

A Statistical Analysis on the Use of Confirmations During Dyadic Picture Book Reading in Japanese*

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1. Introduction

The Japanese are often claimed to be more empathetic and caring and to place more value on interpersonal relationships than people in many Western cultures (Crane & Fernald, 2016; Hess et al., 1980; Ishizaki, 1996; Markus & Kitayama, 1991). This understanding has been widely debated and is now greatly accepted in various fields of research because of empirical evidence (anthropology: Lebra & Lebra, 1986; linguistics: Fernald & Morikawa, 1993).

However, the process through which children acquire culturally appropriate ways of speaking has not been discussed at length in previous research, and the research that does address it involves mostly qualitative studies based on a limited number of samples (Clancy, 1999; Fernald & Morikawa, 1993; Wellman et al., 1995). Therefore, this paper aims to reveal when and how Japanese caregivers teach their children to speak empathetically with confirmations during picture book reading through extensive data and statistical evidence.

Three main questions arise will be explored in this paper: (1) Do demographic factors influence the number of confirmations used during parent-child book reading? (2) When do Japanese caregivers teach their children to speak empathetically with confirmations during picture book reading? (3) How is the use of confirmations communicated to children?

In section two, previous studies of confirmations as a distinctive feature of empathetic speaking in Japanese and the segmentation standard for utterances will be introduced. In section three, an overview of the data set, method, and codes employed in this study will be provided. In section four, the statistical results will be shown, and in section five, the various factors that may have contributed to the findings in section four will be discussed. In section six, the limitations of this study will be provided. Finally, in section seven, the findings of this study will be summarized.

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2. Previous Research

2.1 *Empathetic Speech in Japanese*

From a pedagogic perspective, Karasawa et al. (2006) found that in 2003, 39% of Japanese university students believed that what was most important for children to learn in preschool was empathy, compared to only 14% of Americans. However, 19% of Americans believed that learning to have self-confidence and independence was most important, while no Japanese did. This study supports the highly influential education model that Azuma (1994) proposed, which maintains that many Japanese follow the Osmosis Model in which socializing agents form an empathic interdependence relationship with children. The difference between Japanese and American caregiving styles is observable from infancy (Ochs, 2002).

Such cultural differences may be the result of internalized long-standing biases instead of genuine cultural differences; therefore, sweeping assumptions must be avoided. In many cases, dichotomic categories are so simplistic that complexities can easily be overlooked (Killen & Wainryb, 2000). Nevertheless, there clearly are specific ways of speaking empathetically in Japanese that are less frequently used in English. A typical example is the projection of one's opinions and feelings through confirmations, especially the sentence-final particle *-ne*, for instance, *Kawaiine* ('Cute, right?')

Such speech is not only directed toward other people, but also toward inanimate objects. For example, Japanese mothers are more likely to encourage children to pat and speak to their toy dogs, with statements such as *Kawaii kawaii shite agete* ('Give it some love'), in which case children are expected to lovingly pat the toy dog while verbally complimenting its cuteness by saying *Kawaii kawaii* ('cute cute') (Fernald & Morikawa, 1993).

2.2 *Utterance Unit*

Dividing spoken conversation into utterances is a difficult process but an essential one for analyzing transcriptions. Various researchers have proposed what a single utterance consists of and how it should be segmented, but no clear consensus has been reached. One of the earliest but most influential definitions of an utterance is the Idea Unit that Kroll (1977) proposed. Kroll defines utterances as "a chunk of information which is viewed by the speaker/writer cohesively as it is given a surface form related to psychological reality for the encoder" (p. 85).

The Idea Unit is more applicable than the definitions various other researchers have proposed since it is adaptable to fragmented spoken conversations. In the case of children's speech, it is difficult to apply syntactical evaluation standards, as young children are not yet capable of speaking in complete sentences (Ochs & Schieffelin, 2017). Dividing conversation

by tone has proven inconsistent, and dividing spoken conversation by phrases and clauses can be difficult because speakers frequently overlap, repair, and interrupt (Tone Unit: Miller & Weinert, 2009; Phrases and Clauses Unit: Brown et al., 1984).

The Idea Unit is comprised of six main grammatical features that distinguish utterances from each other: (1) full relative clauses when a relative pronoun is present, (2) phrases set off from a sentence with commas, (3) verbal elements as objects, (4) reduced clauses in which a subordinator is followed by a non-finite verb, (5) post-nominal *-ing* phrases used as modifiers, and (6) absolutes, appositives, and verbals that may occasionally be counted as idea units. For example, Kroll maintains that “Sue roared all the harder./ She claimed I looked funny,/ clinging there,/ screaming./” should be counted as four idea units (1977, p. 91).

