5 proxy talk utterances) to the ages of three months (14.9) and six months (18.8), and reached a peak at the ages of six months and nine months (19.1). Proxy talk rapidly decreased from the age of one year (10.8 at 12 months and

10.2 at 15 months). This indicates that the quantitative changes in proxy talk can be categorized by 1) a period of gradual increases (0 and three months), 2) a peak period (six and nine months), and 3) a period of decline (12 and 15 months). Given that the distribution from one year shows that there was only one case of high values at the 12-month point and two cases at the 15-month point (when excluding these cases, the average was 9.2 at 12 months and 6.3 at 15 months), we can surmise that proxy talk has specific functions. This is considered as an important perspective in Analysis 1.

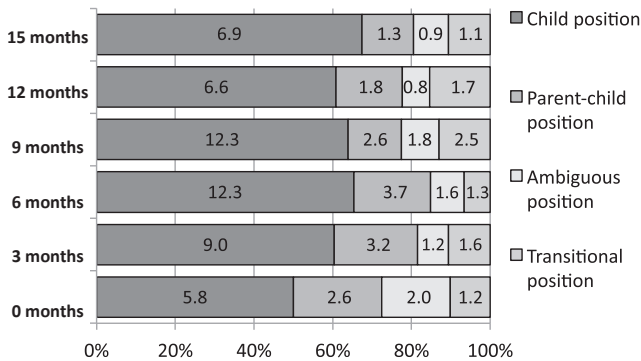


Fig.2 Percentage of each of the four types of proxy talk in the total number of proxy talk cases by age

Note: In the graph the average frequency (out of 50 utterances including non-proxy talk) is shown for each group.

Next, as shown in Figure 2, there are no major discrepancies in the frequency of the four types of proxy talk by age, and at every age, proxy talk from the child’s position was the most common. The four types of proxy talk and the relation to functions will have to be considered in the future, but in Analysis 1 we looked at the four types separately so as to avoid affecting fluctuations in the function of proxy talk with changes in age.

Analysis 1

We attempted to analyze the function of proxy talk in the episodes from a qualitative perspective. There were 62 proxy talk episodes in the interactions

Table 2—Function of proxy talk in parent-child communication

| | |
|---|--|
| <p>Proxy talk tailored to child</p> | <p>Encouragement</p> |
| <p>This is proxy talk that accepts the child's condition and intention and responds accordingly. It compensates for the child's lack of linguistic development in various situations.</p> | <p>Encouragement of child's semi-intentions</p> |
| | <p>Proxy talk to express child's clear intention</p> |
| | <p>Proxy talk from child to observer</p> |
| <p>Proxy talk directing the child</p> | <p>Guidance</p> |
| <p>When the parent wants the child to do something, the parent uses proxy talk as a tool.</p> | <p>Inactive direction</p> |
| | <p>Situation-dependent verbalization</p> |
| <p>Proxy talk to address situations</p> | <p>Filling time</p> |
| <p>Proxy talk to fill time and preserve a situation.</p> | <p>Request to share the parent's internal state</p> |
| | <p>Emergency</p> |
| <p>Proxy talk as parent's interpretation aid</p> | <p>Parent's acknowledgement of situation</p> |
| <p>Proxy talk in which the parent tries to voice the child's fragmentary intentions and actions; directed at oneself or observers.</p> | <p>Apologies to observer</p> |

How Do Parents Communicate with Their Infants?: The Function of Parental Proxy Talk in Pre-Verbal Communication

| | Age | 0 | 3 | 6 | 9 | 12 | 15 | |
|--|-----------------|---|---|---|---|----|----|--|
| | No. of Episodes | | | | | | | |
| Proxy talk intended to keep the child engaged in the current activity for longer and further encourage the child. | 0 | 1 | 4 | 2 | 2 | 0 | | |
| This kind of proxy talk is used when the child's intention is not clear, but the mother uses it to encourage the child's intentions as she has interpreted them, taking the conditions into account. | 0 | 0 | 1 | 2 | 3 | 2 | | |
| Passive proxy talk that simply verbalizes the child's clear intentions as conveyed to the parent via gestures and utterances clearly directed at the parent. | 0 | 0 | 0 | 1 | 2 | 4 | | Proxy talk for the child Verbalization of the child's actions and thoughts at present or desired in the future. |
| Expand the child's world to include a third party. | 0 | 0 | 0 | 1 | 1 | 1 | | |
| This is an attempt to lead the child away from a negative state by giving meaning to utterances that are completely opposite. | 0 | 1 | 0 | 0 | 0 | 0 | | |
| Proxy talk that changes the activity while watching the child's response. This includes proxy talk intended to re-focus the child. | 4 | 1 | 1 | 1 | 0 | 1 | | |
| Proxy talk in which the parent is telling the child that he/she must do this or say this in a given situation would be included in this category. When eating, the parent says "yummy," and when playing house, the parent says "I'm leaving now." | 0 | 0 | 2 | 1 | 2 | 0 | | |
| Passing time, play-by-play feeling; proxy talk used when the parent cannot focus on the child while taking care of the child, but must preserve the child's mood. | 4 | 1 | 0 | 1 | 0 | 0 | | Proxy talk for the parent's sake This proxy talk can be interpreted as a way for the parent to regulate his/her feelings and fill time, including the time needed to adjust feelings. |
| Proxy talk for the parent's internal state; proxy talk situation, but the parent comes to the forefront. | 0 | 0 | 0 | 1 | 0 | 0 | | |
| Passing time in emergencies; proxy talk to prevent the child from becoming bored. | 0 | 0 | 0 | 0 | 2 | 1 | | |
| Verbalization of conditions using proxy talk to look for a remedy and accept conditions. | 7 | 2 | 1 | 0 | 0 | 0 | | |
| Proxy talk about the child's condition that seems like excuses and apologies made to the observer. | 0 | 1 | 0 | 0 | 0 | 0 | | |

