Play with Ants, Play as Ants: The Kodomo Project Report on the Play-Shop
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 "If the world is the whole of that which we can understand, the boundary of the narrative act indicates the edge of the world. In this sense, the narrative act is an act of world-making."

(Noe, 2003, p. 66)

Background of the Kodomo Project and the Play-Shop

The Kodomo Project is an investigation of the developmental processes of play. It is a collaboration between the Ishiguro laboratory of Hokkaido University and the Miharu kindergarten. Since 2003, it has been organizing after-school play activities in a kindergarten, named the "Play-Shop".

The Play-Shop is an implementation of the formative experimental method based on the socio-historical tradition of psychology (see Elkonin, 1978). It represents a flexible, process-oriented program for play activity.   Adults in the Play-Shop are not experimenters, but coaches trained to assist children by taking the perspective of the child into consideration. The program of activity is not completely decided in advance. It is flexible and easily changeable, corresponding to children's actual activity such that it may be called an "emergent curriculum" (Hendrick, 1997). The participants engage in physical actions, construct compositions using discarded cardboard, and depict a reflected image of the activities of the day. This expressive aspect is an important factor of the play-shop.

The background of the Kodomo Project has two aspects. One is the recent need for high quality after-school childcare programs. Normally, nursery schools are only required to provide child-care during daytime, and parents have cared for children at home.   But recent changes in Japanese society have created a demand for more extended child-care. Extended kindergarten child-care programs, known as *Azukari Hoiku* (leaving childcare), have been supported by the Japanese government since the year 2000 **(Ministry of Education, Culture, Sports, Science and Technology, 2002)**. However the quality of these programs has been poor.

The other aspect is related to an educational research interest in the socio-historical perspective on play (Vygotsky, 1933/1974; Elkonin, 1960; Leont'ev, 1965). Play in the preschool period is considered as a primary activity of children. Scandinavian researchers have been interested in play as a 'transitory activity' (Bronstrom, 1999; Hakkarainen, 2004), changing from play activity during the preschool period to learning activity during the school years. There is a need to identify the characteristics of play in the preschool period, and to clarify the role of play activities as a link between the preschool and the school years.

Brief sketch of Play-Shop activities from 2003 to the present

Play-Shop activities have been conceptualized as "courses" of three months each. The Play-Shop has now completed four courses.

The first course: A trial period for participants.   (Oct.2003 to Dec.2003)

Note on fig.1: Children crafted trains with corrugated cartons and played with them.

Fig. 1

The first course was a trial period for the Play-Shop. The main goal was to get the laboratory staff acclimatized to the setting. Volunteer undergraduate students from around Sapporo and the kindergarten's staff participated in Play-Shop. Craftwork with discarded cardboard was often the main activity. Interactions in the construction process taught us about children's characteristic play. The children looked forward to Play-Shop activities, and remembered them long after.

The second course: Shopping play (Jan.2004 to Mar.2004)

Note on fig.2: Children with adult staffs managed a bank for shoppers. It is a day that they present their play in a regular school class called " mixed-age nursery class".

Fig. 2

The main goal for staff during the second course was to support children's role-play. Products from the first term were used for this activity. Craftwork for shopping play was preferred for girls. Madoka analyzed children's indexical treatment of inscriptions. One child, who could not write a letter, often depicted things in his work and asked staff to write down letters to represent what he depicted. Children inscribed

things to help them remember, to indicate who was an owner, what a product was, and signboards for the shop. Staff supported children's literacy awareness.

The third course: Ants' world (Apr. 2004 to Jul. 2004)

Note on fig.3: Participants played as ants in the nest. They wore a black vinyl bag to turn into an ant. Children have to grovel inside the nest. They enjoyed the constraints.

Fig. 3

The focus of the third course was the world of ants, which was a model for how children know the world. Ants appear in the Spring. Sapporo is a cold district, and Spring comes slowly. So the ant is an index for Spring warmth. Staff read aloud picture books for children, and the children looked at the pictures. They also watched on original ant video, where staff fed ants on the ground. Children played as ants in the nest. They collaboratively drew ants' activities on a large paper. Many of the children were interested in ants. We focused on tasks related to "knowing" through this course. How do they know an ant? What is "knowing" for them? What is an experience? What did they build up through their play activities? These epistemological inquires were carried forward to the current Fall course.

