

Parent-Child Communication in Stimulating Co-Creative Play: Indonesia and Japan

JUNAIDY, Deny W.¹⁾, NAGAI Yukari¹⁾, MORI Shintaro¹⁾, TANIGUCHI Shunpei¹⁾, YOSHIDA Toru¹⁾
{denywilly, ynagai, morishin, sp-tanig}@jaist.ac.jp, toru@uplus.com

1) Japan Advanced Institute of Science and Technology

【Abstract】 : This study focused on parent-child interaction, specifically, communication in stimulating co-creative play. The findings indicate that indulging in role-taking behavior (i.e., taking over a task for their child) gave parents a feeling of contentment as they performed the role of loving parents. At the same time, the behavior satisfied the child's desire for dependency. In this study, the parents (providers) and children (recipients) co-created value during creative play activities. Stronger role-taking behavior by the parents offered the children an apprentice-like experience that allowed them to acquire a formative skill (i.e., craftsmanship), whereas weaker role-taking behavior stimulated the children's exploratory thinking (creativity).

【Keywords】 Parent-child communication, Co-creative play, Global collaboration

1. Introduction

Previous literature has identified the qualities of parent behavior linked to positive child developmental outcomes such as affection (warmth, care), responsiveness (sensitivity), encouragement (scaffolding, autonomy support), and teaching (language and literacy support, cognitive stimulation) (Woolldridge, 2012; Petgill & Deater-Deckard, 2004; Caspi, 2004). Parent-child attachment relationships in Asian countries are also considered valuable, as they affect the children's social development in their next phase of maturity (Zevalkink et al., 2008). The unique interdependent relationship between Asian parents and their children is an indigenous concept characterized by motivation to be guided by others (Bornstein, 1993). In this research, we explore phenomena that can be clearly recognized as intimate expressions during role-taking behavior, acts of devotion, and habits of demonstrable affection that contribute to children's development of creative and formative skills. Specifically, we investigate communication during a parent-child creative play activity in Indonesia, a country with 500 living languages, and Japan.

2. Related Works

2.1 Recent Studies on Parent-Child Interaction

Communication contributes to human interaction and learning. Parent-child interaction provides resources for the child's individual development, while at the same time, it may also implies constraints for each other's need fulfillment (Trommsdorff, 2006). Recent studies on parent-child interaction supporting a creative environment have focused on technology, such as electronic toys or interaction devices, that supports a remote communication system (Woolldridge, 2012; Yarosh, 2013). Few studies have sought to clarify the important role of caregivers in a child's play experience (Singer & Singer, 2005; Yoshida, 2013). Lizuka et al.'s (2012) study on factors related to co-creativity in human-to-human non-verbal interaction focused on the information system. However, none of the above studies have discussed the indigenous Asian characteristics of interaction and communication to stimulate co-creative play; therefore, we explore this aspect of communication in two Asian countries, Indonesia and Japan.

2.2 Indigenous Asian Concept of Parenting

In Asian culture, individuals are not always required to be independent and autonomous; rather, interdependence is emphasized (Markus & Kitayama, 1991). This unique interdependent relationship is an indigenous concept that is characterized by motivation to be guided by others (Bornstein, 1993). The behavioral pattern is typically found in mother-child relationships characterized by role-taking behavior: one person is the requester, and the other is the provider (Lebra, 1976). In Indonesian culture, a care-giver always considers three principles of child nurturance: *asih* (showing affection), *asah* (stimulating potentials), and *asuh* (fulfilling needs) (Geertz, 1961; Koentjaraningrat, 1987; Hakim, 2012; Thontowi, 2012). These principles are internalized to children's character and incorporate spoiled behavior—called *kolokan* in Indonesian. Similarly, in Japanese, *amae*

refers to inappropriate behavior or requests made with an expectation of acceptance by the person to whom they are directed (Yamaguchi et al., 2006). This behavior tends to be reciprocal, depicting interdependence rather than dependence in the roles of the requester and provider (Rothbaum et al., 2007). When it takes the form of role-taking, such behavior mimics the over-protective and over-indulgent interaction and attitudes of parents toward children that might provide resources or imply constraints on the child's development. In this research, we focus on recognizably intimate behavior, that is, habits of demonstrable affection that contribute to parent-child co-creative play. The joy, satisfaction, and happiness individuals attained from subjective well-being in this particular research may provide insights for future collective studies on transformative research service (Anderson et al., 2012).

3. Research Aim

We aim to identify the differences in intimate expressions and acts of devotion in parent-child communication by stimulating co-creative play and co-creation of value.

4. Study Design

4.1 Method

We conducted three experiments in each of three local craft villages in Indonesia and one village in Japan. The three experiments are as follows:

- Experiment A: Making a Japanese ceramic whistle (陶笛) to observe children's formative play skills (craftsmanship)
- Experiment B: Making a musical instrument that produces three tones to observe group work and parent-child communication
- Experiment C: Making a musical instrument that produces sound as a result of the player's body action observing children's exploratory thinking and parent-child communication

We aim to gather data on the following:

- (1) Children's formative play skills (craftsmanship)
- (2) Parent-child communication structures

To investigate (1) "Children's formative play skills," we analyzed the results of Experiments A and C, focusing on evaluations of the object (ceramic whistle) and activity. We considered the task completion time, accomplishment, accuracy, functionality, and uniqueness (non-similarity). Then, to explore (2) "Parent-child communication structures," we analyzed data from Experiments B and C, focusing on the intimate cross-communication that occurred in the form of role-taking behavior. Network Analysis was employed to evaluate the content and number of utterances in communication.

The data on the object and activity were evaluated by six experts in craft and design. The data on parent-child communication structure were transcribed and analyzed through text and network analyses. Out-Degree Centrality (ODC) scoring was used to describe the role of intimate expressions and acts of devotion in parent-child communication to stimulate co-creative play.

