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Social Interaction

Video-Based Studies of Human Sociality

On Unplanned Educational Activities in the Preschool: Dealing with Competence in the Course of Packing up a Game

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Abstract

This article concerns a learning environment in a preschool which includes a preschool teacher and two bilingual children. The article details how an activity of counting is occasioned in the course of packing up a game and, without this being planned, increasingly turns into an activity of calculation. The teacher initiates an educational project by inviting the children to demonstrate their competences in terms of language and mathematics rather than (merely) manipulating, arranging and counting objects. However, while this has the potential of turning into a learning sequence, the activity evolves into a mere knowledge demonstration by only one of the children, leading to an exclusion of the other child. The single case analysis thus exemplifies how, by the use of language as a resource, an interaction in a preschool occasions an activity that may ultimately be seen as aiming at a transition between preschool and primary school. Simultaneously, however, it becomes clear that, possibly because this is an unplanned activity, the outcome of this activity may be unequally beneficial for the children participating in it.

Keywords: competence, multimodality, unplanned teaching activity, Conversation Analysis, second language pedagogy

1. Introduction

In early work in Conversation Analysis (CA), the differences between mundane conversation and institutional interaction are primarily addressed through assertions of how turn-taking systems differ. This work describes a more basic turn-taking system in conversation while suggesting that formal institutional types of talk-in-interaction may make use of pre-allocation of turns to various degrees (e.g., Schegloff, Jefferson & Sacks 1974). This initial observation has led to a large amount of studies that employ a comparative approach in order to describe how the particularities of talk-in-interaction may constitute talk as a specific institutional practice. As has been shown, some institutional practices are pre-planned to a high degree, or even scripted, such as court interactions (e.g., Atkinson & Drew (1979)) or pilot-interaction (e.g., Nevile, 2004) while others are less constrained, such as classroom interaction (McHoul, 1978). This concerns not only the allocation of turns, but also the kind of contributions and bodily conduct that are regarded as relevant for the institutional purposes at hand (e.g. Kääntä, 2012; Heritage and Clayman, 2010). In this article we are dealing with institutionally provided interaction (Arminen, 2005: 19), meaning that the interaction is taking place in an institution – a preschool. The preschool teacher recorded in our data describes the type of interaction analyzed in this study as serving the purpose of preparing multilingual preschool children for entering school, with a focus on the Danish language. However, this description is not necessarily one that other participants (preschool children) subscribe to. Indeed, they characterize the encounters with the preschool teacher as 'play'. The data corpus exhibits interactions which can have a more or less institutional character: Sometimes the interactants seem to do mundane, everyday types of talk, and sometimes the interaction seems more of an institutional type, which can be recognized as 'educational'.

While we suspend the physical context of the preschool as an explanatory resource for what goes on in the interaction (Arminen, 2005), in this article we explore the divergence of institutional (more specifically educational) vs. mundane talk. The analysis focuses on a sequence which develops from mundane talk about game materials (the teacher and two children have played a game, and now the game materials are being packed up) into a sequence which seems first and foremost educational. The sequence is unplanned, in that, in the course of packing up the game, the participants embark on a spontaneous mathematical activity of addition.

Teachers normally plan activities in the classroom in order to address specific areas of knowledge. Unplanned teaching activities, such as elaborating on a topic, however, are argued to be beneficial, since they emerge locally, are authentic and possibly more effective and memorable than planned teaching activities (Cadorath & Harris 1998).

Informal and incidental learning are other concepts related to the activity in our study. Informal learning (in which incidental learning can be included) refers to

learning, based on the child's own initiative, interest, and choice. It is typically unstructured but embedded in a meaningful context, often play, and conducted through social interaction and guidance (Rogoff et al., 2016). Incidental (random) learning, also contextual and social, is characterized as unintentional, differentiating it from informal learning which is intentional. Incidental learning is almost always not recognized as learning (Marsick & Watkins, 2001). Sawyer (2004) has conceptualized teaching as disciplined improvisation. Improvisation may include what happens in so-called 'unplanned spaces' between activities, and unplanned opportunities that may arise and be explored during planned teaching activities, which notably requires both planning and readiness on the teacher's part (Beghetto & Kaufman 2011: 96).

The educational project analyzed here is occasioned by a small-talk-like situation, and as such, unplanned. The way it evolves into a language and mathematical knowledge demonstration sequence is rooted in the participants' embodied actions and emerging from its contingencies (Mondada 2011).