Table 3—Examples of proxy talk episodes and non-proxy talk episodes (summary)

| |
|---|
| <p>[Episode 1] Six-month old baby girl and mother (Utterance ID 300625~300646)</p> <p>A child sitting and held by her mother reaches out her hand and leans forward. The mother says, “Where do you want to go?” (300629/non) and “you want to try going?” (300631/non), which indicated that the mother had interpreted her child’s movements as a desire to crawl (although she couldn’t crawl yet). The mother put the baby down on her stomach, supporting her, and as the baby moved, she used proxy talk such as “upsy-daisy” (300633/ch) and “flop” as well as non-proxy talk such as “you can do it” (300638/non). This proxy talk, tailored to the child’s actions, actualizes the child’s desire to crawl, and sustains and encourages the action the child has started. Although the mother was probably unconscious of it, she used proxy talk when she supported the child’s body, and used non-proxy talk when she took her hands away and looked into the child’s face.</p> |
| <p>[Episode 2] 12-month old boy and mother (Utterance ID 601212~601221)</p> <p>The child is walking around pushing a toy car. When the toy car gets caught up in electrical cords or bumps into the bookcase, the mother says “Ah!” (601212/ch) and “Oh!” (601219/ch) as proxy talk that expresses the child’s surprise and other internal states. The child continues playing with a calm expression, and the tone of the mother’s proxy talk is not particularly exaggerated. The mother did not respond to these small events during play (the truck tangling in the cord and hitting a bookcase) by going to the child’s side herself or offering specific help. However, using proxy talk in an understated way to voice and thus assimilate any negative emotions the child may feel at these times preserves the child’s stable playtime alone. The proxy talk simply consisted of “Ah!” and “Oh!” and did not have a specific subject, and can be said to reflect the child’s semi-intentions.</p> |
| <p>[Episode 3] 15-month old boy and mother (UtteranceID 601513~601514)</p> <p>The child carries a large case of blocks and hands it to his mother. While looking straight at his mother, he says “ooh.” The mother responds with proxy talk, saying “Oh, it’s heavy, isn’t it” (601514/pa), to which the child responds by making a fist with both hands and putting strength into the pose, essentially epitomizing the mother’s proxy talk of “heavy” in his own gestures. The mother used proxy talk (“heavy”) to express the child’s clear intention, and the child seemed to understand the condition himself due to the assistance from the proxy talk.</p> |
| <p>[Episode 4] Three-month old baby girl and mother (Utterance ID 300313-300321)</p> <p>While the baby’s diaper is being changed, she becomes grumpy and the mother tries to restore her good temper by rubbing her feet and saying “beat [the bad feelings], beat” (300318,300319,300320/ch), repeating this proxy talk three times. Just before this incidence, the mother had said “it’s not the right time for this” (300314/ch), voicing the child’s state as is and understanding that the child’s mood is beginning to worsen. However, the mother did not directly confront the baby’s bad mood, but tried to bring her around to a better mood with proxy talk with the exact opposite meaning as the child’s condition as the mother had interpreted it. The child’s fussing gradually grew louder and louder, as if to cover the mother’s voice when she said “beat, beat” for the third time. At that point, the mother responded to the child’s fussing with “yes yes, yes yes” (300321/non) and gave up trying to improve the baby’s mood, immediately shifting to an acceptance of the baby’s bad mood.</p> |

[Episode 5] Zero-month old baby girl and mother (Utterance ID 300036)

The mother used the proxy talk “let’s try opening your eyes” (300036/pa) to the sleepy baby. Although the mother did not want the baby to sleep because it was in the middle of observation and she didn’t want it to be interrupted, she also didn’t want to use clear directions using non-proxy talk, such as “open your eyes.” Not only did she use “try” to indicate an attempt, but also used “let’s try,” using proxy talk from the parent-child position that added the implication that the mother and child will do this together. Proxy talk functions as a gentle direction when encouraging the baby to do something.

[Episode 6] Six-month old baby boy and mother (Utterance ID 600612-600618)

While the mother is feeding the boy baby food, the noise of a vacuum cleaner comes from another room. The child turns his head in that direction. The mother acknowledges the child’s distraction with proxy talk, saying “the vacuum cleaner is making a noise,” but while carrying the spoon to the child’s mouth, she says in a louder voice (somewhat forcefully), “Aaahh” (600614/ch) and tries to draw the distracted child’s attention back to the food.

[Episode 7] Zero-month old baby boy and mother (Utterance ID 340003-340015)

While changing the baby’s diaper, the mother continues to use both non-proxy talk and proxy talk as if she is almost offering a play-by-play, saying “upsy-daisy” (340003/non) and “now you’re all fresh” (340010/ch). It leaves an impression of rapid-fire events. She is not observing the baby and using proxy talk—in fact, she has no time to look at the baby’s expression because she is changing his diaper, but it looks like she is continuing to talk to the baby just enough to prevent him from becoming bad-tempered.

[Episode 8] 12-month old baby girl and mother (Utterance ID 301206-301213)

The child points to a ball that has rolled behind her back. The mother says “go get it” (301206/non), but the child does not immediately go and retrieve it. The mother claps her hands and encourages her, saying “Get set, go!” (301209, 301210/non), but does not use proxy talk. She calls her by name several times and repeats “go get it” until finally the baby crawls over to get the ball.

between the four pairs of parents and children at 0, 3, 6, 9, 12 and 15 months of age. In all of these episodes, a description of the function is added, so 62 kinds of functions are available data. The KJ method was used with a focus on these functions. As a result, the proxy talk functions were divided into 12 categories and then into the top four categories (Table 2). Looking at the number of episodes in Table 2, we find that the overall number of the episodes is high at the younger ages. This might look like it contradicts the result of the preliminary analysis showing that the number of proxy talk utterances was minimal at the younger ages, but when defining an episode as a series of speech utterances in the same context, we found that the context was shorter the younger the infant, and the number of utterances (including proxy talk) included in a single episode increased the older the infant. Table 3 provides examples of proxy talk episodes. The utterance ID and type of proxy talk or non-proxy talk is noted by the speech used in Table 3 and the text are appended¹².

Proxy talk function (1)—Proxy talk tailored to child

“Proxy talk tailored to child” includes “encouragement,” “encouragement of child’s semi-intentions,” “proxy talk to express child’s clear intention,” and “proxy talk from child to observer,” included in the lower-ranked category. “Encouragement” refers to proxy talk used to ensure that the child continues with the action they are already engaged in, or to encourage further action of the same sort. For example, in Episode 1 (Table 3), the parent used proxy talk to encourage the infant’s action. “Encouragement” was observed at three to 12 months, and primarily at six months.

