

Niina Rutanen, University of Helsinki

niina.rutanen@helsinki.fi

The emergence of novelty and constraints in two-year-old children's interactions

In this paper, I will present a case of a qualitative microanalysis of interaction among two-year-old children. The leading question of the work is: how do children co-construct meanings in relation to the adults' (researcher and teacher) attempts to structure the cultural-social setting of a study about children? This analysis attempts to contribute to the question of children's "voices" and perspectives. Here, two children are studied, their actions being nonverbal most of the time.

Approaches to conceptualize and investigate child-child interaction

The prevailing literature in psychology and early childhood education include a variety of approaches to conceptualize and investigate interaction among young children. On the basis of a review on the field, I interpreted the literature to include three general categories of approaches/interests. The categories are partly overlapping; nevertheless, they serve the purpose of a general introduction to the field.

The mainstream of the child-child interaction studies, affiliated with developmental psychology, focus on the individual. In these individual-focused approaches (see Figure 1, 1) interaction is usually conceptualized as an exchange among the subjects. The questions focus on the quantity and the qualities of these exchanges with others (e.g. Vandell & Mueller 1995). The interest is to assess and evaluate the individual's adaptation to the constraints of the social world or to investigate the role of the social others to the development of the individual.

Particularly in educationally oriented literature, researchers have reported on experiments where the interest is to evaluate the outcome of the exchange among children (see Figure 1, 2). The focus is on the results of negotiations, investigated within the context of specific problem solving tasks (e.g. Doise, Mugny & Perret-Clermont 1975). In these works, interaction opens a space for socio-cognitive conflict; the main question has been if and how, while working together, children can create some levels of understanding that they would not be able to create when working alone. Many works with reference to Vygotsky, emphasize the role of more competent peers in the negotiations in goal-directed situations. These studies are usually conducted in preschool or school environments with older than 2- to 3-year-olds who are at the focus of my work.

In psychology and education some researchers apply holistic views on human development and communication, as various concepts such as "network", "field", and "systems" suggest. A lot of the developments in line with these ideas have occurred within the works on mother-child communication (e.g. Fogel, Koeyer, Bellagamba, & Bell 2002). These dynamic, dialogical approaches (see Figure 1, 3) have also been discussed in contemporary peer interaction studies where the focus has been on the process of emergence of, for example, signs, meanings and emotions (Carvalho, Imperio-Hamburger & Pedrosa 1998) and on the negotiation of roles/counter-roles among children (Oliveira & Rossetti-Ferreira 1996).

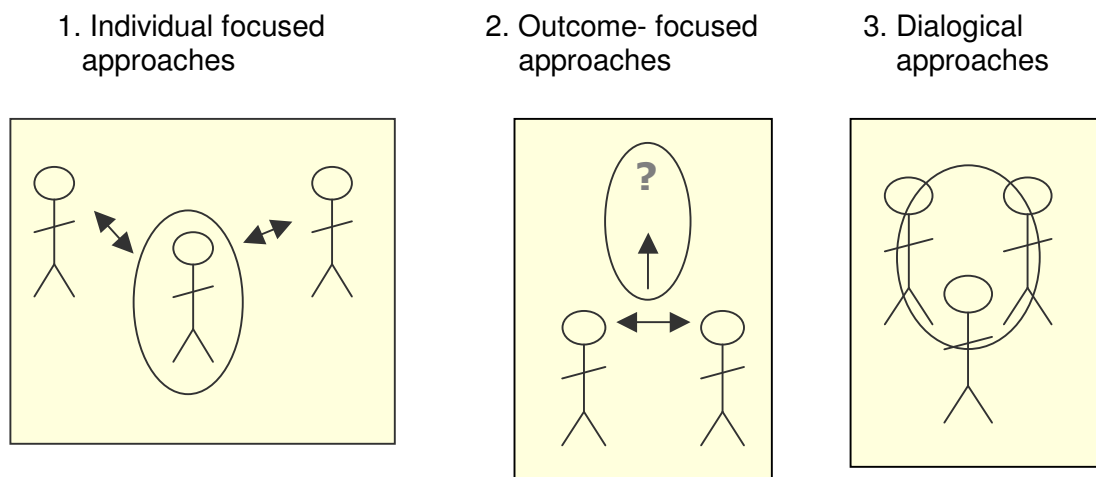


Figure 1. 1) Individual focused approaches, 2) Outcome-focused approaches, and 3) Dialogical approaches.