In the analysis, we observe features that seem related to concepts that are central in the second language pedagogical literature, most notably the display of competence, in this case both linguistic and mathematical. We will demonstrate how the participants in this specific sequence use different (types of) resources and consequently respond in different ways to an educational project, improvisingly initiated by a teacher. This educational project has the potential of turning into a learning sequence where some change in participation (Sahlström 2009) is observable and specifically where a change in a participant's understanding of a learning objective is demonstrated. However, it evolves into a knowledge demonstration by a different participant than the one the educational project was designed for.

2. Data and Methodology

The data consist of an excerpt from a corpus consisting of 70 hours of recordings in preschools. Brouwer followed one preschool teacher who visited different preschools in a medium-large city in Denmark. The preschool teacher conducted language stimulation activities mainly targeting multilingual children. Overall, the data exhibits planned as well as unplanned educational activities, often, but not exclusively based in games, storytelling or practical and or mundane activities, While the outcome of the educational activity that we analyse here is not representative for the data overall, we find it interesting how the sequence evolves from being an educational project including the child that occasions it to one that ends up as a knowledge demonstration on behalf of the other child.

Informed consent was obtained from parents as well as preschool staff. All names and places in the data have been pseudonymized.

The data has been transcribed in accordance with conversation analytic conventions (e.g., Jefferson, 1984). Embodied actions are transcribed in accordance with the conventions developed by Mondada (2018) (See appendix).

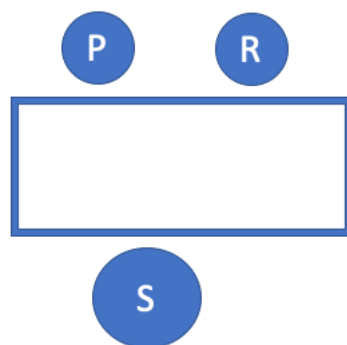
The instance which is analysed involves the preschool teacher (S) and two boys approximately 5 years of age, one with a Danish-Tamil background (R), one with a Danish-Greenlandic background (P), meaning that they mainly speak Danish in the preschool, while they speak their other language in the home.

We use conversation analytical methodology (Sidnell & Stivers, 2014), i.e., we analyse how participants achieve a common understanding on a turn-by-turn basis, using available linguistic, embodied and material resources. The study is a single case analysis, i.e., we zoom in on a single stretch of talk and aim at unravelling the complexities of that one sequence.

3. An Unplanned Pedagogical Activity in the Course of Packing up a Game

The preschool language teacher (S) and the two boys (P and R) have just finished playing a board game consisting of individual pieces of cardboard with images printed on them, and coins to be put on those images when a CD plays a sound corresponding to the image (the player with most coins wins the game). Each child has a couple of boards, and a number of coins in front of them (see e.g. Fig. 2 below). The participants have started to pack up the game in silence when the following instance occurs. The participants are all sitting by a table, the two boys and the teacher are facing each other. The boy R is sitting to the left of P (see Fig.1 below)

Figure 1. *The seating arrangement*



One longer sequence is divided into six shorter excerpts (3.1-3.6) and analyzed below.

3.1 Commenting on the progress

While collecting coins from his board and gazing at them, P comments on his achievement in the game ('I have taken many' – referring to the amount of coins)(line 1):

1 P: *+#jeg har taget mang:+*

I have taken many

+collects coins-----+

looks at board-----

fig #fig.2

Figure 2



2 (.)

3 S: *+¥ja +*

yes

¥looks at P's boards-->

p +holds coins+

p *looks at coins*

This comment and P's embodied actions accomplish to attract the other participants' attention to the coins. Commenting on the individual handling of objects changes the configuration of the situation.

Thus, P, R and S are initially occupied with the activity of packing up the game individually. The comment that P makes is a self-assessment that makes some uptake relevant. In response, S acknowledges P's comment by saying 'yes' (line 3) and by gazing at his boards. As we will see in the following, mere commenting on (individual) activity of manipulating objects (in this case game items) occasions a shift in the participants' attention from each individual focusing on packing up items in their proximity to joint involvement as uptake is invited. At the same time, it opens up for a change in the nature of the activity from one in which the focus is on handling objects (while talking) to one in which the focus is on talking (while handling objects).