4.2 Participants

The Indonesian participants comprised 15 children from three different regions. The Japanese participants comprised 4 children from one region. The gender of the subjects was random, and the age range was 7 to 12 years. Each child was paired with one of his/her parents (i.e., mother or father). Thus, the total number of participants included 19 children and 19 parents. All the participants lived near the local craft village in their region, and most did not know each other.

4.3 Procedure

Each experiment (A, B, and C) was conducted separately in each town and was completed within a period of one hour. The parents sat next to their children at a U-shaped table. The children were asked to complete three tasks on their own, but the parents were allowed to assist if the child needed help. The participants were free to communicate with each other. Two video cameras were set up to record their interactions.

- Experiment A: The children were asked to make a Japanese whistle by replicating a sample, with video guidance available.
- Experiment B: The children were divided into two groups to create a single musical instrument through collaborative work.
- Experiment C: The children each made their own instrument.

The objects made by the children (Experiments A and C) and recorded activities were evaluated as the assessment of the children's formative play skills. The evaluation employed a three-point Likert-scale and was rated by six experts in craft and design. Next, the parent-child communication structures were analyzed using Network Analysis derived from video transcription that covered the communication between five children and their parents (pair, inter-, and cross-communication) in each town. The number of utterances in communication was counted using Pajek 2.05 and based on 2D layers in the Y direction.

4.4 Definition and Types of Communication

In this study, communication is defined as conveying messages, ideas, or feelings through verbal communication (i.e., talking, teasing, joking, etc.). The following types of communication were analyzed:

- Child-Child (C-C) communication (bi-directional)
- Parent-Child (P-C/C-P) communication (bi-directional)
- OtherParent-OtherChild (Parent(x)-Child(y)) communication and vice versa (multi-directional/cross-communication)

The following types of communication were excluded from the analysis:

- Communication/instructions given by the facilitator, parent-parent communication, children's self-communication (i.e., singing, mumbling, screaming, yelling, or talking to oneself), and communication with unexpected guests.

5. Communication and Creative Play

5.1 Experiments in Indonesia

5.1.1 Experiment A. Making a Japanese ceramic whistle (individual task)

Our observations in the activity evaluation showed that 87% of the Indonesian parents engaged in strong role-taking behavior by offering direct and close guidance throughout the experiment. These parents took over the task given to their children (See Fig. 1). During the parents' role-taking behavior, the children acted passively; however, afterward, they followed their parents' example to remake their own whistle independently. On average, the children demonstrated quicker progress when they remade the Japanese whistle. They received positive evaluations on their accomplishment and accuracy, with an average score of 6.16 points on proportion and an average completion time of 00:21:10 (See Table 1).



Fig 1: Experiment A. Making a Japanese ceramic whistle (陶笛)

5.1.2 Experiment B. Making a three-tone musical instrument (group task)

The children had a difficult time staying focused in the group task. Sometimes they worked together, and at other times, one child would suddenly begin to work independently. Seventy-three percent of the parents exhibited role-taking behavior during this task and gave many instructions to the children. The role-taking behavior, which is also known as spoiling behavior, was a strong trend. Instead of allowing the children to act independently, the parents acted as partners to teach the children step by step. The parents and children made quick decisions, and most of them seemed to make things that were familiar using the materials they were given (See Fig. 2). For example, they produced musical instruments that were closely associated with the tubular character of the PVC pipe. The data of Experiment B were evaluated in terms of the communication contents. Both the parents and children showed intense communication, including P-C/C-P communication and P(x)-C(y)

communication or vice versa, as indicated by the higher ODC score (≥ 33 and ≤ 56 ; shown by a single asterisk; See Fig. 3). The intense communication consisted of 13.4% utterances showing affection, 81.1% utterances stimulating potentials, and 5.5% utterances off-topic (i.e., jokes, side talk) (See Tables 5b and 6).



Fig 2: Experiment B. Making a musical instrument that produces three tones

5.1.3 Experiment C. Making a body-action musical instrument (individual task)

As mentioned, 87% of the Indonesian parents performed role-taking behavior. These parents guided their children as if they were co-workers completing a task in tandem. The parents gave strict orders to the children to pay attention to their instructions. Both the parents and children tended to make quick decisions without spending too much time discussing the assignment. They appeared curious about the given materials; however, they put aside the main question to focus on completing the assigned task. Their quick decisions could be easily recognized in their work, as they only applied familiar shapes to the aluminum pipe by bending and pulling straight or backward. They did not seem to discuss the objective of the task, which was to produce an instrument that would make sounds as a result of the player's body movement. This corresponded to lower scores in the evaluation of the use of materials, movement, and non-similarity, as compared to the scores of the Japanese children (See Table 2). The parents and children once again showed intense communication, including P-C/C-P communication and P(x)-C(y) communication or vice versa, as indicated by the higher ODC score (≥ 33 and ≤ 56 ; shown by a single asterisk; See, Fig. 3). The intense communication consisted of 9.5% utterances showing affection, 64.7% utterances stimulating potentials, and 25.8% utterances off-topic (See Tables 5b and 6).



Fig 3: Experiment C. Making a musical instrument that produces sound as a result of the player's body action

5.2 Experiments in Japan

5.2.1 Experiment A. Making a Japanese ceramic whistle (individual task)

The Japanese children tended to accomplish the task slower, with an average completion time 00:26:40. No Japanese parents performed role-taking behavior; all the children made the whistle by themselves. Therefore, the children did not have an apprentice-like learning experience during the experiment. All the children completed the entire process independently. They received lower evaluation scores in the accomplishment and accuracy assessment (See Table 1).