The current course: Picture-drama making activities (Aug. 2004 to Oct. 2004)

Note on fig.4: Sachiko, who is one of graduate students as staff, narrated the story in corresponding to each child's picture. The story was improvised by their conversation on the pictures.(2004/10/21)

Fig. 4

The main activity of Play-Shop in this Fall period was to make collaboratively a picture-drama of a grasshopper and an ant. The story of the grasshopper and the ant is a famous one in *Aesop's Fables*. A picture-drama is composed of several pictures, and a narrator successively tells the story corresponding to each picture. It is called "Kami

(paper) -Shibai (play or drama)" or "Ga (picture)-Geki (drama)" in Japanese. Participants can transform the story in their own way. The children draw the pictures, talk about them, and make a picture-drama.

This report describes the practical and theoretical context of the Kodomo Project and describes the actual state of the Play-Shop in the year 2004. I would like to explain the reasoning behind this collaborative picture-drama work in this period.

On two modes of thinking

Bruner (1986) placed the narrative mode of thinking on equal terms with the logical mode. He did not consider it as a primitive mode of thinking or a precursor to paradigmatic (i.e. logical-scientific) thought. We often rely on the narrative mode in explaining something to others, as well as in our decision-making. The Japanese philosopher Noe (2002) criticized the commonplace idea that logic in natural science simply reflects the structure of nature itself, which is called logical-positivism. He asked, how can we know about particles that we cannot directly see? He also asked, how can we believe that an ancient king really existed? Of course, part of our belief depends on the natural phenomena. But this is only half of our resource for knowing. The other half is discourse. Our belief does not only depend on the facts themselves but also on the discourse or the network referring to the facts. Scientific facts are mediated by narratives about them. Therefore, Noe insists that knowledge of science requires a "hermeneutik" of science. From this perspective, the logical-scientific mode of thinking also needs the narrative act, and logical positivism is one mode of narrative act.

Regarding the development of thinking in children, the narrative mode of thinking usually is considered a more primitive mode, which precedes a logical-scientific mode. Kayo (1991) opposed this conceptualization as too naïve. Both modes of thinking are simultaneously present long after the preschool period. He provided evidence to show that children who use animistic words in talking about animals and plants also simultaneously refer to them in scientific words. Both modes of thinking easily shift to and from each other in explaining natural phenomena. Both modes have their own history in human development. Either of them may be used or not, but one is not replaced by the other.

The distinction between the scientific mode and the narrative mode is related to two types of concepts proposed by Vygotsky (1934). It is often said that everyday concepts should be replaced by scientific concepts in school. But either of these concepts is supported by its universe of discourse. Bozhovich (1978; 1979) insists that thinking with everyday concepts does not correspond to a developmental stage or period. It is a unique form of thinking which has its own course of development. He paraphrases it as "intuitive thinking". It is not voluntarily evoked and controlled. But it has a very important role in creative thinking and it is not inferior to logical thinking. Intuitive thinking coexists with logical-scientific thinking.

In summary, the narrative mode of thinking is not primitive or inferior to logical-scientific thinking. It has its own developmental history. It coexists with the logical-scientific mode in adulthood. It cultivates the fundamental bases for both the scientific and the literary modes of thinking. The act of making sense of the world or the universe as science or literature is called the "narrative act" by Noe (2003).

The curriculum for transition from preschool to school

Kayo (1991) has questioned the fundamental approach to the national curriculum on "Life Environmental Studies". It is called "Seikatu-Ka", composed of Seikatu (Life) and Ka (subject). "Life Environmental Studies" is taught in the first and second grades of elementary school. It was produced to connect the preschool period to elementary school. It is the subject in a transitional period before social science and natural science, which begin in the third grade.