3. Data and Method

3.1 Data

Participants were recruited from the researcher’s friends and family from July 2019 to September 2020.¹ The children were between 2–59 months old at the time of the recording. All of the participants video-recorded themselves reading a book in Japanese in a home setting and answered a questionnaire asking for demographic details afterwards.² Of the 124 Japanese samples originally obtained for this study, 102 Japanese parent–child dyads were observed reading *Harapeko aomushi*³ (*The Very Hungry Caterpillar*) to their children. This book was chosen because it is widely read in many households from infancy to kindergarten, thus

¹ The data used for this study was obtained from a larger cross-cultural comparative study of the communication that occurs between parent and child during book reading.

² Of the 102 samples in this study, 85 (83.3%) were of mothers reading to their children, and 17 (16.6%) were of the fathers reading to their children. Regarding education, 84 (82.3%) of the readers had education levels equivalent to a bachelor’s degree, nine (8.8%) readers had a master’s degree, five (4.9%) readers had other types of post-secondary education, one reader had a secondary school education, and three (2.9%) readers refrained from answering. As for the participant’s history of joint picture book reading, 33 (32.3%) dyads had never read *Harapeko aomushi* before this reading session, 32 (21.3%) dyads had read the book under 10 times, and 35 (34.3%) dyads had read the book over 11 times. Two (1.9%) participants refrained from answering. Forty-three (42.1%) dyads read picture books daily, 32 (31.3%) dyads read them three to four times per week, 18 (17.6%) dyads read them once or twice a week, and eight (7.8%) dyads read them once every two weeks or less. One dyad refrained from answering.

³ *Harapeko Aomushi* is the Japanese translated version of *The Very Hungry Caterpillar*, a global best-selling picture book that has been translated into over 60 languages. The story is about a hungry baby caterpillar that eats continuously for a week until he turns into a butterfly.

allowing for a comparison between multiple age groups. The purpose of this study was not disclosed to the participants before the video recording so as not to influence the parent–child conversations during the sessions.

The average reader’s age was 33 ($SD = 4.31$, $Min = 28$, $Max = 46$). Fifty-four (52.4%) of the children were female and 46 (44.6%) were male. One video showed a male and female twin being read to simultaneously. One dyad refrained from answering. The child’s average age was 2;2 ($SD = 1;5$, $Min = 0;2$, $Max = 4;11$). Table 1 indicates the number of children of each sex in age groups of six month intervals.

Table 1

Children’s Age and Sex at the Time of the Recording

Age Group	Female	Male	N/A	Total
0;0-0;5	5	2		7
0;6-0;11	13	11	1	25
1;0-1;5	8	4		12
1;6-1;11	2	5		7
2;0-2;5	3	6		9
2;6-2;11	5	3		8
3;0-3;5	5	4		9
3;6-3;11	3	4		7
4;0-4;5	5	5		10
4;6-4;11	6	3		9

3.2 Method

All utterances in the videos were first transcribed and then coded using MAXQDA, a mixed-method data analysis software. Any utterances, as well as children’s non-verbal vocalizations, which could not be deciphered within three passes, were considered unintelligible. The coded texts were then divided into 10 groups based on the children’s age. Each age group covered six months: children 0–5 months-old were considered one group, children 6–11 months-old another, and so forth. The coded texts were then quantitatively analyzed using SPSS, an advanced statistical software platform, for further statistical analysis of the codes for each age group.

As it was unclear from the total number of utterances during a book reading session if children were more influenced by the frequency of a particular code or by its ratio, all analyses

were conducted from both perspectives (To determine, for example, if a generally silent mother's single instance of empathy training was more influential than a talkative mother's multiple utterances).⁴

3.3 Codes

Every utterance was first coded per utterance. Following Kroll's Idea Unit (1977), every new idea was considered a new utterance. As repetitions and repairs do not introduce new ideas, they were not considered independent utterances. For instance, if a mother says *Sorewa aomushidayo. Aomushi. Mieru? Midoridane.* ('That's a caterpillar. A caterpillar. Do you see it? He's green, isn't he?'), this would be divided into *Sorewa aomushidayo. Aomushi.* ('That's a caterpillar. A caterpillar'), *Mieru?* ('Do you see it?'), and *Midoridane* ('He's green, isn't he?').

Each utterance was assigned a mutually exclusive and exhaustive conversational function. The conversational function codes listed in Table 2 include the following: (1) the physical situation, (2) the emotional situation, and (3) opinions. The conversational function was primarily decided upon by the direct meaning of the utterance as well as its explicit and implicit contexts.