Fig 4: Experiment A. Making a Japanese ceramic whistle (陶笛)

5.2.2 Experiment B. Making a three-tone musical instrument (group task)

The children focused well to complete the given task. All the group members spent time exploring and discussing how to produce a three-tone instrument. The children did trial-and-error by creating different kinds of shapes and models to identify clear sounds. It took time for them to obtain the best tones from the created form. Their careful quest to produce a three-tone instrument showed a systematic process. Meanwhile, the parents engaged in very limited role-taking behavior, intervening only if the activity looked difficult or harmful to the children. Finally, each group produced a musical instrument that clearly produced three tones. The parents and children showed intense communication; however, very little cross-communication (OtherParent to OtherChild) occurred. The communication consisted of 0% utterances showing affection, 100% utterances stimulating potentials, and 0% utterances off-topic (See Tables 5b and 6). Parents' communication directed toward their children had a constant ODC score of 0.28. This means each parent consistently communicated bi-directionally with her child and within the group (shown by double asterisks; See Table 4 and Fig. 9a, b).

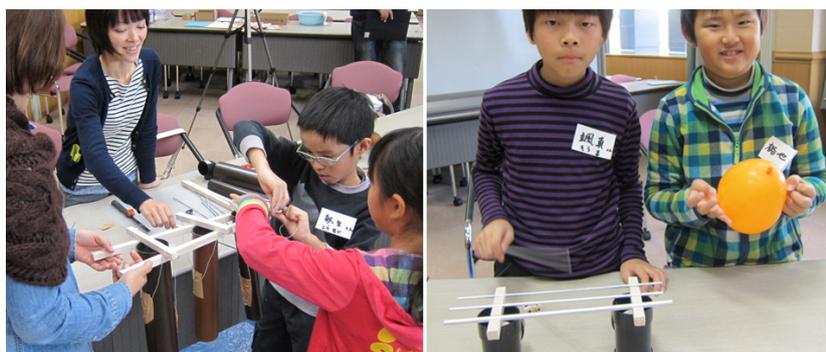


Fig 5: Experiment B. Making a musical instrument that produces three tones

5.2.3 Experiment C. Making a body-action musical instrument (individual task)

The children focused well on completing the assignment. Each child considered how to produce good pitch by exploring various body actions. They did not make quick decisions, and they explored the issue of body action. In addition, the children tested several different models they made. Besides focusing on tones, they paid attention to body movement. The object and activity of Experiment C were given high evaluations on the use of materials, movement, and non-similarity, as shown in Table 2. The parents and children engaged in intense communication that consisted of 0% utterances showing affection, 83.4% utterances stimulating potentials, and 16.7% utterances

off-topic (See Tables 5b and 6). Most of the communication was P-C/C-P communication, and a small amount was P(x)-C(y) communication or vice versa, as indicated by the high ODC score (shown by a single asterisk; See Table 4 and Figure 9a, b).



Fig 6: Experiment C. Making a musical instrument that produces sound as a result of the player's body action

5.3 Object and Activity Evaluation in Experiments A and C

Table 1: Experiment A. Making a Japanese ceramic whistle

Location	Accomplishment and Accuracy				
	Amount	Completion (Average)	Proportion (1-10)	Process (1-10)	Function (0/1)
Giriloyo, ID	2	0:22:19	5.56	7.33	0
Kasongan, ID	2.2	0:17:10	6.59	6.81	0
Mas, ID	1.6	0:26:20	6.33	7.26	0
Nomi, JP	2.8	0:26:40	5.42	7.18	0

Table 2: Experiment C. Making a body-action musical instrument

Location	Idea Exploration			
	Material (n) (1-10)	Movement (1-10)	Sound (n) (1-10)	Non-Similarity (1-10)
Giriloyo, ID	8.7	2	6.4	6
Kasongan, ID	10	4	10	4
Mas, ID	7.5	0	8.2	2
Nomi, JP	9.4	7.5	8	7.5

Table 3: Assessment of Formative play (above); assesment for Activity evaluation through video analysis (below)

Accomplishment and Accuracy				
Amount	Completion time	Proportion	Process	Function



Number of Material usage	Movement		Number of Sounds	Originality	
Number	No bodily movement (0)	Bodily movement (1)	Number	Similarity	1/sim=

Video analysis on the activity evaluation showed that 87% of the Indonesian parents engaged in strong role-taking behavior by offering direct and close guidance throughout the experiment A and C. Indonesian parents took over the task given to their children. During parents' role-taking behavior, children tended to act passively, as if a young learner or apprentice receive a guidance. However, after the parents had showed the whole process, children tried to mimic the whole process by copying the example given by the parent. At the end, children remade their own whistle independently. These parents guided their children as if they were co-workers completing a task in tandem.

The activity evaluation demonstrated that 87% of Indonesian parent participants performed a strong role-taking behavior as if they were co-workers by making it in tandem. The object evaluation demonstrated that Indonesian Children had average positive evaluation on Proportion with 6,16 point, average quicker completion time 00:21:10 and a slight lower evaluation on Process with 7,13 point. The strength that has been performed by Indonesian children in accomplishment and accuracy in related with Proportion and Time Completion (see, Table 1, the red square box). This ability likely has been fostered since childhood stage that shapes Indonesian children in the craft villages become inter-dependence and maintain consistently the rigid practice of craftsmanship as a consistent belief.