The curriculum council (1998) of Japan described it as follows:

> *Children's activities and experiences in communities, in the environment and with people in their neighborhood will further be promoted. The teaching content areas for two school years will be shown together so that various activities can be elaborated further, and the current 12 content areas will be reexamined and restricted to 8 content areas. In addition, interaction with infants, elderly people and disabled children will be further promoted.*

The study of the "environment" is a precursor to natural science, and the other activity "with people in their neighborhood" leads into social studies. The activities in Life Environmental Studies are thought of as transitions from narrative thinking in the preschool period to scientific thinking in the school period. Kayo (1991) discusses a concern that literary thinking will be or should be eliminated in the future, and will be or should be replaced by scientific modes of thinking according to the philosophy of the subject. He is critical of the idea of the conjunction of the two modes of thinking described in the previous section.

Narrative act as a fundamental mediating artifact

Noe (2003) distinguishes "Monogatari" (Narrating), which is a gerund form of the verb "Monogataru" (Narrate), from "Monogatari" (a narrative or a tale), which is a noun form. He describes the noun form as being "that which is narrated, a story" and the verb form as being "the act or practice of narrating. He emphasizes that "Monogatari" is not a static or substantive concept but a functional and dynamic one.

From this perspective, history is not facts passed on but anything that can be alive by narrating. A history has to have its own point of view to be narrated. We each produce our world by narrating. The children in the first period in 2004 of Play-Shop produced each ant's world by acting, talking and depicting. They participated in representing an ant's world alone and collaboratively in Play-Shop. Representing anything that was experienced is to appreciate it, to re-enjoy it, and to re-experience the activity. The main methods for the children's representations were acting, talking, and drawing.

Noe (2003) says that the word is not the whole of things but the network of events. The network has "beginning – intermediation – end". It can be paraphrased as the network of "cause and effect". People always work hard to understand a causative

relation for everything, to make connections. The act of narrating is a device to transform events from the incomprehensible into the understandable. In this context, when someone says that they have an experience, he or she can understand something in terms of a causative scheme by narrating it. Narration is a device to organize experience successively, a linguistic process to make a plot with a sequential order, like "beginning – intermediation – end". There is no difference between scientific explanation and literary narrative in this regard. The difference is the way to relate the beginning to the end. Scientific explanation is to link the beginning to the end through a direct line to correspond to the most legitimate scientific model or theory at the time. The literary or narrative explanation is to relate them in terms of cultural-personal and multiple perspectives. A proverb often mediates the relation between the beginning and the end as a cultural artifact.

Collaborative picture-drama making

The first week
Play-Shop resumed this Fall, after a vacation interval. The participants enjoyed renewing their relationships. The children enjoyed playing tag in the park near the kindergarten.

The second week
The new program began from the second week. The main content theme was ants. A staff member read the story of the ant and the grasshopper based on *Aesop's Fables*, without any pictures. This was the first time that there was no picture accompanying the story reading for the children. Most of the children could not concentrate on the story, and instead were chattering with each other (see Fig. 5). After being read the story, we went out to the park to observe ants (see Fig. 6). We prepared to set a trap for ants (see Fig. 7). Some of children, like the girl in Fig. 8, were eager to find ants. The activity was as same as the "ant hunter" in the first course of 2004. The children enjoyed finding ants and laying a trap for them. After the outside activity, they came back to the room and were asked to make a picture about the "ant and grasshopper". They were given paper and started to draw with crayons or felt-tip pens (see Fig. 9). Staff supported them in drawing. When a child was bewildered about what to draw, staff asked him or her about what the ant does and so on. Staff would trigger the children's imagination. The activity of drawing with the staff's support was very familiar to the children. Then they completed their own pictures by themselves (see Fig. 10 & 11).

Fig5: Sachiko read an original story to children with no picture.

Fig6. Children were selecting the place to set a trap for an ant.

Fig7. Children set a trap.

Fig.8: One girl was waiting for an ant in the paper, where there was a sugar in the center.

Fig.9: Children were drawing a picture about an ant and a grasshopper.

Fig.10: A picture example which was drawn by a child.

Fig.11: A picture example which was drawn by the other child.