Codes concerning the physical situation included all utterances explaining the text, pictures, and characters' movements that are explicitly described or illustrated in the book. For example, explicit explanations such as *That's green, there he is!, One, two, three,* and *nom nom nom,* were coded as describing the physical situation. Any utterances referring to the characters' emotional state, for instance, *Ouch!* or *He looks so sad,* were coded as describing/asking about an emotional situation. To distinguish the physical from the emotional, anything mentioned directly in the text was categorized as physical. For example, utterances such as *He had a stomach-ache,* in response to "that night, he had a stomachache" (Carle, 1969) were coded as physical. However, if the speaker exclaimed, *Ouch!,* it was considered to refer to the caterpillar's emotional state.

The term *opinion* was used generally. Not only straightforward opinion statements, such as *He's beautiful! I like green. Do you like green?,* but also interjections used to express excitement, surprise, and care, such as *Awww, Huh!,* and *Wow!,* were classified as opinions. Relevant

⁴ The total number of codes per each age group was divided by the total number of the speaker's utterances to determine the ratio and by the total number of samples to determine the frequency. See Appendix for the total number of codes per each age group.

utterances, mainly those with the end-of-sentence particles *-ne*, *-yane*, *-yana*, or *-jyan*, were also coded as expressing confirmation.

Table 2

List of Codes

Code	Example
1. Opinions	<i>Kirei dane!</i> ('He's beautiful!') <i>Kazoeruniwa oosugiru.</i> ('There's too many to count.')
	<i>Kawaii.</i> ('Awww.')
	<i>Waaa!</i> ('Huhh!')
	<i>Kirei?</i> ('Is he beautiful?')
	<i>Sugoi!</i> ('Wow!')
2. Physical situation	<i>Midori da ne.</i> ('That's green.')
	<i>Paku paku paku.</i> ('Nom nom nom.')
	<i>Ichi ni san.</i> ('One, two, three.')
	<i>Sokoni irune.</i> ('There he is!')
	<i>Taiyono okaowa nikonikodane.</i> ('The sun has a smiley face.')
	<i>Ichigowa ikutsuaru?</i> ('How many strawberries?')
3. Emotional situation	<i>Kanashisoudane.</i> ('He looks so sad.')
	<i>Itaiyo!</i> ('Ouch!')
	<i>Ureshiinokana?</i> ('Is he happy?')
4. Confirmations	<i>Sorewa toridane.</i> ('That's a bird, right?')
	<i>Kireidayone?</i> ('Isn't that pretty?')

4. Results

4.1 Preliminary Analysis of the Relationship Between Confirmations and Their Speaker's Demographic Factors

A preliminary analysis was conducted using multiple regression analysis to rule out the possibility that any results obtained from this study stemmed from the participants' demographic backgrounds rather than from their linguistic patterns and ages. The results indicate that both the frequency and the ratio of the children's utterances strongly correlate with their age and mildly correlate with their history of reading the book prior to the video recording.

Table 3 and Table 4 show the results obtained from the multiple regression analysis, that is, the impact of the participants' demographics on the ratio and frequency of confirmations. These results indicate that parents' confirmations mildly correlate with children's history of reading *Harapeko aomushi*. Specifically, parents were less likely to use confirmations when children had read the book many times ($p = 0.041$, $t = -2.072$). While the correlation of the children's confirmations is weak compared to that of the parents, the children were still less likely to use confirmations when they had read the book many times ($p = 0.06$, $t = -1.903$). Additionally,

both the frequency and ratio correlate relatively strongly with the children's age, indicating that older children tend to express more confirmations than younger children (frequency: $p = 0.013$, $t = 2.529$; ratio: $p = 0.002$; $t = 3.239$). In contrast, the reading frequency and the readers' sex, education, and age correlate with neither the parents' nor the children's confirmations.

Table 3

Multiple Regression Analysis on Demographic Factors Based on Frequency of Confirmations

Parent/Child	Demographic Factors	<i>t</i>	<i>p</i>	
Parent	Reading Frequency	0.994	0.323	
	Reading History	-2.072	0.041	*
	Child's Age	0.276	0.783	
	Reader's sex	0.032	0.975	
	Reader's Education	1.153	0.252	
	Reader's Age	0.509	0.612	
Child	Reading Frequency	0.742	0.460	
	Reading History	-1.903	0.060	†
	Child's Age	2.529	0.013	*
	Reader's sex	1.122	0.265	
	Reader's Education	-0.934	0.353	
	Reader's Age	1.053	0.295	

† $p < .10$, * $p < .05$, ** $p < .01$

Note. Reading frequency = The number of times the parent(s) read to their children every week, ranging from zero times, once every other week, one to two times every week, three to four times every week, or every day; reading history = The number of times the children had been read *Harapeko aomushi* prior to this reading session, ranging from zero, one to five, five to ten, or over eleven times; Children's age = the children's age in months; The readers' sex = male, female, or other. The data were binarized for sake of statistical comparison, with one representing female and zero representing male; Reader's education = The readers' education level, ranging from the completion of junior high school, high school, undergraduate studies, to graduate studies; Reader's age = the reader's age in years.