A rule was set up, when a parent took over the task given to the children over 1 minute is considered as a role taking behavior. Video analysis on the activity evaluation of Japanese parent and child showed that no Japanese parents performed role-taking behavior; all the children made the whistle by themselves. Therefore, the children did not have an apprentice-like learning experience during the experiment. Each child considered how to produce good pitch by exploring various body actions. They did not make quick decisions, and they explored the issue of body action. In addition, the children tested several different models they have made. The object evaluation demonstrated that Japanese Children had average lower evaluation on Proportion with 5,42 point, and slower completion time 00:26:40. The positive evaluation is the number of whistle made (but less precise) and a slight higher evaluation on Process with 7,18 point (which is not significantly higher compared to Indonesian Children). The strength that has been performed by Indonesian children in the accomplishment and accuracy is related with Proportion and Time Completion (see, Table 1, the red square). This showed that Japanese children tended to perform lower object evaluation related to the craftsmanship skill. The strength that performed by Japanese children is positive evaluation of idea exploration in Experiment C. mainly in number of material, movement and non-smiliarity (see, Table 2, the red dotted square).

The parent-child relationship in Javanese Indonesain ethnic has been studied and stressed in the principles of child nurturance. The attention and affection is quite often noticed as overly intervene to the children personal lives. However, this concept of nurturance have facilitated the establishment of a unique Javanese Indonesian child-parent attachment relationship: a Javanese child's (i) sense of indebtedness, and (ii) affectional dependency on their parents. For Javanese Indonesians, these two factors of attachment and indebtedness are important to form a strong child-parent bond. Ultimately, the key to creating conducive circumstance to a child as a learner is to building a trust for facilitating the children's growth. The feeling of trust and intimacy as a father-son relationship in education is useful for character building (Hakim, 2012).

6. Communication Network Analysis

Communication network analysis focuses on ties, for example, people, groups of people and organizations. These ties combine to form networks, which we will learn to analyze. The individual is not the basic social unit, therefore individual communication is not an aggregate of individuals and their characteristics, but a structure of interpersonal ties. Therefore, to understand of creative thought and beliefs of individuals we observe the creative learning process of children in traditional craft villages that internalized and deeply rooted in action and attitudes. This will portray how interpersonal viewpoint is formed in childhood.

In this study, verbalisation is defined as conveying ideas through verbal communication (i.e., utterances) during engagement in a thinking process of creative playing. The conceptual process was videotaped and the verbalisation was transcribed and sorted by its context. Utterances were transcribed according to the content substance.

The following types of utterances were taken into account:

- Utterances concerning conceptualisation.
- Utterances concerning reflection-in-action or reflection-on-action.

The following types of utterances were excluded:

- Instructions and utterances given by the researchers or other parties.
- Post-design utterances (i.e., general technical process, previously-made artifact).
- Repetitive contents.

Extraction:

- Utterances were extracted when regarded as non-essential information.
- Alternate similar word is applied for clarity and readability.
- Similar repeated utterances are removed.
- Interjections or exclamations are omitted (i.e., hum, oh, wow, well, yeah, etc.).
- Unnecessary phrases, prepositions and conjunctions are omitted (i.e., 'you know', 'well', 'all right,' etc.).

Following is an example of the communication network, P refers as to Parent ; C refer to as Child. Number of communication correlate with the size of the communication, and direction of the communication provide information of interrelation ties (see, Figure 7)..

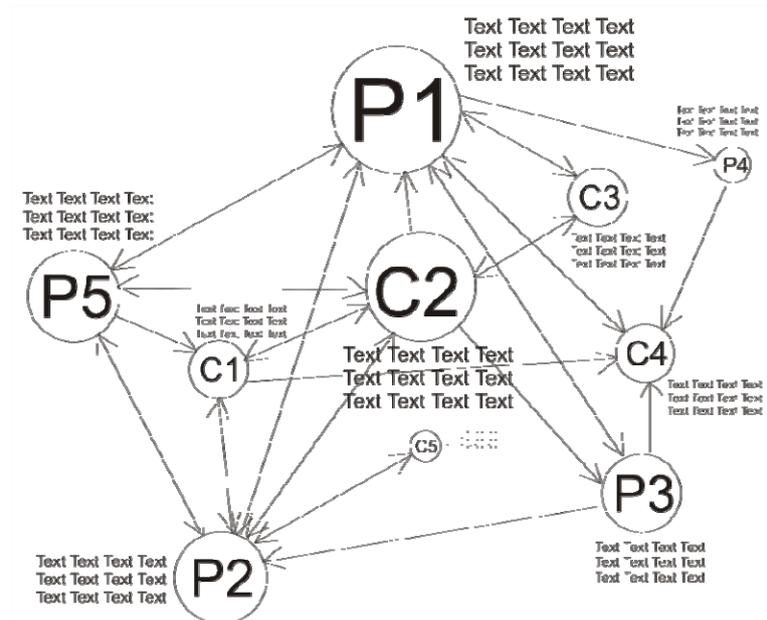


Figure 7: An example of Parent-Child communication network

The following types of communication were divided into 3 types of communication.

- Child-Child (C-C) communication (bi-directional)
- Parent-Child (P-C/C-P) communication (bi-directional)
- OtherParent-OtherChild (Parent(x)-Child(y)) communication and vice versa (multi-directional/cross-communication).

The structure of communication of parent-child network would depict the role and ties among parent and child. This portrays how familiar viewpoint in conservative viewpoint is formed in childhood. Parent-child interaction that contribute in facilitating children's development of formative skills (i.e., craftsmanship) might be explored from the communication network. Thus, the communication network analysis might uncover the rigid practice of craftsmanship as a consistent belief among people in traditional rura area.

Generally known that tacit experience is characterized with a complex mix of long history of various practices of culture, religion, that formed as a system value that followed and preserved consistently. As a rigid practice of applying this system value, it becomes a consistent beliefs among people in village area. This system value is a commitment to particular beliefs, such as belief to create a proper form; belief to maintain perfect balance; belief to create a standard dimension according to their understanding of beauty towards culture and religion and within quasi-parental nature. This internalization becomes unique experiences to every young apprentice. That reside in the unconscious mind and highly personal, internalised and deeply rooted in action and attitudes (see, Figure 8).