The third week

One of the staff read the ant-and-grasshopper story to the children again (see Fig.12). The story now was accompanied with pictures drawn by the children. Most of the children intently concentrated on listening to the story and looking at the pictures. The narrated story was as same as the previous week but it was divided into twelve parts corresponding to the pictures drawn by the children in the previous week. The staff arbitrarily decided the correspondence between the parts of story and the pictures, although none of the children commented on the arbitrariness. Pictures like Fig.11, which could be incomprehensible, were still included in the sequence of the picture drama. All of the staff was surprised at the children's concentration in comparison with the previous week.

Fig.12: Sachiko performed a picture drama, which were composing of children's pictures.

After the drama performance, all of the participants went to the park to collect food for ants. The children were asked to act like an ant in searching for food. Children walked around the park and picked up fallen leaves, nuts, an acorn, and so on (See Fig. 13).

Fig13: Children were searching foods for an ant.

We returned to the classroom and set up a display of items in the front area of the room. I set out four photos of a grasshopper because only one child drew it in the second week. Then children were asked to draw the world of ants and the grasshopper. Some children often went to see the pictures of the grasshopper (see Fig. 14).

Fig.14: Display of collected foods for an ant and photos of grasshopper in the room

At the end of the drawing session, we took every picture and arranged them side by side in order. Then, Sachiko declared the start of a new picture drama. All of the participants begin to make a story corresponding to the pictures.

Excerpt 1: (29th of Play-Shop)

First, Sachiko introduced all of the pictures to the participants. She asked, "Who wrote this?","What is it?", and so on. After the introduction, she again showed the pictures one by one.

*Sachiko: (Showing the first picture to participants) All of you see this. How do you feel about it? What does an ant do? It looks like it is walking on the warm ground. **An ant was walking on the ground. (A bold sentence indicates a part of the story)***
Sachiko :(She turned to the second picture and said) Oh, the ant met a green insect. What is this? What insect is it, all of you?
F&M (children): Grasshopper!
N (child): An ant. A strange ant!
*Sachiko: Is it a strange ant? Ok, **the ant met a green strange ant**. Then.*
* (Turning to the third picture) Oh, what is this? The ant met a green strange one, and then what is it doing?*
D (child): (He read letters which were written in the paper and uttered one by one.) Azusa (a staff's name) Ra Go Ta Ru Tu Ya Kuwagata (a stag beetle).
(All participants laughed.)
*Sachiko: A stag? **A stag beetle came, too**.*
D (child): A stag beetle is not good!
Sachiko: Is it a problem?
* D (child): Yes. It was drawn with Masahiro's advice.*
* Sachiko: Ok, **an ant and a green ant were talking to each other**.*
* D (Child): No! It is not an ant but a grasshopper.*

*Sachiko: I see. Then, **an ant and a grasshopper were talking to each other.** What are they talking about?*
(M (child) whispered something to Madoka (staff))
<u>*Madoka:*</u> *They said, Shall we play? A grasshopper said, Shall we play?*
<u>*Sachiko:*</u> ***The grasshopper said, Shall we play?***
<u>*Madoka:*</u> *(Addressing M (child)) How about the ant?*
<u>*D (child):*</u> *It said, No!"*
<u>*Sachiko:*</u> *Ok. **A grasshopper said to the ant, Let's play, but the ant said, No.** (Turning to the next page) **And a grasshopper said, I'm sorry and walked away.** Then it arrived here. What was it doing?*
D (child): Who drew this picture?
<u>*F (child):*</u> *The ant is carrying.*
Sachiko: The ant is carrying something. What is it carrying?
<u>*D (child):*</u> *Takoyaki (Japanese food including an octopus)*
<u>*Sachiko:*</u> ***The ant is carrying Takoyaki.***
<u>*Y (child):*</u> *Does it eat Takoyaki?*
<u>*Sachiko:*</u> *(After showing the next picture,) Then, oh, a grasshopper appeared again. What is the grasshopper doing?*
<u>*M (child):*</u> *It said, Shall we play?*