“Encouragement of child’s semi-intentions” refers to situations in which the mother used proxy talk to encourage what she interpreted as the child’s intention to be in situations in which the child’s intention was not clear, but the mother found clues in the situation and the infant’s expression. For example, in Episode 2 (Table 3), the child was pushing a push-along car and walking around the room, but when the push-along car got stuck on electric cords or other similar events occurred, the mother would express the child’s internal emotions of surprise with sounds such as “Ah” or “Oh.” The child continued to play with a calm expression and did not exhibit any obviously negative emotions, but the mother, knowing the child’s everyday life, likely understood that such events could trigger a negative emotion in the child. The voice in which the parent delivered her proxy talk was not particularly exaggerated, and she did not stand up and go to help the child, but simply responded carefully to small events and used proxy talk each time, voicing the negative emotions the child may have felt and letting them evaporate. Moreover, the proxy talk itself consisted of “Ah” and “Oh,” without any specific target for these references, which reflected the child’s semi-intention. “Encouragement of child’s semi-intentions” was observed at 6–15 months. At this age, this reflected the development of the infant’s intentions.

In contrast, “proxy talk to express child’s clear intentions” refers to proxy talk in response to the child’s clear demonstration of intention. This was used in situations in which children were clearly trying to convey their intentions, such as through body movement and vocalization directed at the parent. This proxy talk faithfully voices these intentions. For example, in Episode 3 (Table 3), the infant says “u—” while looking straight ahead at the mother, but it seemed to be difficult for the infant to convey intention independently

using physical movement or verbalization. The mother responded to the “u—” by saying “Oh, that’s heavy isn’t it,” and then the child but seemed to have grasped the situation and, even though the block case was already on the floor, grasped both hands and gestured with strength. The infant seemed to understand the meaning of the situation through the proxy talk. “Proxy talk to express child’s clear intentions” was seen from nine months, and increased up until 15 months of age.

As regards “proxy talk from child to observer,” the child expresses clear intentions, and if this is directed at the observer, the parent talks as the child’s proxy and conveys this to the observer.

As such, “proxy talk tailored to the child” is proxy talk that fits the infant’s conditions and intentions, and have the function to compensate the linguistic immaturity of the child.

Proxy talk function (2)—“Proxy talk directing the child”

“Proxy talk directing the child” includes “guidance,” “inactive direction,” and “situation-dependent verbalization.” “Guidance” refers to directing children to other situations by using proxy talk with the opposite meaning in order to resolve the children’s negative situation. Episode 4 (Table 3) is an episode in which the child begins to grizzle, and the parent tried to guide the infant’s mood by not confirming the child’s poor mood and leaving aside the cause to try and guide the child’s mood with the opposite proxy talk. They did not use non-proxy talk to confirm by saying “you don’t like that” when the child becomes ill-tempered, or oppose the child’s poor temper using non-proxy talk. In order to divert the infant’s mood, the parent used proxy talk. However, the infant’s grizzling grew even louder, drowning out the third time the parent said “you can win, you can win.” The parent seemed to decide that it would be difficult to distract the child. The parent said, “yes, yes,” and gave up on trying to guide the child with proxy talk. The parent instantly switched to accepting the infant’s poor mood.

“Inactive direction” refers to proxy talk that directs a switch in action while watching the child’s reaction. For example, in Episode 5 (Table 3), when the child began to look sleepy during the observation, the parent said, “let’s try to open our eyes!” If this were an exchange between adults, “let’s try to” is an invitation to do something together, and can be seen as proxy talk from the parent and child’s perspective from an “our” standpoint. In other

words, the parent did not want the observation to be interrupted, but also did not want to use a direct instruction to this infant she was not yet used to, such as using non-proxy talk and saying “open your eyes.” She used the encouragement of “let’s try to open our eyes!” to make her speech more gentle. Moreover, as in Episode 6 (Table 3), this includes proxy talk to re-focus the infant’s attention. “Inactive direction” is observed during a broad observation period, but primarily at 0 months.

“Situation-dependent verbalization” refers to proxy talk in which, even though the child has not clearly indicated intention, the parent uses words closely related to situations in which the parent felt that situation-dependent and cultural perspective required that it should be voiced in this way. For example, there is an episode in which, although the infant (a six-month old boy) did not express “yummy” when eating,” the parent uses proxy talk from the parent-child perspective such as “so yummy, right?” (600625/pa), and an example of proxy talk from child’s position in which, when playing house, even though the infant (a six-month old boy) did had not waved his hand, the parent waved her hand and said “bye-bye (600127/ch).” In these proxy talk situations, in contrast to situations in which the infant has no vocalization or physical movement along with the situation, the parent uses expressions to indicate “yummy” and waves her hand, and by adding actions to proxy talk, the cultural context is verbalized, and direction based on the situation is given. “Situation-dependent verbalization” is observed at 6–12 months.

As such, “proxy talk directing the infant” is proxy talk used to make the child do something or feel something, and functions to direct the child.

Function of proxy talk (3)—Proxy talk as address to situations

The “proxy talk as address to situations” includes “time filling,” “parent’s desire for shared internal states,” and “emergency.” “Time filling” includes proxy talk to fill in time with the child. For example, in Episode 7 (Table 3), while changing the infant’s diaper, the mother explained her own actions in non-proxy talk and gave the infant a play-by-play rundown of her infant’s actions as a proxy talk. When changing diapers or caring for the baby in other ways, the mother does not have the leeway to closely watch the baby and respond with proxy talk tailored to the infant’s conditions. In fact, the parent did not turn her glance to the infant during this episode. The parent uses proxy talk to stall for time without the infant becoming grumpy. This kind of

proxy talk serves to fill time. This “time filling” was observed through nine months, particularly at zero months.