This work affiliates most with the last group of studies, that is the approaches that emphasise the dialogical nature of human constitution (Amorim 2002; Fogel 1993; Pedrosa 1989; Rossetti-Ferreira, Amorim, Soares da Silva, & Carvalho 2004). Following the works of two Brazilian researchers, Isabel Pedrosa and Ana Almeida Carvalho (1989; 1997; 1998), a field metaphor is applied on the theoretical background. Instead of discussing children's interaction as a relation of mutual exchange, the focus is placed on interpreting the inter-individual psychological space among the subjects.

Methodological procedure

One Finnish daycare centre was selected for the study. The centre participated in a national "Young Children's Mathematics and Natural Sciences" (Luma)-project, coordinated by the National Research Centre for Welfare and Health in Finland. Following the Luma-project aims, the teachers and the day nurses took notes of their observations on children's play and discussions during their everyday activities with the children. The adults also set forth a collaborative learning project with children on the theme "water" and divided the whole group of children into smaller groups of four children. During one academic year, I visited this daycare centre approximately twice a month for video recordings. In the recording situations, the teacher and I set some objects on the table or on the floor and the teacher invited one small group of children "to do things" or/and "to play" with them. Often, we provided water in basins related to the teacher's interest to continue elaborating the water-project. All together 33 recording sessions occurred during this year; the sessions lasted from 5 to 40 minutes. The general aim was to investigate what happens in the situations: how do children interact among themselves and with the objects provided.

After each recording session, the teacher and I watched the tape and discussed about the situations. During the first semester, the mothers of the children watched the tapes also. In these discussions, various expectations, intentions and interpretations were introduced and negotiated in relation to what was supposed to occur and what actually occurred, and what was possible to observe and study. These interpretations and discussions canalized the planning of the following recording settings. Selections were continuously made in relation to what rooms to use for the recordings, what objects to provide, how to initiate the situations, and where to focus the camera.

From this corpus of material I selected the sessions with one dyad of two-year-olds for the microanalysis (Oliveira & Rossetti-Ferreira 1996; Valsiner 1997). The analysis deals with changes at two levels: first, some specific moments of change are interpreted within the context of the flow of actions within a recording session; and second, these changes are discussed in relation to the other recording sessions with the same group during that year.

The flow of actions among children

In this paper, I will focus on the analysis of the first recording session with Martti (2 years 7 months) and Heidi (2 years 9 months). The session took place in the room where children usually take their daily nap. One couch and a small bed were in the room as usual. The teacher and I had set a small table and two little chairs in the centre of the room; the table and the chairs were the size for young children (see Figure 2). A transparent basin filled with water was on top of the table. A video camera, on a tripod, was in the corner of the room. I (the researcher) was already in the room when the children and the teacher entered. After setting the camera to record, I sat down to the floor close to the tripod.

The description of the session will be summarized in the following:

Children enter the room together with the teacher. The teacher moves the chairs a bit further from the table and invites the children to have a seat and play. Children sit silently and look around. They also look at the basin filled with water on top of the table. The teacher and I stay silent (apart from short comments by the teacher), observing the situation. After eight minutes of looking around, the children begin to make faces and wave their hands towards one another. After five minutes the movement of their hands is elaborated into a play of grasping hands towards the floor (as if taking “something” from the floor), offering to the other, and chewing (as if eating something). Children offer to each other, grab, and refuse to grab. They laugh and make sounds, but use only few words until the end. The exception is the verbalization “kokaa” they begin to repeat and transform to different sounds after 17 minutes. The teacher puts plates and cups on the table after 30 minutes, but the children continue their play without them. The duration of the whole session is 36 minutes.