Table 4

Multiple Regression Analysis on Demographic Factors Based on Ratio of Confirmations

Parent/ Child	Demographic Factor	<i>t</i>	<i>p</i>	
Parent	Reading Frequency	1.428	0.157	
	Reading History	-0.085	0.933	
	Child's Age	0.828	0.410	
	Reader's sex	0.093	0.926	
	Reader's Education	0.774	0.441	
	Reader's Age	-1.195	0.235	
Child	Reading Frequency	0.209	0.835	
	Reading History	-0.468	0.641	
	Child's Age	3.239	0.002	**
	Reader's sex	1.187	0.238	

Reader's Education	0.336	0.738
Reader's Age	-0.311	0.756

†p < .10, *p < .05, **p < .01

Note. Reading frequency = The number of times the parent(s) read to their children every week, ranging from zero times, once every other week, one to two times every week, three to four times every week, or every day; reading history = The number of times the children had been read *Harapeko aomushi* prior to this reading session, ranging from zero, one to five, five to ten, or over eleven times; Children's age = the children's age in months; The readers' sex = male, female, or other. The data were binarized for sake of statistical comparison, with one representing female and zero representing male; Reader's education = The readers' education level, ranging from the completion of junior high school, high school, undergraduate studies, to graduate studies; Reader's age = the reader's age in years.

4.2 Kruskal-Wallis Test on Confirmations

After clarifying various factors that may interfere with the causal relationship between children's age and style of speech in the preliminary analysis, the correlation between children's age and confirmations was examined using the nonparametric Kruskal-Wallis test.

The results in Table 5 suggest that any trends found in parental confirmations in correspondence to children's age were not proven significant. This indication is most likely because parents consistently used confirmations across all age groups, which made it difficult to find differences with the Kruskal–Wallis test. On the other hand, both the ratio and the frequency of the children's confirmations were statistically significant.

Table 5

The p-Value of Expressing a Confirmation Based on the Kruskal-Wallis Test by Ratio and Frequency

Code	Parent	Child
Ratio	.306	.000
Frequency	.140	.000

p < .05

Note: The Kruskal-Wallis test is a nonparametric test that predicts any significant difference between three or more unpaired groups. Since this study comprised 10 unpaired and nonparametric age groups, the Kruskal-Wallis test was considered the most suitable method. A p-value of less than 0.05 was considered statistically significant.

4.3 Analysis of Expressions of Confirmation

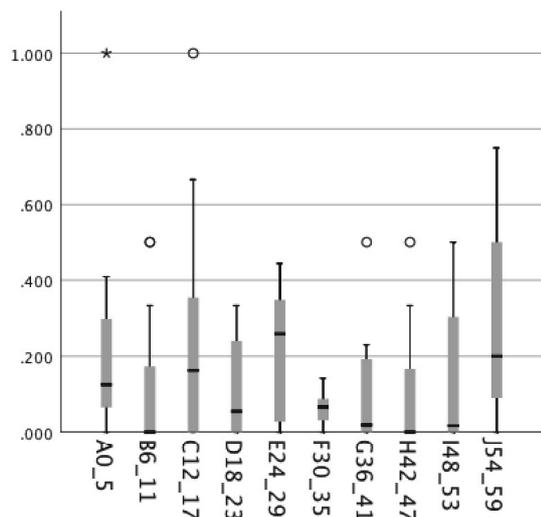
While the results of the Kruskal-Wallis test indicate a need for more samples to support this study's findings statistically, a further observation based on a box plot reveals that Japanese

parents increase the complexity of their confirmations while decreasing the amount of scaffolding.

The ratio and frequency of the parents' confirmations in accordance with their children's age are presented in Figure 1 and Figure 2, respectively. These results suggest that Japanese parents frequently use confirmations even to pre-verbal children. Approximately 30% of parental utterances were confirmations when their children were 0–5 months old. This percentage was roughly consistent until it dipped below 10% for children 30–35 months old. After this rapid drop, the parents resumed using confirmations at a higher ratio, which steadily increased as the children developed, reaching nearly 50% when the children were 54–59 months old. Consequently, the ratio of confirmations formed a U-shaped box plot. At the same time, the actual frequency of confirmations was normally distributed, with utterances toward children peaking among children 24–29 months old. These results indicate that parents speak less to pre-verbal children and children over four years old than they do to children who are two years old, but that a comparatively small number of utterances are confirmations.