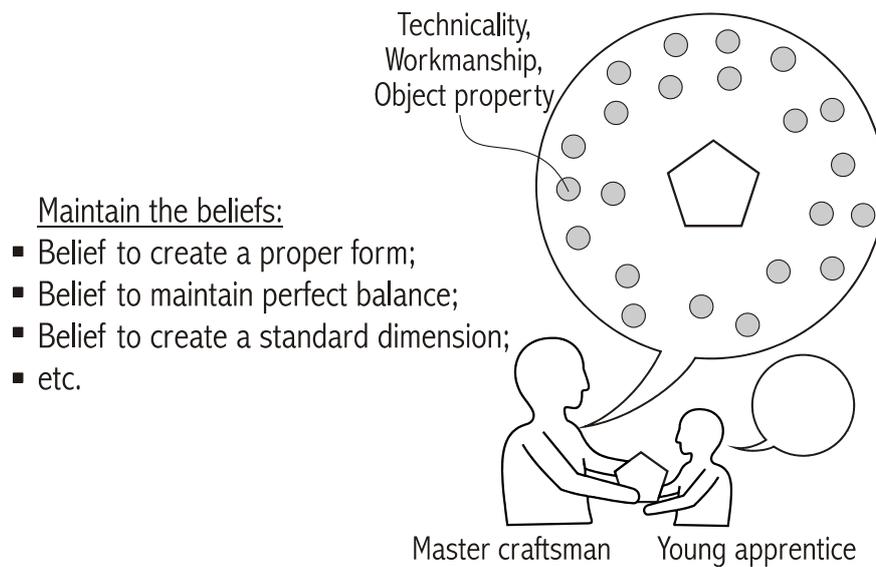


Figure 8: A typical knowledge transfer from master craftsman to young apprentice that performed as quasi-parental relation.

In this research, parent-child verbal communication that occurred during the experiments was the key point to identify interpersonal ties. The events of Experiments B and C were analyzed. We collected and implemented a method to obtain the number utterances representing C-C, P-C/C-P, and P(x)-C(y) (or vice versa) communication. The number of utterances in P-C/C-P communication were transcribed and translated into English and plotted on network graphs using Pajek 2.05, based on 2D layers in the Y direction. The nodes on the left Y-axis represent the children, and the nodes on the right Y-axis, their parents. Each communication network represents the location where the research was conducted. The type of communication structure and its degree of gregariousness were easily identified. For example, Figure 9a (for Experiment B) shows that the Indonesian parent-child communication networks performed 100% strong cross-communication (OtherParent-OtherChildren), which included inter-group communication. In contrast, the Japanese parents engaged in little cross-communication that occurred only within the group, and only one such interaction was recorded between a child and a parent from a different group. Figure 9b shows that 80% of the Indonesian parents and children, respectively, engaged in cross-communication. Meanwhile, only 50% of the Japanese parents and children engaged in cross-communication, and these interactions took place only within the same group.

The content of parent-child cross-communication suggests a pattern of nurturing and parenting that is unique to each country. Cross-communications were grouped by objective utterances that later confirmed as a property. Primarily, parent-child cross-communication related to the context of co-creative play. Most of the utterances stimulated potentials or showed affection. Parent-child cross-communication mainly consisted of utterances stimulating potentials, for example, “*Pull this out to make it tidy*” and “*Apply some glue on this part.*” Some country differences were found in the collected utterances. For example, the Indonesian parent-child utterances included top-down commands, as if the child were a younger co-worker. This experience resembled an apprentice-like experience in which the child was treated as a young craftsman apprentice by their senior (parent). In contrast, such commands were not found in the Japanese parent-child communication. Their utterances stimulating potentials took the form of an exploratory question-answer discussion: for example, “*What about the balloon? What happens if you put it in?*” and “*Ah, perhaps you opened it too much.*”

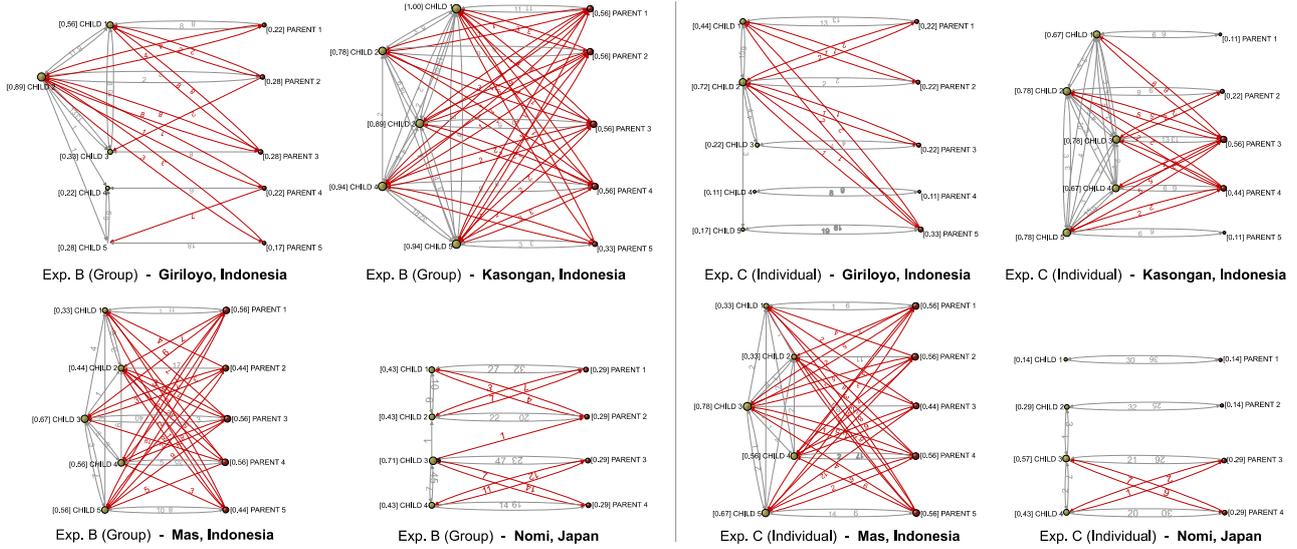


Fig 9a: Parent-child communication networks in Experiment B (Red arc represents cross-communication of OtherParent-OtherChild (P(x)-C(y) or vice versa))