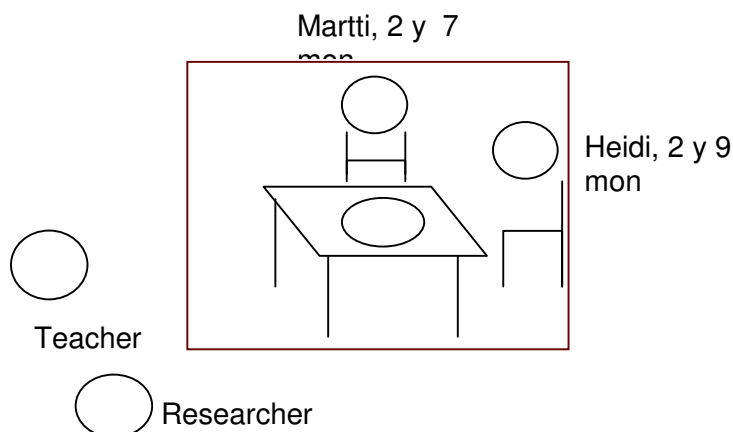


Figure 2. An illustration of the setting of the first recording session. The teacher and the researcher are not visible on the video screen.

The main perceptually salient feature, if taken together the whole session, is the elaboration of a give-and-take game by the children. Children had no toy or another material object, but they co-constructed the play with their gazes, head, hand and mouth movements, and sounds. From random movements of looking around emerged the first head and face movements that led to a consensual frame of mutual attention among them. After that, new elements (as hand movements towards the mouth) were introduced. In is only after 17 minutes Martti whispers a first sound related to the play; under the table emerges something to be given by Martti and taken/eaten by Heidi (see the following description).

Description of the sequence (17'00'-17'40'):

Heidi touches Martti, who looks under the table. Heidi looks at there too; Martti gets up and whispers: “Kokkkk ”; he looks down again. Heidi looks at him, then also under the table. Martti looks at her (when she is looking under), then under the table. Heidi looks at Martti, then under the table. Then, they both look at each other. Martti stretches his closed hand towards Heidi and says: “Kokakoka”. Heidi has looked under the table and now looks at him and his hand. Martti looks under the table, then gets up and says: “Kokakoka”; he stretches again his hand towards her as if giving something. Heidi reaches towards Martti and grasps his hand. Martti moves his other hand closer to him; the fist is closed as if holding something. Heidi grasps Martti’s hand and moves her hand close to her mouth. Martti lifts his hands and laughs. Heidi looks at him and touches his hand.

From the flow of actions described here, it is impossible to clearly note who defines the content of the situation. Is it Heidi who approaches Martti by touching? Or is it Martti, because he offers? Does the jointly engaged elaboration continue because Martti gives or because Heidi takes?

Children’s actions were co-regulated; they emerged in relation to the others’ (Fogel 1993; Carvalho et al. 1998; Pedrosa et al.1997). Children seem to construct the joint action by framing with their actions the actions of the other (see also Pedrosa 1989, 160-162). This adjustment of the actions to the others’ occurred by repeating the actions partially or entirely, by adding something, or by substituting some of the actions of the other. The children used mainly nonverbal means.

Throughout the session, Martti re-introduced various times the gesture of offering and/or taking, as if to use it as a strategy to return to the previously elaborated movements. In addition, the verbalizations of Martti begun to stand for a shared action and a particular configuration in this interactional field; in other words, his verbalizations acquired an “actualization effect”. By verbalizing “koka kokaa” there was an increased probability of the action being maintained by both. During the session, the words and the whole configuration of the flow of actions (taking from the floor, offering, opening the mouth, putting to mouth, chewing, loud laughing) was transformed from suspended, random information in the interactional field into shared meanings (Pedrosa et al. 1997, 171). “Kokaa kokoo“ became the linguistic expression that represented the actions at another level of meanings.