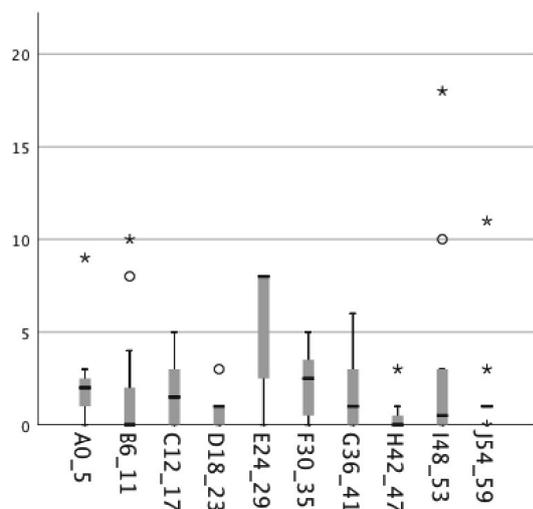
Figure 1

Parents' Expressions of Confirmation by Ratio According to Children's Age



Note: Figure 1 shows the ratio of the parents' expressions of confirmation in accordance with the children's age groups. The vertical axis is the ratio, and the horizontal axis is the children's age divided into groups of six months, ranging from zero to 59 months. The whiskers extend to the highest and lowest values from the top and bottom of the box to no greater than 1.5 times the interquartile range, which contains the middle 50% of the values. The circles represent outliers between 1.5 and three times the box height, and the asterisks represent extreme outliers that are more than three times larger than the box height, which is at the 75% mark.

Figure 2
Parents' Expressions of Confirmation by Frequency According to Children's Age



Note: Figure 2 shows the frequency of the parents' expressions of confirmation in accordance with the children's age groups. The vertical axis is the ratio, and the horizontal axis is the children's age divided into groups of six months, ranging from zero to 59 months. The whiskers extend to the highest and lowest values from the top and bottom of the box to no greater than 1.5 times the interquartile range, which contains the middle 50% of the values. The circles represent outliers between 1.5 and three times the box height, and the asterisks represent extreme outliers that are more than three times larger than the box height, which is at the 75% mark.

Further observation of how confirmations are used in combination with other codes, as presented in Figure 3, indicates that as children mature, parents alternate between combining confirmations with utterances concerning a physical situation and utterances expressing opinions. For example, as Excerpt 1 shows, the parents of children under one year old frequently labeled objects and described physical states in the book through the use of expressions, such as *Tamagodane* ('It's an egg, isn't it?').

Furthermore, the parents alternately emphasized objective descriptions and subjective opinions while continually increasing the level of complexity. For example, the majority of utterances by children aged 0–17 months labeled and described directly observable situations, as shown in Excerpt 1. Other examples included *Otsukisamadane* ('That's a moon, isn't it?') or *Happa tabemashitane* ('He ate the leaf, didn't he?') The parents of children aged 18–23 months used confirmations, such as *Kireidane* ('Isn't it beautiful?'), to explain opinions rather than physical situations, as shown in lines two and four in Excerpt 2. The parents of children aged 24–35 months began including more detailed information, such as *Isshō damonne katachigane* ('It's the same, isn't it. The shape, right?') The parents of children aged 42–59

months introduced comparisons, such as *Kocchinohouga ookiine* ('This one's bigger, isn't it?'), and summaries, such as *Oyatsu tabesugite onaka itaku nattandane* ('He ate too many snacks and he got a stomach-ache, didn't he?').

Excerpt 1

Reading of a Mother and her Four-Month-Old Child

- 01 MOT: *Oya Happano ueni chittchana tamogo. Tamagodane.*
Oh leaf's top small egg egg, right?
Oh, a little egg lay on a leaf. Egg, right?
- 02 *Otsukisamaga sorakara mite iimashita.*
Moon from sky look said
The moon said so from the sky.

Note. Direct readings from the text are italicized and confirmations are underlined. The second line under each Japanese (romaji) transcription is a direct word-for-word translation from Japanese to English, and the third line is the translated meaning.