“Parent’s desire for shared internal states” refers to proxy talk of internal conditions (such as stress) of the parent herself. Proxy talk is the parent’s effort to vocalize in the child’s voice, so it can be seen as the parent’s de-visualization, but in episodes falling into this category, the parent becomes visible by voicing her internal condition to share it. Moreover, “emergency” refers to proxy talk in which the parent expresses emergency situations, for example, the spitting out of a sweet that the infant was eating. While responding to the situation (picking up the sweet that was spit out, for example), the parent uses proxy talk somewhat quickly to try and keep the baby in a good mood. “Emergency” was observed at 12 months and 15 months.

As such, “proxy talk to encourage situations” is proxy talk used to fill time and proxy talk used to maintain conditions, and plays a role in acting on the parent and child’s stalled condition.

Function of proxy talk (4)—Proxy talk as parent’s interpretation aid

Proxy talk as the parent’s interpretation aid includes “parent’s acknowledgement of situation” and “apologies to observer.” The “parent’s acknowledgement of situation” is a type of proxy talk in which the parent verbalizes the assumption she creates in an attempt to understand the child’s unclear and undifferentiated situation and give it meaning. While giving a voice to this, the mother looks for an opening in the unchanging situation and attempts to accept the situation. For example, in an exchange with an infant aged zero months, when the infant interrupts the breastfeeding, the mother says, “I don’t want any more” (300016/ch) and “you don’t want any more?” (300017/non) in a combination of proxy talk from child’s position followed by non-proxy talk. The mother spoke quietly, and seemed to lack confidence in her own interpretation, so that after the proxy talk, she asked questions to confirm. Voicing this as proxy talk likely plays the function of aiding the mother’s interpretation. This “parent’s acknowledgement of situation” is seen most often at zero months and was observed through six months.

“Apologies to observer” refers to proxy talk that serves as excuses and apologies to the observer for the child’s situation. For example, to an infant (boy aged zero months) who began to look sleepy during the observation, the mother used proxy talk from parent-child position, saying “getting tired,

aren't we, the eyelids (are getting heavy)" (600303/pa). This was a way of asking the nearby observer to be understanding of the infant's sleepiness.

In this way, proxy talk as the parent's interpretation aid is a sign of the parent's efforts to understand a child's undifferentiated intentions and actions by voicing her own assumption, and are directed at the parent herself and, on occasion, the observer.

Significance of the role that proxy talk plays in pre-verbal communication

Proxy talk seems to function as a means of compensating for the infant's lack of linguistic development as the mother verbalizes for the infant, but is this really the case? When we sort the utterances in the top four functional categories of proxy talk in terms of who the proxy talk serves, we find that there are roughly two types. The first is the top category "proxy talk tailored to the child" and "proxy talk directing the child." Proxy talk fitting these categories can verbalize the infant's current actions and thoughts or the parent's desired future actions and thoughts, and in this sense, this proxy talk can be thought of as "proxy talk for the child's sake." The second category, "proxy talk as encouragement" and "proxy talk as parent's interpretation aid," are typically used in situations in which it is difficult for the parent to understand and predict the infant's intention, and the parent voices her interpretation to settle her own feelings or to give herself time in which to settle her feelings. These kinds of proxy talk can be considered "proxy talk for the parent's sake," and even if it is proxy talk that verbalizes the infant's voice, we can observe that it does not reflect the parent's intentions and feelings, and proxy talk is used for the parent's sake as well. In other words, proxy talk is not used for just the parent or the child, but is directed toward both and supports pre-verbal communication.

Analysis 2

Thus far, we have examined the function of proxy talk, but in situations in which proxy talk is not used, why is not used? In particular, proxy talk declines from 12 months, and we wanted to look at what replaced the function that proxy talk served up until that point. The KJ method was used with non-proxy talk episodes in which proxy talk was not used in situations when it could have been used with different parent-child pairs and different

observation points. The results are organized as “un-proxy talk,” “response,” “non-voicing of proxy talk,” “proxy talk for toy” and “proxy talk for parent’s utterance” (Table 4).

Table 4—Functions of non-proxy talk

| | | 0 | 3 | 6 | 9 | 12 | 15 |
|------------------------------------|---|---------------------|---|---|---|----|----|
| | | Age No. of episodes | | | | | |
| Un-proxy talk | Though using proxy talk would not be unusual in this situation, it was not used. | 1 | 1 | 1 | 0 | 0 | 0 |
| Response | The proxy talk for children was non-voiced; a response to the infant’s unvoiced plea or question | 0 | 0 | 0 | 1 | 0 | 0 |
| Non-voicing of proxy talk | Non-voiced proxy talk seen as silence in situations in which proxy talk would have been voice up until this point | 0 | 1 | 0 | 0 | 2 | 3 |
| Proxy talk for toy | Proxy talk for the toy so that the child can understand the toy’s actions and intentions | 0 | 0 | 0 | 0 | 1 | 1 |
| Proxy talk for parent’s utterances | Parent’s utterances the child may use as proxy talk | 0 | 0 | 0 | 0 | 0 | 1 |

“Un-proxy talk” includes episodes in which proxy talk would likely have been used in different but similar situations. This was seen in episodes with the younger infants, and overall there was a sense of the parent’s tension (about being observed) and hesitancy with the infant. These situations suggested that the parent was not accustomed to engaging with the infant.

“Response” includes episodes in which responses are given in situations in which the parent’s verbal question did not take precedence. In other words, the infant’s proxy talk is not voiced, and this is the parent’s response to the infant’s unvoiced plea or question. For example, in an interaction with a nine month-old boy, the parent said “yes” (600904/non) when the infant stretched out his leg. The parent is not using proxy talk to specifically give meaning to the act of stretching out his leg, but by replying “yes,” the infant can know their own act must bring “some kind of” meaning and thus gives the exchange form. “Unvoiced proxy talk” is seen as pause in situations in which proxy talk would have been voice up until this point, and compared to the “response” situation, the child’s intention was clear. For example, in

Episode 8 (Table 3), the parent is directing the infant to get a ball, repeating the non-proxy talk direct instruction of “go get it” (3012016/non). The parent encourages the infant, who did not immediately go get the ball, by pointing her finger and shaking the baby’s body, but does not use proxy talk such as “oh, there’s the ball!” and “the ball is gone.” The mother’s repetition of “go get it” shows that she knows that the child understands these words. In these cases, the mother probably curbed her use of proxy talk to respect the infant’s understanding.