Children’s resistance to the canalizing constraints

How does the interpretation of the flow of actions change, if the social-cultural-ideological context and the role of the adults are included in the discussion?

In the first recording session, the teacher and I had arranged the physical setting. The small chairs were so close to the table that the children could not get up without pushing the chairs further from the table, nevertheless, children sat close enough to be able to reach to each others' faces. They remained seated until the end of the recording, as the teacher had suggested with the gestures and with the verbal invitation at the beginning of the session: "Come to sit", she said.

Children's random moving around (stretching and bending towards the floor and towards the other), led to a co-construction of an innovative, joint activity within the constraints (limits/possibilities) (Valsiner 1997) of the physical space that the chairs and the table provided. The symbolic content of the actions, "eating" and offering "food", emerged within this setting, which afforded this activity also by the symbolic content, in other words, the setting included table and chairs as in meal time.

During the session, the teacher and I attempted to remain silent and whispered since we did not want the microphones to record our talk. The silence was kept also by the children for most part of the session. Interestingly, the silence emerged as a significant element of the recordings: it was re-established again, by all, at the beginning of the following sessions.

At the beginning of the recording, the teacher introduced a direction for the following events: "Now you can play", she said. When the children remained seated and silently looked around without touching the water, the teacher reacted to the situation with a new suggestion. She whispered: "What is it?" The children responded: "Water". Still, from the teacher's viewpoint, the children did not respond sufficiently with their movements or verbalizations. As a result, the teacher went to mix the water in the basin. Children kept their hands still. They looked at the teacher, at me, and at the basin.

The children seemed to attempt to make sense of what was going on in the situation, and what were the adults' intentions and expectations. They resisted silently the adults' initiations and didn't engage in manipulating the material objects the adults had provided for them to "play with". In other words, they protested with their body to the teacher's attempts to restructure the situation and have the basin of water as the main figure of the situation.

In this situation, the children's actions of not playing with water canalized the adults' observations and attempts to restructure the setting towards children's elaboration of play with water. Adults' actions indicate what was supposed to occur: it was expected that children would come, sit down and touch the water in the basin. Children were understood to be creative, loud and active – if they were given the space for it. "Play" was expected to include 1) manipulation of the objects provided, 2) verbal language use, and 3) children's attention to the other rather than to the adults. In the situation, we were faced with a dilemma: children were provided the right to engage in free play, but it was assumed that their free play would necessarily emerge together with their joint manipulation of the objects provided. Following this, we engaged in re-negotiation of the boundaries of play in the sense that "free" did not mean that children were free not to touch the water.

In conclusion, the adults set the primary agenda (Kindermann & Valsiner 1989) for defining the structure of the events by arranging the setting of the recordings following the goals of the research

and the “water” projects. As the researcher in “Young Children’s Mathematics and Natural Sciences” project, I was interested in observing what the children would do together and with the objects provided. The teacher was interested in what they would discover about water in their play. These adult intentions and expectations were materialized in the arrangements of the recording setting, i.e. the possibilities/limits provided to children’s actions. These canalized the possibilities for children’s actions in certain directions, even if the actions were not determined by the setting (Valsiner 1997). During the session only some out of various possibilities for regulations among children, among adults, material setting, and other elements, became actualized.

Children’s actions of resistance and co-construction of actions and meanings with eye and hand movements and verbalizations produced a counter-culture in relation to the adults’ structuring attempts (see Rönnerberg 2005). Children engaged actively in situation definition by introducing novelty outside the adult sphere of expectancy. The initial conception of a child was leading the teacher’s and the researcher’s attempts to structure the situation, and, following the canalization and the affordances provided, the children participated actively in reconstructing this conception through their actions within the research setting.