Sachiko asked the children for a story about the pictures, one at a time, and the children replied. After negotiation about the story for a picture, Sachiko forged an agreement on the "theme" (Volosinov, 1929). The "theme" is a term that contrasts to the "meaning", which correspond to the relation between "sense" and "word meaning" in Vygosky (1934). The theme depends on a specific situation. A picture is a resource for each child to produce a theme. Every child developed a theme for each picture. Then some of the children told their themes to the group, which stimulated comments on the themes. At the end, Sachiko proposed one theme to all the children. After the proposal, it became the common meaning to consider when developing the theme for the next picture. It is important to be aware that each theme for a picture has two sources. One originated from the picture being shown. The other source is the theme of the previous picture. To generate themes is to perform a narrative act in two ways. The characters in the picture are just static figures but they can move and speak through participants' acting to narrate. They become alive by children's narrating. The next picture has its own meaning and it gets additional meaning from the themes which were previously shared in the group. The narrative born in the picture builds upon the previous theme. In this practice, the children experienced a dynamic feature of the relation of "theme – meaning". Collaborative picture-drama making is a nice device to make the process visible.

Zone of proximal development to fostering the narrative act

The structure of the Play-Shop in the third week is the following:
#Greeting
#Performing Picture Drama with pictures which were drawn by the children participating in the second week
#Collecting food for ants in the park
#Drawing a pictures about ants and grasshoppers
#Performing Picture Drama with pictures which were drawn today.
#Closure

The staff supports the children in many ways. I would like to focus on the performing part of the Picture Drama and the drawing part. There is a common characteristic between the drawing part and the performing part. Both are organized for creating the ants' world and for representing it. Drawing is very familiar to the participants in the Play-Shop. When a child is having difficulty, staff would ask the child questions about what an ant's form is, where it will go, what it is, and so on. Staff usually does not tell a child what to draw or how to draw. To draw or not to draw for a child is just a problem. The central role of the staff is to foster the child to express his or her idea on paper. The staff does his or her best to trigger the child's ideas. This process starts from any inscriptions externalized on paper by the children themselves. These inscriptions drawn by the child trigger the staff's questions, like "What is it?" and "Where does it go?" In other words, the inscription mediates between the child and the staff. Children can develop their creative thinking by themselves with the staff's help.

One picture can represent one event, but not one thing. It is not a static snapshot. Therefore, children often take one picture as an event and tell a story about it (Oers, 1994). The inquiries of staff can be divided into two types. One is a question that asks what it is; it inquires about the picture itself. The other type of question asks about the world mediated through the picture drawn by a children, like "What is it doing?", "Where is he going?", or "How does the ant eat it?". This second type of triggering question is very important because it fosters children's narrative acting, rather than only labeling the picture itself.

Last, I discuss the collaborative Picture-Drama making process and the role of staff in carrying it out. A picture drama is composed of many pictures, and it requires coherence among them. The narrator should say the connecting words like "so", "then", "and", "at the time", "and now", and so on. These words connect one picture to the next one. From one picture to another, the same world may continue to be used, or one world may be taken over to another world. This is not using a picture as a sign-vehicle but as a theme (Volosinov, 1929) or sense (Vygotsky, 1934) that the picture carries. Each picture may have its own world. This means that a picture may have a narrative. But a series of pictures can give a time flow to the narrating world so that it requires cohesive ties among the events represented in each picture. A narrator makes an arbitrary connection among pictures. The arbitrariness is not a problem. It is only an opportunity or "a stone" (Vygotsky, 1934) to the children's responses. It stimulates children's imagination. The words for the presentation are a starting point or resource to be brought forward by the children. The children may become aware of connecting between the present world depicted in the present picture and the previous world in the previous picture through this narrative practice.

As the ant said to a grasshopper in the last scene of the Aesop story, "Now, you had better dance!" Vygotsky (1925) points that there are double meanings for this utterance in this context. One is "to drop dead!" The other is "to frolic!" These multiple senses for the text or the world itself can be brought about through tearing pictures one by one. The previous worlds in the previous texts constrain the present world so that the event represented in the present picture can be treated as an historical event. How do the children construct a macrostructure of their world through this practice? This is a task to be examined in the future.

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