Figure 9b: Parent-child communication networks in Experiment C (Red arc represents cross-communication of OtherParent-OtherChild)

Table 4: ODC scores representing gregariousness behavior

Participant	Giriloyo, Indonesia		Kasongan, Indonesia		Mas, Indonesia		Nomi, Japan	
	Exp. B	Exp. C	Exp. B	Exp. C	Exp. B	Exp. C	Exp. B	Exp. C
C1	0.56	0.44	1.00	0.67	0.33	0.33	0.43	0.14
C2	1.00	0.78	0.67	0.78	0.44	0.33	0.43	0.28
C3	0.22	0.22	0.89	0.78	0.67	0.78	0.71	0.57
C4	0.11	0.11	1.00	0.67	0.56	0.56	0.43	0.43
C5	0.11	0.11	1.00	0.78	0.56	0.67	-	-
P1	0.22	0.33*	0.56*	0.11	0.56*	0.56*	0.28**	0.14**
P2	0.33*	0.22	0.56*	0.22	0.44*	0.56*	0.28**	0.14**
P3	0.33*	0.22	0.56*	0.56*	0.56*	0.44*	0.28**	0.28**
P4	0.33*	0.11	0.56*	0.44*	0.56*	0.56*	0.28**	0.28**
P5	0.22	0.33*	0.33*	0.11	0.44*	0.56*	-	-

Table 5a: Parent-child utterances in cross-communication in Experiments B and C (Indonesia)

Showing Affection	Stimulating Potentials	Off-Topic
“Shall I help you? Please don't cry.”	“All right, that's enough.”	“Well, work until it's dry.”
“Don't get mad. Do not get angry. That's not good.”	“Bond it first, bond it first, there.”	“Boys should be handy.”
“Don't be shy. What makes you shy?”	“That's OK. Be crammed and pressed.”	“You look like 'A' with a bigger body.”
“Shall we... Shall we help him?”	“Cut it right away!”	“Feels like a midget!”
“Let's help, what a pity, watch out for your hand.”	“Follow this, stab! stab!”	“Feels like being shot.”
“Don't fight. Just request one only.”	“Apply some glue on this part.”	“You are reckless!”
“Help out, help each other out, together, [you] need to cooperate.”	“Pull this out to make it tidy.”	“Telephone... whoa... what a strange telephone look.”
“Be slow, so your hand won't get tired.”	“Scissors. Put the scissors on here!”	“That one is for making a call.”
“Please be careful, dear Let me help you.”	“Do it the same way. Do it.”	“Snake! It's a snake... yay!”
Etc.	“Roll it up. Roll that one up. Create a hanging chime.”	“The round part looks like a stickhead.”
	“Flip it, flip it, great.”	Etc.
	Etc.	

Table 5b: Parent-child utterances during cross-communication in Experiments B and C (Japan)

Showing Affection	Stimulating Potentials	Off-Topic
	<i>“What about the balloon? What happens if you put it in?”</i> <i>“Hang it? Like this... Does it work?”</i> <i>“We’d better fix it here.”</i> <i>“Ah, perhaps you opened it too much.”</i> <i>“Is that length OK?”</i> <i>“The different length is...”</i> <i>“This brown one is...”</i> <i>“So, what it should be like...”</i> <i>“Try... in here, yes, it’s soft.”</i> <i>“Oh, it was opened. Cut where? How to cut it? Are you both thinking about the same plan? Right? But I guess you each have different plans. You want to cut from here to here, right?”</i> <i>“The gong sounds more beautiful.”</i> <i>“One of you hold it and tap it.”</i> <i>“It’s only one sound. You need to create three sounds.”</i> Etc.	<i>“Hands come out just like the Ultraman... seems like an alien from Balkan.”</i> <i>“Is that an alien from Balkan?”</i>

Table 6: Cross-communication utterances (OtherParent-OtherChild and vice versa)

	Location	Showing Affection (%)	Stimulating Potentials (%)	Off-Topic (%)
INDONESIA	Giriloyo (Exp. B)	16.7	72.2	11.1
	Giriloyo (Exp. C)	0	73.9	26.1
	Kasongan (Exp. B)	18.4	76.3	5.3
	Kasongan (Exp. C)	0	77.3	22.7
	Mas (Exp. B)	5.1	94.9	0
	Mas (Exp. C)	28.6	42.9	28.6
		11.5	72.9	15.6
JAPAN	Nomi (Exp. B)	0*	100	0*
	Nomi (Exp. C)	0*	83.3	16.7
		0	91.7	8.4

Some of the utterances appeared to show affection, indicating caring and a close attachment performed by disallowance, approval, support giving, and kind nurturance: for example, *“Don’t get mad. Do not get angry,”* *“Don’t be shy. What makes you shy?”*, and *“Let’s help, what a pity, watch out for your hand.”* In addition to the related topics (i.e., showing affection and stimulating potentials), some off-topic utterances were also found (e.g., jokes, side talk). Some of the jokes were related to the work, but others were completely off-topic. This shows a loose situation in which interactions were sometimes out of focus. Utterances showing affection and off-topic utterances mainly were found in the data from Indonesia.