Excerpt 2

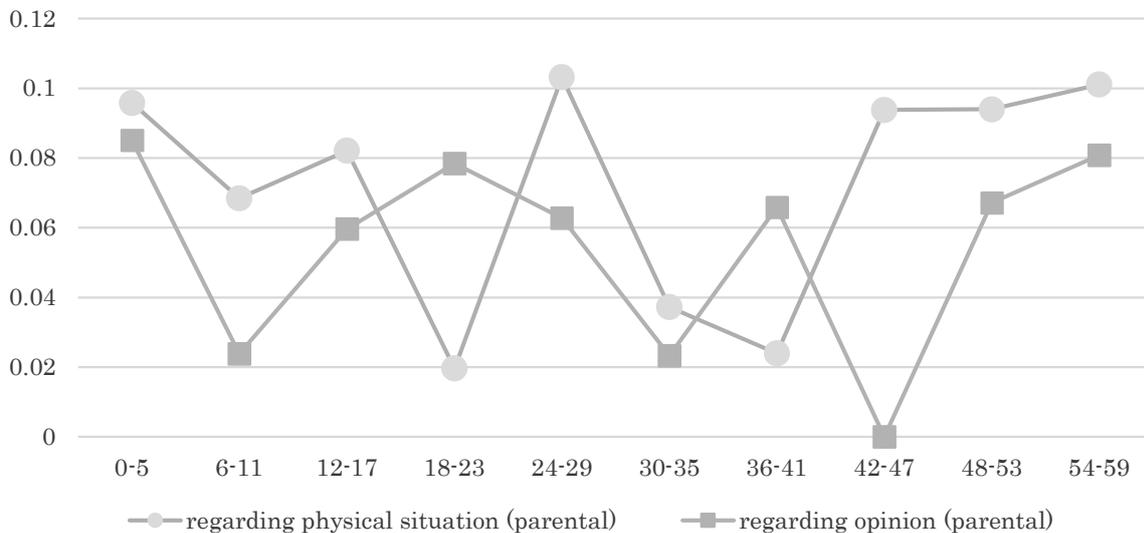
Reading of a Mother and her 18-Month-Old Child

- 01 MOT: *A choucho! Aomushiga saigo kireina chouchoni narimashitayo.*
Oh butterfly caterpillar last beautiful butterfly became
Oh a butterfly! The caterpillar became a beautiful butterfly
at the end.
- 02 *Kireidane. Un Kore aomushidattandayo.*
Beautiful, isn't it? Yes This was caterpillar
It's beautiful, isn't it? Yes. This was a caterpillar.
- 03 *Sanagini natte. Hora.*
cocoon became Look
It became a cocoon. Look.
- 04 *Aomushiga sanagininatte chouni natta.*
Caterpillar became cocoon butterfly became.
The caterpillar became a cocoon then turned into a butterfly.
- 05 *Hai oshimai. Kireini nattane.*
Okay The end. Beautiful became, right?.
Okay, the end. It became beautiful, right?

Note. Direct readings from the text are italicized and confirmations are underlined. The second line under each Japanese (romaji) transcription is a direct word-for-word translation from Japanese to English, and the third line is the translated meaning.

Figure 3

Parents' Expressions of Confirmations in Combination with the Content of Utterances (Ratio)



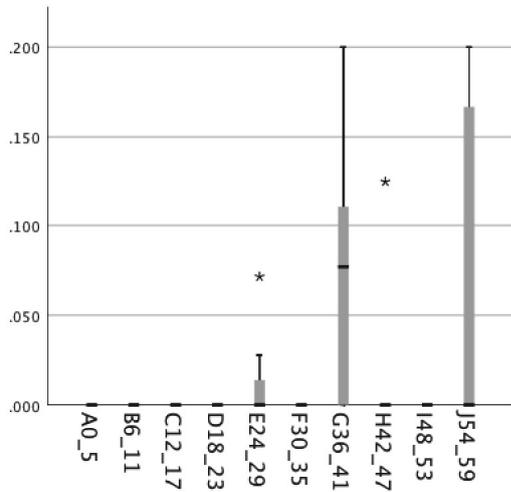
Note: Figure 3 shows the content of the parental utterance in which confirmations were used. The vertical axis is the ratio, and the horizontal axis is the children's age divided into six-month groups ranging from zero to 59 months. The mean number of confirmations referring to physical situations and opinions for each age group, respectively, are shown.

As mentioned above, the children's confirmations were statistically supported by the Kruskal-Wallis test. As Figure 4 and Figure 5 indicate, both their frequency and ratio steadily increased with age; however, there were large gaps in some age groups when only an insignificant number of participants used confirmations. The children began using confirmations after turning two, but the frequency was limited, with only one to two occurrences during a book reading session.

Of particular interest is the correspondence between the parents' and the children's utterances. The children began using confirmations at 24–29 months, the age group when the parents used the highest ratio and frequency of confirmations. However, when their children were 30–35 months old, the parents suddenly decreased both the frequency and the ratio of confirmations. When the children were 36 months and older, the parents continuously decreased the frequency of confirmations, but the children's frequency of confirmations steadily increased. These results suggest that parents decrease the amount of scaffolding once their children become verbal and display signs of competency in using confirmations.