Further, however, the utterance is not just a comment on the handling of objects, it is an evaluative remark using the positive value indicator 'mange' (many), for his endeavour (the collecting) (see e.g., Koole 2012). Thereby P not only creates a context in which the participants talk while they are packing up the game, but one in which others may acknowledge or even praise him for the number of coins he collected, which he has drawn their attention to.

P's remark is followed by a minimal acknowledgement 'yes' (line 3) by S, notably without any kind of positive assessment, as might have been expected following P's evaluative remark. However, S elaborates in a different manner.

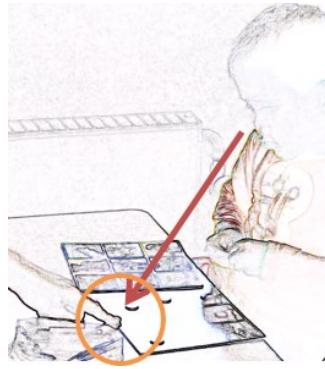
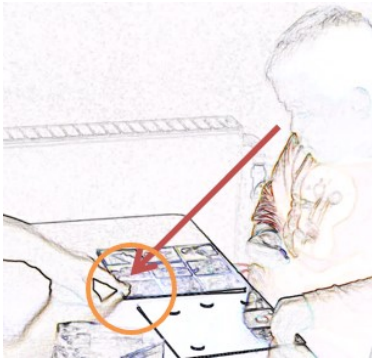
3.2 An occasioned educational project

S further elaborates on P's evaluative remark:

4 S: [*Der ɛ+fak]tisk #ɛ+*↑ni og ɛ*#↑ni+
There's actually nine and nine
 ɛ.....ɛpoints at board-ɛat other board->
 p +.....+picks up coin-----+
 p *gaze tw his hands--*tw S's finger--*tw S's finger->
 fig #fig.3 #fig.4
 5 P: [nu]
now

Figure 3

Figure 4



6 (0.3)

7 S: +\$Så- n- +\$*#den giver £\$¥↑atten+ \$

So n that makes eighteen

->£

\$index finger up\$-----\$lifts index finger\$

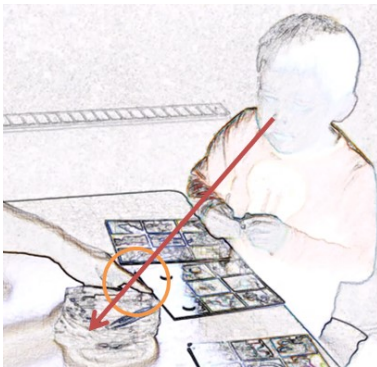
->¥

p +.....+puts coin in bag->

p ->*looks at the bag with coins->

fig #fig.5

Figure 5



In lines 4 and 7, S provides ‘there’s actually nine and nine’ followed by ‘so n that makes eighteen’. This turn by S that develops R’s comment orients to the quantity aspect of P’s turn and demonstrates an addition. It is an assertion that can be heard as doing teaching by providing a calculation.

The calculation is being constructed as such by using a variety of multimodal resources. First of all, linguistic structures: “number” – “and” – “number” “so that makes” “number”, i.e., two of the same number added up equals a different and

higher number. Thereby, a discursive pattern is established in order to express a mathematical pattern (Staats 2008). Secondly, this grammatical structure is being spoken with a distinct intonation used to single out the entities and use rhythm to point out a pattern in the structure: the first two numbers are said in a quite high pitch, whereas the final number is said in a clearly falling intonation. The numbers and mathematical terms relevant for recognizing the structure as a calculation are pronounced distinctly, and the statement contains the word 'faktisk' (actually) (line 4). Like its English equivalent, 'faktisk' generally expresses contrast and improvement (Clift, 2001). Thirdly, S uses embodied and material resources: When she says the first number, she points at the first board to the left, when she says the second number, she points to the second board, and the finger stays there and goes up and down a few times when she provides the result (Fig. 3 and 4, lines 4 and 7).

Thus, rather than addressing P's comment on a concrete state of affairs with an assessment, S takes P's comment as an opportunity to teach mathematics. S exhibits an understanding of the word 'mange' (many) as a quantity term rather than as a value term.