“Proxy talk for toy” is proxy talk for the toy in order that the child can understand the toy’s actions and intentions. In this research, since utterances including the child’s perspective are considered proxy talk, “proxy talk for toys” and “proxy talk for parent’s utterances,” discussed below, are included in non-proxy talk. “Proxy talk for parent’s utterances” refers to utterances that express what the parent surmises that the child expects her to say—it is essentially proxy talk for the parent’s proxy talk by the child. For example, the mother said to her 15 month-old daughter who was eating a Bolo snack, “Give one to Mama!” and when the child put one in her mother’s mouth, the mother said “Aahh-n” (301521/non) as she ate it. “Aahh-n” is an utterance attached to the mother’s action, so this would not be proxy talk for the child. However, when someone wants another person to eat something, the person trying to encourage this action usually says “Aahh-n” as proxy talk for the person doing the eating. In the data for infants up to 15 months of age, there were no cases in which the infant clearly used proxy talk for the parent, but if this “proxy talk for parent’s utterances” is internalized, the infant herself would use proxy talk.

As such, when we examine episodes related to proxy talk, we find that the infant’s utterances do not substitute for proxy talk (none of the infants spoke much during the observations), and proxy talk gradually becomes unvoiced. This shows that the mother leaves open a development pause to wait for the infant’s own voice.

General arguments

In this research, after the preliminary analysis in which we examined quantitative changes in the proxy talk used in parent-child communication during the pre-verbal stage, in Analysis 1 we considered the qualitative aspects of

proxy talk functions, and in Analysis 2, we looked at the substitutes for proxy talk in situations in which it was not used. Below, we examine the qualitative changes in proxy talk obtained from the preliminary analysis—in other words, we looked at the proxy talk episodes after classifying by function according to the infant’s age during 1) the period in which proxy talk gradually increases (0–3 months), 2) the period in which proxy talk reaches a peak (6–9 months) and 3) the period in which proxy talk declines (12–15 months).

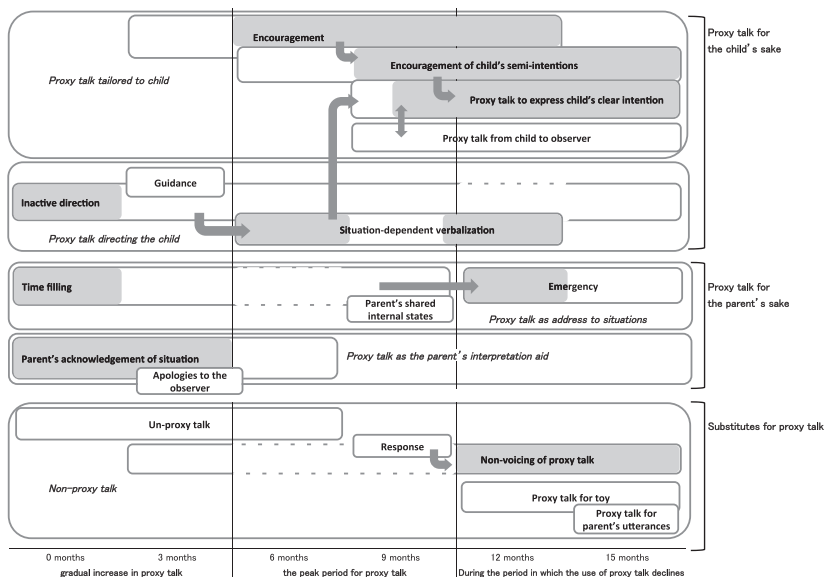


Fig.3 Proxy talk functions as the child ages

Note: indicates the scope of incidence, and indicates 2 or more episodes for age. In addition, even within the scope of incidence, instances of 0 episodes are shown using a dotted line.

The functional categories that define the period in which proxy talk gradually increases (0 to 3 months) are “inactive direction,” “parent’s acknowledgement of situation,” and “time filling.” The participant children in this research were first-born children, so this was their first experience for the parents to engage with infants. It was difficult to interpret the undifferentiated intentions of infants, and how to talk to and how to engage with the infant

was a matter of trial and error. According to the analysis of interviews with the same participants as this research (Sugano, 2008; Sugano et. al. 2009), the parents who felt negative emotions about their infants of zero months of age gave their inability to understand them as the reason. In these conditions, verbalizing voices about the infant as proxy talk would help the parent understand the infant and the conditions. The utterances the parent spoke as the infant's voice were likely what the parent herself heard the most. The parent recognizes the situation by using "parent's acknowledgement of situation" proxy talk and is also ready for the next steps of "inactive direction" and "time filling" as necessary. As regards "time filling," a young infant cannot express clear intentions, and it is also difficult for the parent to actively encourage expression at this age. "Time filling" proxy talk does not have any meaning itself, but is essentially background music for the time the parent and child spends together, which tends to be silent, and this proxy talk is also a way for the parent to regulate her feelings. As Valsiner (2007) also says, semiotic mediation using speech can put the subject outside of the context and distance herself psychologically from her emotions. In other words, verbalization allows objectification and emotional regulation. Emotions are not originally meant to be suppressed, but are instead regulator that allows a person to adapt to other people and the environment and build relationships with other people (Suda, 1999). In other words, "parent's acknowledgement of situation" and "time filling" proxy talk also plays a role in helping the mother adjust her emotions as she adapts to this new "other" represented by her infant. Moreover, the "un-proxy talk" in our analysis of non-proxy talk episodes in Analysis 2 suggests that this inexperienced mother is not yet used to the strategy of filling time with proxy talk.