In Experiments B and C, the Indonesian parent-child cross-communication included 11.5% utterances showing affection, 72.9% utterances stimulating potentials, and 15.6% utterances off-topic. Meanwhile, the Japanese parent-child communication included 0% utterances showing affection, 91.7% utterances stimulating potentials, and 8.4% utterances off-topic. Overall, both the Indonesian and Japanese participants emphasized the property of stimulating potentials. The Japanese participants had a higher percentage of utterances stimulating potentials compared to their Indonesian counterparts, and only the Indonesian participants showed affection in their cross-communication.

7. Parent-Child Communication in Co-Creating Value and Creative Play

In the three experiments, both the Japanese and Indonesian participants’ verbal communication consisted of intense communication during the creative play. Almost all the Indonesian parents performed strong role-taking behaviors in two experiments, whereas the Japanese parents engaged in much less role-taking behavior. Role-taking behavior, acts of devotion, and habits of demonstrable affection occurred mainly when the parents were acting as providers, even without their children performing the role of requesters. Role-taking behavior such as *ame* or *kolokan* showed that Indonesian children completely positioned themselves as passive requesters, and their parents became very active providers. This demonstrates that the parents were authoritarian in providing

support in a top-down, apprentice-like situation that involved the child's own beliefs, attitudes, and values. This act constituted the basic component of the children's early experience of training on structuring competency of a basic set of skills, known as apprenticeship. The active role-taking behavior was supported by strong orders and commands that likely stimulated the children's formative skills. During the role-taking behavior, parents confirmed their control as proxies controlling the situation. At the same time, the children were recipients whose dependency was confirmed, as they received close guidance. Such episodes appeared to create a value to establish co-creative play between the parents and their children. By over-indulging in role-taking behavior (i.e., taking over the task), the parents felt content in acting out their role as loving parents. At the same time, their role-taking behavior satisfied the child's desire for dependency. This means that the parents (providers) and children (recipients) co-created value during the creative play activity. Stronger role-taking behavior by the parents led to an apprentice-like experience in which the children acquired a formative skill (craftsmanship), whereas weaker role-taking behavior by the parents stimulated the children's independence. We found that some of the utterances stimulating potentials contained commands and orders rather than discussion. Utterances showing affection were a form of spoiling behavior that was performed even from different proxies to different recipients.

Japanese parents' behavior in co-creative play was characterized by low interdependence in the experiments. Although their role-taking behavior was limited compared to their Indonesian counterparts, the Japanese parents showed intense verbal cross-communication. Similar to the Indonesian parents, 91.7% of their OtherParent-OtherChild utterances stimulated potentials. The contents of these utterances were quite different, reflecting an exploratory way of thinking. The participants' focus on completing the assignment was likely the reason or their lack of any utterances showing affection and small percentage of off-topic utterances. This explains why focus appeared to stimulate exploratory thinking within the co-creative play (See Figs. 10 and 11).

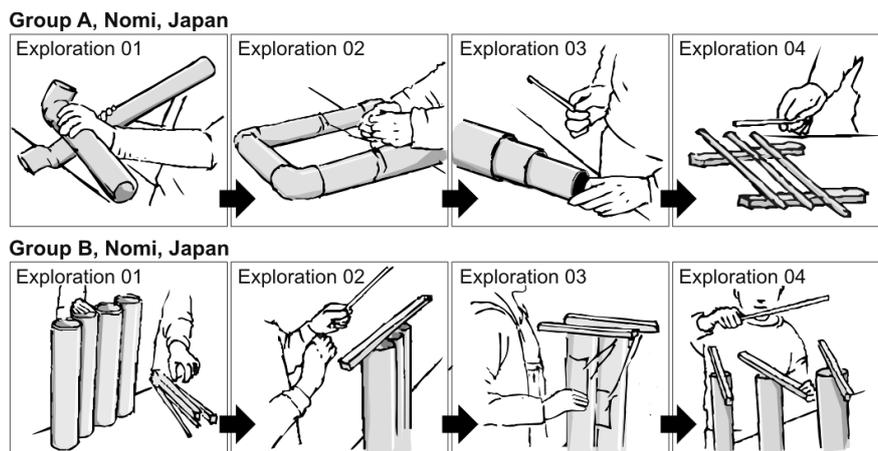


Fig 10: More systematical and exploratory thinking to resolve the given task performed by Japanese children (Experiment B. Making a three-tone musical instrument)

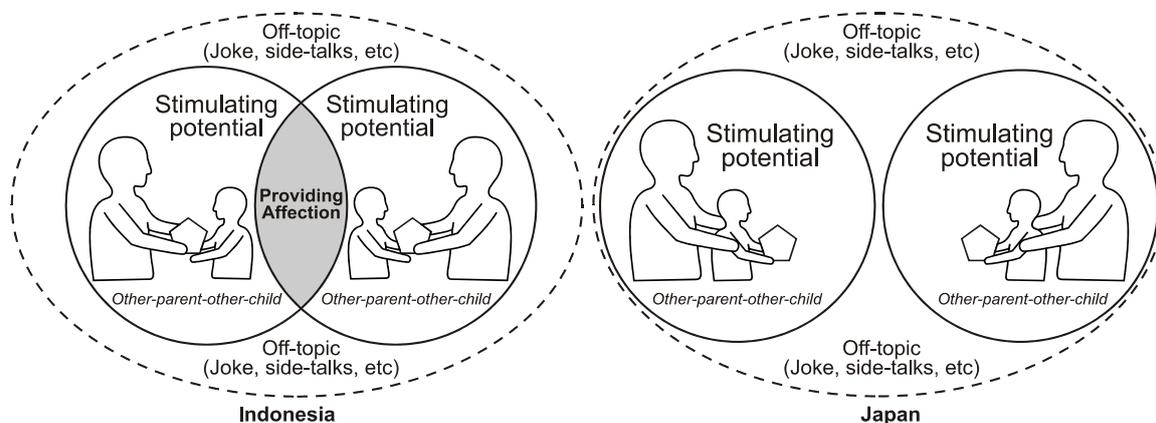


Fig 11: Properties of OtherParent-OtherChild cross-communication in co-creating value and creative play