However, since this is done while the participants are packing up a game, there are not nine coins on each board anymore. What remains are the boards with nine pictures on each, corresponding to the number of coins that have been taken away, as well as some remaining coins (see Fig. 3 and 4). S refers to objects, some of which are no longer visible and tangible, and the pictures are thus functioning as a proxy. Thus, unless P (and R) already know how calculations work (which is not necessarily the case for their age group), making sense of how S combines tangible resources with linguistic ones may not be straightforward. As we will see, rather than being an educational situation in which tangible resources play a direct, exemplifying role, the previously present objects and the corresponding number of pictures on the boards represent merely a starting point for doing a less tangible, and thus much more abstract, activity. This activity is one which probably exceeds the typical ability for 5-year-old children (Canobi, Reeve & Pattison, 2003).

The educational activity taking place is unplanned, or occasioned, i.e., it emerges contingently from participants' embodied actions (Mondada 2011). Such projects differ from planned or formal educational projects, in which we could imagine a teacher laying out a number of objects and guiding a child through a number of increasingly complex mathematical operations, starting with some that the child can be expected to already master. However, they also differ from incidental teaching (Hart & Risley 1975), which similarly is occasioned by everyday interaction, but which is characterized by the child initiating the project, typically with a question or request. In contrast to this, from the utterance in line 1, P may be assumed not to expect a teaching sequence.

3.3 Participation in the educational project

When S has provided the calculation, P responds with “ni” (nine).

8 P: #+ni* +

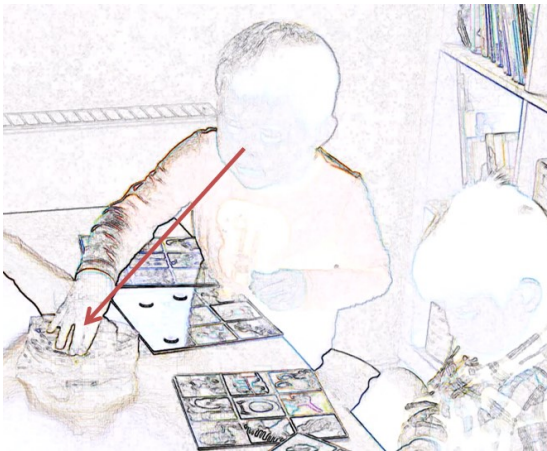
nine

p ->+,,,+

p ->*

fig #fig.6

Figure 6



Thus, he repeats one of the items singled out by S, possibly recognizing it as a number, but he does not show recognition that a calculation was done, nor does he display competence in how calculations are done.

In addition, we note that P only gazed at S’s fingers pointing at the boards when saying “nine” and “nine” (line 4). As she provided the result, “eighteen”, he was occupied with the coins in his hands, preparing to put them into the bag (line 7).

Hence, he does not seem to pay attention to nor display recognition of the linguistic structure of a calculation from previous encounters or from S’s assertion in which she, among other things, used linguistic structures, intonation, pointing and material objects as resources. It is, however, notable that whereas P referred to the coins he was picking up, S points towards the two boards that are divided into nine squares each which is possibly influenced by the fact that the material resources were being put away.

It is thus possible that in unexpected initiations of teaching, unless some expertise in the calculation operation is already mastered, the uptake of such a project is not optimal: P has not shown recognition of a calculation nor shown competence in how calculations are done.

3.4 An implicit correction

S makes a second attempt to include P in the calculation activity. She does this by implicitly correcting P:

9 (0.4)

10 S: £+#atten af de her£ (.) ~m:ønter £ har du haft

eighteen of these coins have you had

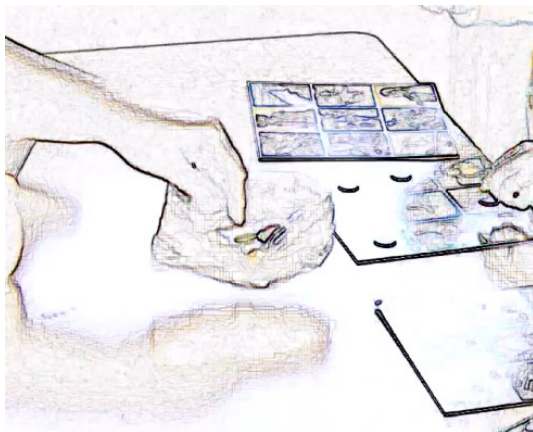
£lifts bag-----£fingers in bag£

p +collects coins from his boards->>

r ~looks at bag->

fig #fig.7

Figure 7



She starts her turn with 'eighteen' (line 10), thus showing P that a more relevant action would have been to repeat the outcome of the calculation. During her turn, S points into the bag containing the coins and lifts it slightly from the table (Figure 7, line 10). This may be seen as an attempt to establish joint attention with P by manipulating an object that he is orienting to and in that way make him orient to S and her activity.