During the proxy talk peak (6–9 months), there are episodes in which the parent uses proxy talk to "encourage" while interpreting the infant's actions and intentions, followed by "encouragement of the child's semi-intentions." These episodes are unique for the speaking function in place of the original significance of proxy talk. Infants from about six months of age become more active and begin to show curiosity about the outside world. The parent aligns herself to the infant's activities and interests and uses proxy talk to encourage the child to continue with those activities. In "encouragement," much of the proxy talk consists of onomatopoeic expressions, and the proxy talk is tailored to the visible actions rather than the infant's intentions. However, once there are signs of the infant's intentions, the function of proxy talk shifts

to “encouragement of child’s semi-intentions.” Ahead of the next period of a decline in proxy talk, the infant’s expression of intentions becomes clearer and the parent shifts to “proxy talk for infant’s clear intentions.” Moreover, during this period, when specific utterances are attached such as eating and playing house, the parent begins to use proxy talk that adds utterances that is typical for these conditions (“situation-dependent verbalization”). Through these exchanges that include this kind of situation-dependent verbalization proxy talk, the infant gradually has opportunities to learn exchanges using words for specific situations. These are drawn out from the particular situation as the child’s interpretation, and succeed to the “proxy talk for infant’s clear intentions” in the next stage.

During the period in which the use of proxy talk declines (12–15 months), proxy talk is used less as long as the parent and child can sustain peaceful exchanges. Compared to the proxy talk used to actively attach meaning to the infant’s undifferentiated actions, as in the period when the infant was very young, the child’s intentions on which this proxy talk is premised becomes clear, but “verbalization of the child’s intentions” is used as a passive proxy talk to compensate for the infant’s immature linguistic skills. “Proxy talk from the infant to the observer” is a case in which the infant’s actions are directed at the observer, and tis proxy talk is premised on the infant’s clear intentions. Moreover, this period is particularly distinct in that proxy talk decreases for many parents, but increases temporarily among some parents and children. Looking at the data for parents and children with a high number of proxy talk cases, we find “emergency” episodes. The number of proxy talk cases was high because in the “emergency” episodes, proxy talk is delivered in a continuous stream. In other words, originally in this period, non-proxy talk episodes would have been most common as a means of preserving the situation in which proxy talk would have been unvoiced (not said) and the mother offers a pause so that the infant can intervene with conversation of his/her own. However, in situations in which candy is dropped or other emergencies, the parent uses proxy talk to temporarily create an integrated status with the infant and respond while preventing the situation from collapsing significantly (such as picking up the dropped candy). In the period from 12 months, while preparing for communication, including proxy talk, the parent primarily communicates by using various kinds of non-proxy talk (“unvoiced,” “proxy talk for toys,” “proxy talk for parent’s utterances”), and the communication between parent and child becomes multi-layered.

The above suggests that the development changes in the function of proxy talk are 1) gradual increase in proxy talk (0–3 months), when the parent uses proxy talk in her exchanges with the infant for trial and error; 2) the peak period for proxy talk (6–9 months), when proxy talk is used for limited functions tailored to the development of the infant’s intentions; and 3) the period in which proxy talk use declines (12–15 months), when it is used in specific situations and for specific functions.

However, in this research, development is seen as the process by which an infant begins to participate in the cultural community (Rogoff, 2003), with proxy talk seen as cultural intermediation. How does a close other such as the parent represent the community and guide the infant in appropriating the necessary cultural voice through proxy talk?

For example, in Episode 1, when the infant stretched out his hands and leaned forward, the parent interpreted this as an indication that the baby wanted to crawl, and used proxy talk encouraging crawling. The parent did not interpret the infant’s undifferentiated action of stretching out his hands and leaning forward as the infant’s wish to separate from the parent. In Episode 4, when the parent is trying to respond to the infant’s fussing, the parent does not say “I don’t like that,” but rather “you can win, you can win” in proxy talk. In other words, proxy talk is selected as the voice that best fits the culture through the parent’s interpretation. An image of an infant who is actively taking up the challenge of crawling, rather than separating from his parent (Episode 1) and an infant who is trying to adjust his own negative feelings rather than displaying them (Episode 4) are cultural images that the parent has constructed in her personal history. As we have already noted, the “as-if” structure of interpretation (Valsiner, 2007) can be seen as leaps in inference and organization of particular situations, but this leap is not in a random direction, but is a cultural and historical product of the parent herself. In other words, we can view proxy talk as the process by which the parent externalizes her cultural voice, as discussed below.

When we examine changes in proxy talk by age, we find that proxy talk shifts from “encouragement” to “encouragement of child’s semi-intentions” to “proxy talk to express child’s clear intention” (Figure 3). The parent gradually changes from using proxy talk in response to undifferentiated actions that are difficult to interpret to proxy talk that reflects the infant’s intentions to the extent that she can interpret them. We must wait for more detailed analysis, but we believe that these changes are due to developments in communication

skills as the infant learns how to convey his/her intentions. In an example of “encouragement” in Episode 1, a six-month-old infant did not look at the parent to convey anything unless the parent was looking into his/her face. In an example of “encouragement of child’s semi-intentions” in Episode 2, a 12 month-old child did not voice any meaningful words when observed, but there were situations in which we observed that children had acquired several understandable words. However, these were situations in which the child was playing calmly by his self and not situations in which the infant was trying to engage with the parent. The parent knows that the child can become ill-tempered when unable to skillfully manipulate a toy, but in the prior situation, it was likely unclear as to whether the child would become ill-tempered. Symbolic proxy talk such as “aa—” and “oo—” reflects the infant’s intention to the extent that it can be interpreted. In other words, the parent respects the infant’s vague intentions and avoids over interpretation the situation (excessive leaps). In the Episode 3 example of “proxy talk to express child’s clear intention,” the infant clearly directs his glance at the parent and all, so that it is clear that he intends to convey something to the parent, so only verbalization was necessary. In this way, the leap in the “as-if” structure was revised as necessary as the infant’s response and the parent’s experience with child-rearing accumulated.

At the same time, from the infant’s perspective, even in the case of occasional actions, the parent’s choice of when to use proxy talk and when not to means that she is choosing which actions and conditions to encourage or direct, and which to ignore and let go by. These will be accumulated as the child’s own voices, and embodied as the child’s intention in each situation. From the infant’s perspective, proxy talk is the entry to the process of internalizing culture. For example, if we consider the developmental change from “situation-dependent verbalization” to “proxy talk to express child’s clear intention,” this comes across even more clearly. With “situation-dependent verbalization,” before the child identifies meaning in the relevant situation him/herself, proxy talk was carried out automatically with the mother making utterances for the specific condition. The infant gradually begins to link the situation to the corresponding words and this is internalized as the infant’s own voice so that the infant’s intentions are constructed. When the parent uses proxy talk to express the child’s intentions (“proxy talk to express child’s clear intention”), the cultural voice is being reproduced as it passes from the parent to the child. As the infant develops, the accumulated voices begin to

function as voices that forms the infant's own dialogical self (Hermans, 2001; Hermans & Hermans-Jansen, 2003), not just as the infant's intentions in that particular situation.