Figure 4

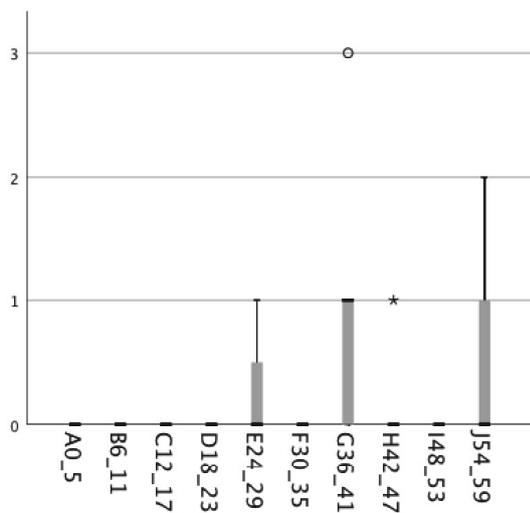
Children's Expressions of Confirmation by Ratio According to Their Age



Note: Figure 4 shows the ratio of the children's expressions of confirmation in accordance with the children's age groups. The vertical axis is the ratio, and the horizontal axis is the children's age divided into groups of six months, ranging from zero to 59 months. The whiskers extend to the highest and lowest values from the top and bottom of the box to no greater than 1.5 times the interquartile range, which contains the middle 50% of the values. The circles represent outliers between 1.5 and three times the box height, and the asterisks represent extreme outliers that are more than three times larger than the box height, which is at the 75% mark.

Figure 5

Children's Expressions of Confirmation by Frequency According to Their Age



Note: Figure 5 shows the frequency of the children's expressions of confirmation in accordance with the children's age groups. The vertical axis is the ratio, and the horizontal axis is the children's age divided into

groups of six months, ranging from zero to 59 months. The whiskers extend to the highest and lowest values from the top and bottom of the box to no greater than 1.5 times the interquartile range, which contains the middle 50% of the values. The circles represent outliers between 1.5 and three times the box height, and the asterisks represent extreme outliers that are more than three times larger than the box height, which is at the 75% mark.

5. Discussion

This study investigated Japanese caregivers' use of confirmations during parent-child book reading as a medium for empathetic speech. Three research questions were posed in this study: (1) Do demographic factors influence the number of confirmations used during parent-child book reading? (2) When do Japanese caregivers teach their children to speak empathetically using confirmations during picture book reading? and (3) How is the use of confirmations communicated to the children?

A preliminary analysis of the first research question suggested that both the children and the parents were less likely to use confirmations when the children had read *Harapeko aomushi* many times in the past. Additionally, it indicated that older children tend to express more confirmations than younger children. Understandably, older children express more confirmations because communicating with others by speculating how they may feel and showing understanding through the use of confirmations requires a level of cognitive development that pre-verbal children have not yet acquired.

That both the children and the parents used confirmations less frequently when they had read the book many times was surprising, as it was expected that if the parents and the children had a mutual understanding of the content of the book, they would have displayed it through the use of confirmations. It may be that if the parents and their children had read the book many times, they had gone beyond the stage of confirming the book's content and moved to a more advanced level of communication, for example, the exchange of ideas or derivations from the text.

Although some previous research has shown that gender may influence how parents read to their children (Fletcher & Reese, 2005; Frosch et al., 2001; Leaper et al., 1998), in this study, the reader's sex did not significantly correlate with either the parents' or the children's utterances. Gender roles have possibly changed within the last two decades, and the findings of previous studies should be revisited to accommodate present social dynamics.

The results of the second research question, when Japanese caregivers teach their children to speak empathetically through the use of confirmations during picture book reading, show

that when the children were at a pre-verbal stage, their parents gradually increased the number of confirmations until the children became fully verbal at around 24–29 months. However, once the children started using confirmations on their own and indicated that they knew how to use them correctly, the parents decreased the amount of scaffolding to encourage the children to use them independently. The increase in the ratio may have occurred because the parents were more likely to allow their children to take initiative in holding a conversation when the children were 3–4 years old, causing the overall number of parental utterances to decrease, as the parents switched to expressing confirmation in response to their children’s utterances.

The results of the third research question, how parents use confirmations to communicate with their children, indicate that parents may first explain directly observable explicit physical situations and then begin introducing opinions as their children’s cognitive skills develop. This finding is supported by the fact that the children’s age when the parents introduced opinions combined with confirmations was 18–23 months, which overlaps the transition from the one-word stage to the two-word stage.