Complexity of the network of regulations and meanings

Instead of just mutual elaboration among the children, the recording session(s) included regulations in various levels among the participants. In Figure 3, I attempt to open up this complexity in sketching some of the frames (Fogel 1993; Fogel et al. 2002) that made up the background of the here-and-now situations. During the sessions, the participants engaged in dialogical negotiations where these frames were being actualized and re-negotiated leading to a new organization of meanings and positions among the participants.

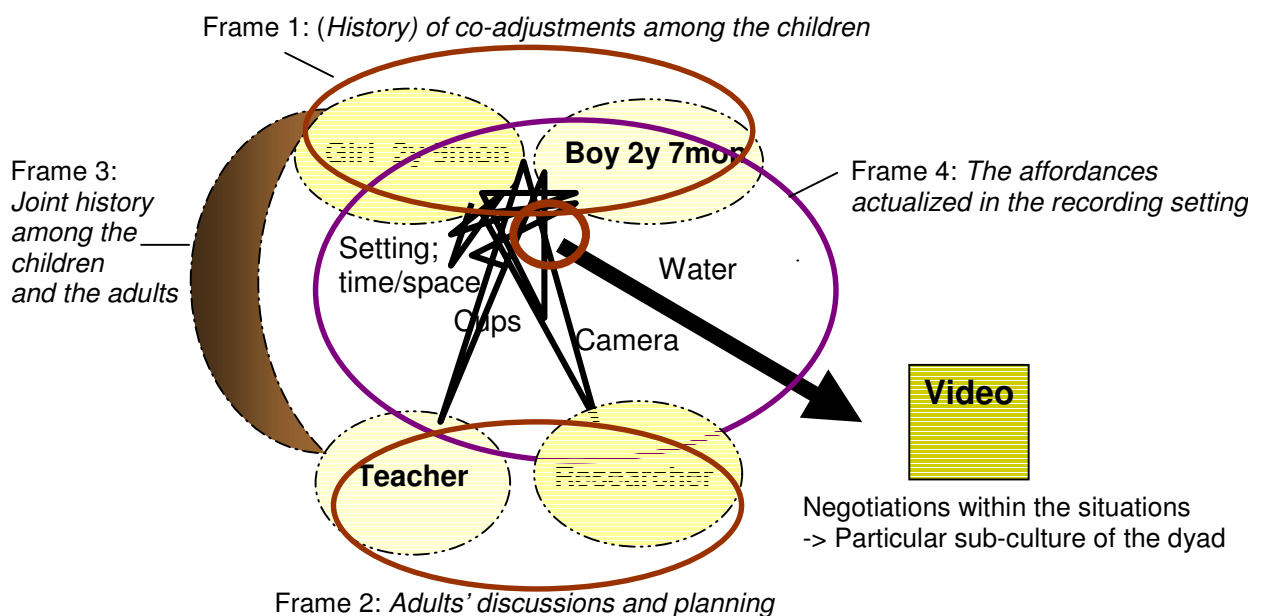


Figure 3. Various interpretative frames present in the situation.

The children who had been invited to the situation both had their particular personal history and subjective, embodied position (“viewpoint”) within the situation. This background also included a history of co-adjustments among them, since they were already familiar to each other (see Figure 3; “Frame 1”). It is safe to assume that they had already engaged in negotiations of a variety of positions and meanings among them. This background provided the basis for further negotiations within these particular situations.

As well as the children, the adults too had particular expectations and intentions. We had engaged in negotiations about the project with various indirect and direct actors, as well as with a research group and with the children’s mothers (see Figure 3; Frame 2). We, the children and the adults in the situations, had also a joint history together. It had started around the first recordings and was strongly linked with our engagement to the water-project that occurred parallel with the recordings during that year. This joint history was continuously reconstructed during the project, often outside the recording situations (see Figure 3; Frame 3).