8. Conclusion

All parents in the study exhibited strong spoiling behavior, indicated by the number of ODC of communication. This spoiling behavior (strong role-taking behavior) was also marked by over-instruction in stimulating potentials. The strong role-taking behavior of Indonesian parents appeared to reinforce intimacy in an apprentice-like, co-creative play experience to help the children gain formative skills. Somehow, strong role-taking behavior during creative play, in either utterances or body involvement, satisfied both the parents and the children. We concluded that the stronger the spoiling behavior (i.e., strong role-taking behavior) is, the greater the parent's contentment is in acting as a loving parent and satisfying the child's expectation for dependency. Over time, role-taking behavior facilitates children's development of formative skills (e.g., craftsmanship) by providing an apprentice-like experience, while independence leads to more exploratory thinking (i.e., creativity). In related to craftsmanship skill, all experts once were novices. As beginners, novices learnt from seniors or masters. Learning process which time-consuming and requiring a close attachment of experienced person and inexperienced person. This is called apprenticeship. The master-apprentice relation is known as a method where a novice is placed in the vicinity of an expert, the novice learn by first-hand and be trained in practice by the expert. The master-apprentice relation is a transfer of knowledge with discipline to gain mastery in workmanship that has been practised in the history of craftsmanship.

9. Acknowledgement

This research was funded by the Hakuho Foundation with the 8th Research Grant for Educational Practice for Children.

10. References

1. Anderson, L., Ostrom, A. L., Corus, C., Fisk, R. P., Gallan, A. S., Giraldo, M., ... & Williams, J. D. (2012). Transformative service research: An agenda for the future. *Journal of Business Research*, 66(8), 1203-1210.
2. Bornstein, R. F. (1993) *The dependent personality*. Guilford Press.
3. Caspi, A., Moffitt, T. E., Morgan, J., Rutter, M., Taylor, A., Arsenuault, L., et al. (2004) Maternal expressed emotion predicts children's antisocial behavior problems: Using monozygotic-twin differences to identify environmental effects on behavioral development. *Developmental Psychology*, 40(2), 149-161.
4. Geertz, H. (1961) *The Javanese family: A study of kinship and socialization* (Vol. 2). New York:: Free Press of Glencoe.
5. Hakim, M. A., Supriyadi., Yuniarti, K.W., (2012) The Contents of Indonesian Child-Parent Attachment: Indigenous and Cultural Analysis., ISSBD Buletin No. 2, 62 Supplement to *International Journal of Behavioral Development*, 36(6), 11-15.
6. Singer, D., & Singer, J. L. (2005) *Imagination and play in the electronic age*. Cambridge, MA: Harvard University Press.
7. Koentjaraningrat. (1987). Anthropology in Indonesia. *Journal of Southeast Asian Studies*, 217-234.
8. Lebra, T. S. (1976). *Japanese patterns of behavior*. Honolulu: University of Hawaii Press.
9. Iizuka, H., Ando, H., Maeda, T., & Marocco, D. (2012) Co-creativity of communication system on behavioral interaction. In *RO-MAN, 2012 IEEE*, pp. 298-303. IEEE.
10. MacKinnon, N. (1994) *Symbolic interactionism as affect control*, Albany: State University of New York Press.
11. Markus, H. R., & Kitayama, S. (1991) Culture and the self: Implications for cognition, emotion, and motivation. *Psychological review*, 98(2), 224.
12. Petgill, S. A., & Deater-Deckard, K. (2004) Task orientation, parental warmth and SES account for a significant portion of the shared environmental variance in general cognitive ability in early childhood: Evidence from a twin study. *Developmental Science*, 7, 25-32.
13. Rothbaum, F., Kakinuma, M., Nagaoka, R., & Azuma, H. (2007) Attachment and Amae Parent-Child Closeness in the United States and Japan. *Journal of Cross-Cultural Psychology*, 38(4), 465-486.
14. Thontowi, H. B., & Kim, U. (2012) The basis of children's trust towards their parents in Java, ngemong: Indigenous psychological analysis. *International Journal of Research Studies in Psychology*, 1(2).
15. Trommsdorff, G. (2006) Parent-child relations over the life-span. A cross-cultural perspective. Parenting beliefs, behaviors, and parent-child relations. *A cross-cultural perspective*, 143-183.
16. Wooldridge, M. B., & Shapka, J. (2012) Playing with technology: Mother-toddler interaction scores lower during play with electronic toys. *Journal of Applied Developmental Psychology*.
17. Yamaguchi, S., & Ariizumi, Y. (2006) Close interpersonal relationships among Japanese. In *Indigenous and Cultural Psychology*, pp. 163-174. Springer US.

18. Yarosh, S., Tang, A., Mokashi, S., & Abowd, G. D. (2013) Almost touching: parent-child remote communication using the sharetable system. In *Proceedings of The 2013 Conference on Computer Supported Cooperative Work*, pp. 181-192. ACM.
 19. Yoshida, T., Mori, S., Taniguchi, S., Junaidy, D. W., (2013) Research on children's formative play culture and creativity. In *Proceedings of the Annual Conference of Japanese Society for the Science of Design 2013*, (60), pp. 38-39. JSSD.
-

Contact information

Address: JAIST Student Housing 1-316, 1-8 Asahidai, Nomi City, Ishikawa 923-1211, Japan

Name: Deny Willy Junaidy

E-mail: denywilly@jaist.ac.jp