Furthermore, the parents alternately emphasized objective descriptions and subjective opinions while continually increasing the level of complexity. Considering that emotional states are much harder to understand than directly observable physical states, it can be speculated that parents transition from using confirmations for physical states to emotional states. Instead, the results revealed that parents alternate confirmations of physical and emotional states. This alternation may be the result of the parents focusing on only one aspect of the book at a time to confirm that their children understood and reached a certain cognitive level before moving on to the next phase. It also may be an indication that Japanese parents emphasize both emotional and physical states even at the pre-verbal stage.

6. Limitations

Several factors limited the reliability of this study. First, the Kruskal-Wallis test returning results that were not statistically significant indicates a serious flaw in the statistical significance of this study, most likely due to a shortage of samples. Most previous literature used a limited amount of data, with the majority of studies using 20–30 samples. For this reason, few studies made cross-sectional observations over a broad range of age groups. This study aimed to overcome this deficiency by providing an ample sample volume of over 100 cases, but this sample size still proved insufficient considering the wide age span of 0–4 years. Over thirty samples per age group is ideal.

In terms of methodology, the content of confirmations should be further analyzed while considering the influence of individual differences. This study was based on the average ratio and frequency of each age group because considering individual differences was difficult with the limited sample size. Considering individual differences is essential for further research.

Finally, while a statistical approach is much needed in this field of research, and while it is beneficial in avoiding biased assumptions, a qualitative discussion should also be implemented to uncover the complex dynamics of naturally occurring speech, which cannot be fully analyzed statistically.

7. Summary

This study investigated when and how Japanese caregivers use confirmations during parent–child book reading as a medium for empathetic speech. Three main questions were addressed: (1) Do demographic factors influence the number of confirmations used during parent–child book reading? (2) When do Japanese caregivers teach their children to speak empathetically through confirmations during picture book reading?, (3) How are confirmations communicated to the children?

One hundred and two Japanese parent-child dyads were videotaped reading *Harapeko aomushi* (the Japanese translated version of *The Very Hungry Caterpillar*) to their children ($M = 2;2$ $SD = 1;5$, $Min = 0;2$, $Max = 4;11$). All utterances except for direct readings of the text were assigned a mutually exclusive and exhaustive code for its conversational function: (1) the physical situation, (2) the emotional situation, and (3) opinions. Any utterances that indicated confirmation, particularly those with the sentence-final particles *-ne*, *-yane*, *-yana*, or *-jyan*, were additionally coded as expressing confirmation. The coded texts were then divided into 10 age groups of six months each.

The results addressing the first research question on the relationship between the participants' demographics and the use of confirmations show that both the parents and the children used fewer confirmations when they had read the book together many times before. This finding suggests that when parents and their children read a book many times, they go beyond the stage of confirming the book's content and advance to a higher level of communication, such as the exchange of ideas or derivations from the text.

While previous research indicates that gender may influence the way parents read to their children (Fletcher & Reese, 2005; Frosch et al., 2001; Leaper et al., 1998), in this study, the reader's sex was not correlated with the parents' nor the children's confirmations. Previous

studies' findings may need to be revisited to accommodate present social dynamics in gender roles.

Regarding the second and third research questions of when and how Japanese caregivers teach and use confirmations, while more data is required to prove statistical significance, it was found that 10–30% of the parents frequently used confirmations even with pre-verbal children. The parents steadily increased the number of confirmations up until the children were 24–29 months, at which time the children also started using confirmations. As the children's use of confirmations steadily increased with age, their parents gradually decreased the amount of scaffolding. The parents also alternated between emphasizing objective descriptions and subjective opinions while continually increasing the level of complexity, resembling a double helix structure. These results suggest that while Japanese parents value both objective physical states and subjectivity, they tend to focus on only one of them at a time to confirm that their children reach a certain cognitive level before moving to the next phase of learning.

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Appendix

Table 6
Total Number of Codes per Child's Age

Age Group	regarding physical situation	regarding emotional situation	regarding opinion	Expressing Confirmation	a utterances
Parent					
A0_5	54	2	12	9	72
B6_11	210	17	32	37	336
C12_17	92	4	20	21	134
D18_23	34	6	7	6	51
E24_29	161	8	36	45	223
F30_35	159	8	20	18	215
G36_41	103	2	47	17	167
H42_47	21	4	1	4	32
I48_53	77	2	26	33	149
J54_59	56	0	28	20	99
Child					
A0_5	0	0	0	0	0
B6_11	0	0	0	0	0
C12_17	8	1	3	0	14
D18_23	11	1	0	0	12
E24_29	101	0	13	2	115
F30_35	75	1	13	0	92
G36_41	51	5	38	8	100
H42_47	34	0	2	1	36
I48_53	65	1	27	0	107
J54_59	72	0	29	5	110