In addition to the histories of negotiations mentioned above, the recording sessions included particular physical arrangements with particular objects and instructions. These began to form a chain of somewhat similarly structured situations introduced to the participants. Within the variability, some of the constant elements were the camera, the lack of other children, and the teacher’s and my attempt to remain silent observers. These elements afforded children’s actions and novelty construction in the repeated situations (see Figure 3; Frame 4).

The flow of here-and-now actions and construction of meanings and novelty, investigated in the microanalysis, emerged on the basis of this complexity and included elements from all these frame negotiations.

To conclude

In this work, I interpret children’s voices not as verbalizations but as embodied constructions of their agency in relation to the adults structuring attempts. Children’s perspectives gain a form in relation to the adult expectancies and conceptions of children, childhood and play that are embodied in the material arrangements of the recording settings and, in a more general level, in the structuring of the research project.

References

Amorim, K. S. (2002). *Concretização de discursos e práticas histórico-sociais, em situações de frequência de bebês a creche*. Tese apresentada à Faculdade de Medicina de Ribeirão Preto/USP para concorrer ao título de Doutor. Ribeirão Preto.

Carvalho, A.M. A., Imperio-Hamburger, A. & Pedrosa, M. I. (1998). Interaction, regulation and correlation in the context of human development: Conceptual discussion and empirical examples. In M. C. D. P. Lyra & J. Valsiner (eds.), *Construction of psychological processes in interpersonal communication. Child development within culturally structured environments. Vol 4*. p. 155-181. Stamford: Ablex publishing.

Doise, W., Mugny, G. & Perret-Clermont, A-N. (1975). Social interaction and the development of cognitive operations. *European Journal of Social Psychology*, 5, 367-383.

Fogel, A. (1993). *Development through relationships: Origins of communication, self, and culture*. Chicago, IL: The University of Chicago Press.

Fogel, A., Koeper, I., Bellagamba, F., & Bell, H. (2002). The dialogical self in the first two years of life. Embarking on a journey of discovery. *Theory & Psychology* 12; 2, 191-205.

Kindermann, T. A., & Valsiner, J. (1989). Research strategies in culture-inclusive developmental psychology. In J. Valsiner (ed.), *Child Development in Cultural Context*, p. 13-50. Göttingen/Toronto: Hogrefe.

Oliveira, Z. M. R. & Rossetti-Ferreira, M. C. (1996). Understanding the co-constructive nature of human development: Role coordination in early peer interaction. In J. Valsiner, & H.-G. Voss (eds.), *The structure of learning processes*, p. 177-204. New Jersey: Ablex publishing.

Pedrosa, M.I. (1989). *Interação criança-criança: um lugar de construção do sujeito*. Tese de doutorado. Instituto de psicologia. Universidade de São Paulo.

Pedrosa, M. I., Carvalho, A.M. A., & Imperio-Hamburger, A. (1997). From disordered to ordered movement: Attractor configuration and development. In A. Fogel, M. Lyra & J. Valsiner (eds.), *Dynamics and indeterminism in developmental and social processes*, p. 135-151. Mahwah: Erlbaum.

Rossetti-Ferreira, M. C., Amorim, K.S., Soares da Silva, A. P., & Carvalho, A. M. A. (eds.) (2004). *Rede de Significações e o estudo do desenvolvimento humano*. Porto Alegre: ArtMed.

Rönnerberg, M. (2005). *Children's Culture as Counterculture —How the third sex opposes the first and second sex through children's culture*. Keynote lecture at Childhood – Summer School in Cultural Studies. 2 June 2005, University of Jyväskylä, Jyväskylä, Finland. Unpublished paper.

Valsiner, J. (1997). *Culture and the development of children's action. A theory of human development*. 2. edition. New York: John Wiley.

Vandell, D. L., & Mueller, E.C. (1995). Peer play and friendship during the first two years. In H. C. Foot & A. J. Chapman (eds.), *Friendship and social relations in children*, p. 181-208. New Brunswick, NJ: Transaction.