Of course, the cultural voices that the parent externalizes as proxy talk is not taken in as is by the infant. The "refining" process, including coincidence and the development of the infant's own understanding of proxy talk (for example, verbally), can intervene. In other words, initially conditions are vaguely positive or negative, but subsequently, as the infant understands words clearly, the infant her/himself can determine whether the proxy talk is right. For example, in Episode 3, discussed above, the parent interprets the infant's noise as meaning that the object is heavy and says, "Oh, that's heavy isn't it." And then, in response, the infant did not repeat the mother's utterance, "that's heavy" but returned the gesture, "heavy" with his satisfied expression that his intention had been conveyed. The process to appropriate the cultural voices is a process of internalization, including a kind of refinement, as the infant's subjective activity. In sum, externalization and internalization occur interchangeably, but this does not mean that the same thing is received, as if it were reflected in a mirror. Rather, the instantaneous exchanges take place with microgenetic mutual changes (for example, the way that the infant responds with gestures rather than words). Cultural development refers not only to simple internalization, but a process to appropriate the infant's own voices through the use of cultural tools. The use of proxy talk does not necessarily become the infant's internal voice without modification. Rather, it is built up over the accumulation of exchanges.

We have discussed the externalization and internalization of culture in terms of developmental changes in proxy talk, but this research also identified the function that proxy talk such as "parent's acknowledgement of situation" and "time filling" plays in helping the parent adjust her emotions. Before even looking at the infant's long-term development, the question of how parents address conditions that are inconvenient or confusing is an important issue for parents with children in their infancy. By using proxy talk, the parent at the very least avoids silence and arrives at her own interpretation through a series of self-directed questions using proxy talk and tries to settle her emotions through emotional distancing. Proxy talk is not used for the benefit of the parent or the child, but works on both levels and supports communication in the pre-verbal stage. This is also interesting in terms of the shift to the parent (for example, see Mitnick, Heyman, & Smith Slep,

2009; Katz-Wise, Priess, & Hyde, 2010, Okamoto, Sugano, and Negayama, 2003, etc.). In communication with pre-verbal infants, if the observer focuses only on the parent's use of proxy talk, it appears as if the parent and child are communicating. However, when we closely scrutinize each episode in which proxy talk is used, as we already noted, it does not necessarily reflect the intentions of the infant. Particularly when the infant is very young, the infant's condition is verbalized through proxy talk, some kind of meaning is assigned, and this allows the interpretation to be examined. In other words, proxy talk is possible not because the parent and child are communicating, but rather, proxy talk is motivated by the desire to communicate and is a kind of trial-and-error process.

Going forward, we hope to examine the relationship between the four types of proxy talk and their functions, the relationship to the development of the infant's communication skills, which are likely the trigger for changes in the proxy talk, and how communication between the parent and child develops from 15 months, when proxy talk decreases dramatically.

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Notes

1. Rissho University
2. Aoyama Gakuin Women's Junior College
3. University of Yamanashi, Graduate School of Education
4. Tohoku Gakuin University

5. Japan Organization for Employment of the Elderly, Persons with Disabilities and Job Seekers
6. Hosen College of Childhood Education
7. Chita Welfare Consultation Center
8. Shohoku College
9. Hokkaido University, Graduate School of Education
10. Tokyo Metropolitan University
11. This Japanese word, “*oishii*” means yummy and delicious, and “*oishii-ne*” that “*oishii*” is added “*ne*” has almost the same meaning. But the two words have different presuppositions in which “*oishii*” has only one speaker who think it is and “*oishii-ne*” has the speaker and a listener(s) both (all) of whom think it is.
12. An utterance ID used in the analysis is given to the examples of proxy talk presented in this report and the tables. Utterance ID consist of a two-digit number for the cooperator, a two-digit number for the age, and a two-digit number for the utterance. After the six-digit vocalization number, “ch” is added for proxy talk from the child’s position, “pa” is added for proxy talk from the parent-child position, “am” is added for ambiguous proxy talk, “tr” is added for transitional proxy talk, and “non” is added for non-proxy talk.

References

- Adamson, L.B., Bakeman, R., Smith, C.B., & Walters, A.S. (1987). Adults’ Interpretation of Infants’ Acts. *Developmental Psychology*, **23**, 383–387
- Bryant, G.A. & Barrett, H.C. (2007). Recognizing Intentions in Infant-Directed Speech: Evidence for Universals. *Psychological Science*, **18**, 746–751.
- Condon, W. & Sander, L. (1974). Synchrony demonstrated between movements of the neonate and adults speech. *Child Development*, **45**, 456–462.
- Fantz, R. L. (1961). The origin of form perception. *Scientific American*, **204**, 66–72.
- Fernald, A. (1985). Four-month-old infants prefer to listen to motherese. *Infant Behavior and development*, **8**, 181–195.
- Fernald, A., Taeschner, T., Dunn, J., Papousek, M., de Boysson-Bardies, B., & Fukui, I. (1989). A cross-language study of prosodic modifications in mothers’ and fathers’ speech to preverbal infants. *Journal of Child Language*, **16**, 477–501.
- Field, T. M., Woodson, R., Greenberg, R., & Cohen, D. (1982). Discrimination and imitation of facial expressions by neonates. *Science*, **218**, 179–181.
- Hermans, H.J.M (2001). The Dialogical Self: Toward a Theory of Personal and Cultural Positioning. *Cultural Psychology*, **7**, 243–281.
- Hermans, H.J. & Hermans-Jansen, E. (2003). Dialogical Processes and Development of the Self. In J. Valsiner & K.J. Connolly (Eds.), *Handbook of Developmental Psychology* (pp.534–559). London: Sage.

- Holquist, M. & Emerson, C. (1982). Glossary. In M. Bakhtin, & M. Holquist (Eds. and Trans.), Emerson, C. (Trans.) *The dialogic imagination: Four essays by M. M. Bakhtin* (pp. 423–434). Austin: University of Texas Press.
- Jacobson, J., Boersma, D., Fields, R., & Olson, K. (1983). Paralinguistic Features of Adult Speech to Infants and Small Children. *Child Development*, **54**, 436–42.
- Kaplan, P.S., Goldstein, M.H., Huckleby, E.R., Owren, M.J., & Cooper, R.P. (1995). Dishabituation of visual attention by infant- versus adult-directed speech: Effects of frequency modulation and spectral composition. *Infant Behavior and Development*, **18**, 209–223.
- Kato, T., Kurebayashi, N., Yuuki, M. (1992). *Issaiji to Yoikusha no Sogosayoniyoru Shakaitekikoi no Kozo: Yoji no “Hankoi” to Seijin niyoru “Kajo Kaishaku”*
The structure of social actions in the reciprocal actions of one-year old children and their caretaker: the infant’s ‘half-action’ and ‘over-interpretation’ of adults. In *Katei Kyoiku Kenkyu Kiyo (The Journal of Family Education Research Center)*, **14**, 96–103. (In Japanese)
- Kawakita, J. (1967). *Conceptualization method: for creative development*. Tokyo: Chuokoronsha (In Japanese)
- Kaye, K. (1979). Thickening thin data: The maternal role in developing communication and language. In M. Bulkwa (Ed.), *Before speech: The beginning of interpersonal communication* (pp. 191–206). Cambridge, England: Cambridge University Press.
- Katz-Wise, S.L., Priess, H.A., & Hyde, J.S. (2010). Gender-Role Attitudes and Behavior Across the Transition to Parenthood. *Developmental Psychology*, **46**, 18–28.”
- Kitamura, C. & Burnham, D. (2003). Pitch and communicative intent in mother’s speech: Adjustments for age and sex in the first year. *Infancy*, **4**, 85–110.
- Kitamura, C. & Lam, C. (2009). Age-Specific Preferences for Infant-Directed Affective Intent. *Infancy*, **14**, 77–100.
- Marcos, H., Rychebusch, C., & Rabain-Jamin, J. (2003). Adult responses to young children’s communicative gestures: joint achievement of speech acts. *First Language*, **23**, 213–237.
- Mashiyama, M. (1991). *Children becoming psychological humans*. Gendai Shiso, **19**, 104–115. Tokyo: Seidosha (In Japanese)
- Meltzoff, A. N. & Moore, M. K. (1977). Imitation of facial and manual gestures by human neonates. *Science*, **198**, 75–78.
- Mitnick, D.M., Heyman, R.E., & Smith Slep, A.M. (2009). Changes in Relationship Satisfaction Across the Transition to Parenthood: A Meta-Analysis. *Journal of Family Psychology*, **23**, 848–852.
- Newson, J. (1977). An intersubjective approach to the Systematic description of mother-child interaction. In H.R. Schaffer (ed.) *Studies in Mother-Child Interaction*. (Pp.47–61). New York : Academic Press.
- Okamoto, Y. (2001). *Interaction between mother and child*. Yamada, Yoko, Sato,

- Tatuya, Hirofumi, Minami (Eds.) *Catalog of Field Psychology* (pp. 12–19). Tokyo: Kanekoshobo. (In Japanese)
- Okamoto, Y. (2008a). *How to observe parent-infant interaction*. Okamoto, Yoriko, Sugano, Yukie (Eds.) *Developmental Psychology of Parents and Children: Essences of a Longitudinal Investigation*. (pp. 41–50). Tokyo: Shinyosha. (In Japanese)
- Okamoto, Y. (2008b). *Maternal proxy talk*. Okamoto, Yoriko, Sugano, Yukie (Eds.) *Developmental Psychology of Parents and Children: Essences of a Longitudinal Investigation*. (pp. 134–146). Tokyo: Shinyosha. (In Japanese)
- Okamoto, Y, Sugano, Y, Negayama, K. (2003). *Mother fetus interaction from the viewpoint of the pregnant women's diaries about fetal movements*. *The Japanese Journal of Developmental Psychology*, **14**, 64–76.
- Rogoff, B. (2003). *The cultural nature of human development*. New York: Oxford university press.
- Simon, F., Macchi, C.V., Turati, C., & Valenza, E. (2003). Non-specific perceptual biases at the origins of face processing. In O. Pascalis & A. Slater (Eds.), *The development of face processing in infancy and early childhood: Current perspectives* (pp.13–26). New York: Nova Science Publishers
- Suda, O. (1999). *Development to create emotion*. Tokyo: Shinyosha. (In Japanese)
- Sugano, Y. (2008). *Mother's Negative Feelings Toward Her Child*. Okamoto, Yoriko, Sugano, Yukie (Eds.) *Developmental Psychology of Parents and Children: Essences of a Longitudinal Investigation*. (pp. 147–158). Tokyo: Shinyosha. (In Japanese)
- Sugano, Y, Okamoto, Y, Aoki, Y, Ishikawa, A, Kamei, M, Kawata, M, Shoji, R, Takahashi, C, Yagishita (Kawata), A. (2009). *Maternal Accounts of Negative Feelings toward Their Children: A Longitudinal Study*. *Japanese Journal of Developmental Psychology* **20**, 74–85. (In Japanese)
- Trainor, L.J., Austin, C.M., & Desjardins, R.N. (2000). Is Infant-Directed Speech Prosody a Result of the Vocal Expression of Emotion? *Psychological Science*, **11**, 188–195.
- Trevarthen, C. (1979). Communication and cooperation in early infancy: A description of primary intersubjectivity. In M. Bullowa (Ed.). *Before Speech: The beginning of interpersonal communication* (pp.321–347). London: Cambridge University Press.
- Valsiner, J. (2007). Semiotic fields in action: Affective guidance of the internalization/externalization process. In J. Valsiner. *Culture in Minds and Societies: Foundations of Cultural Psychology* (pp.300–357). Los Angeles: Sage Publications.
- Wertsch, J. (1991). *Voices of the Mind—A Sociocultural Approach to Mediated Action*. Cambridge, Mass: Harvard University Press.