Another reason for S's manipulating the bag may be that the coins which S is referring to and using as objects in her calculation are no longer visible on the table – some of them have been packed up and placed in the bag. In that way, the possibility for materially connecting the calculation activity to the collecting activity which P is possibly engaged in is rendered increasingly difficult, and eventually impossible.

Thus, S pursues the project of teaching calculations, making a second attempt to engage P in doing calculations. She uses multimodal methods for doing this

in the sense that she manipulates relevant objects, both in order to establish joint attention and in order to make the activity of calculating more tangible by anchoring it in material, available objects. The pursuit of an elaborated teaching project occurs after an unsatisfactory uptake by the child: No understanding of the operation or the outcome is provided. The strategy used by S is similar to pursuits of a (more adequate) response (Pomerantz 1984) through actions, such as response prompts or self-corrections, which treat the lack of or inadequate response to an initiative as indicative of a problem (Bolden & Mandelbaum 2012; Zemel & Koschmann 2011).

3.5 Gathering coins or doing mathematics?

After S's second attempt to engage P in a calculating activity, P and R respond in overlap (lines 11 and 12):

11 P: ¥# [~¥#Een (.) to]
 One two
 r ~looks at S->>
 s ¥gaze tw bag¥looks at R->>
 fig #fig.8a+b #fig.9a+b

12 R: [Ni plus ni] giver atten
 Nine plus nine makes eighteen

Figure 8a



Figure 8b

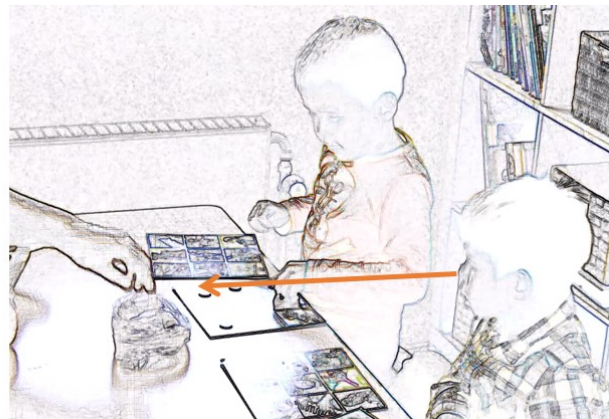
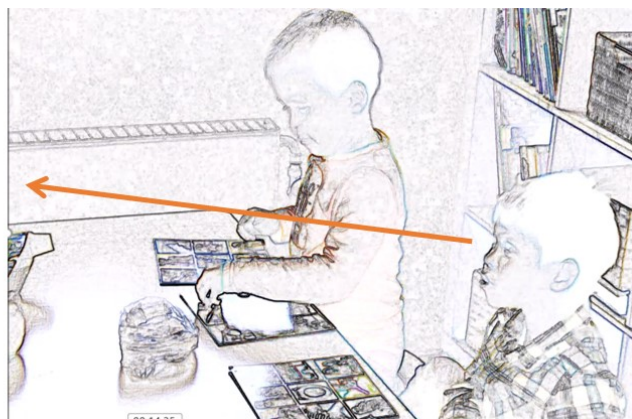


Figure 9a



Figure 9b



13 S: ja

yes

P begins what can be heard as a counting – one, two – while collecting coins (line 11). His gaze is directed at the board and the coins. P thus continues his focus on quantity (cf. line 1) and numbers (cf. line 8) , utilizing the material objects in front of him, and he remains engaged in the main activity of packing up the game. We may conclude that the counting is relevant in relation to both P’s own remark on having collected ‘mange’ (many) and S’s reaction to it.

However, simultaneously with P, R gazes at S and says, ‘nine plus nine makes eighteen’ (line 12). He thus produces a modified repeat of the calculation that S has presented, showing that he recognizes it as a calculating activity. Further, he recognizably produces the calculation in a ‘standard’ format for doing such calculations. Moreover, he is the first person to use the term ‘plus’, thus demonstrating linguistic competence in mathematics independently of S (on childrens’ use and understanding of mathematical terms, see Moseley 2005). R’s contribution is produced in a rhythmic manner, which displays an orientation to the calculation activity as ‘one in a series’, as one example of a specific type.

S shifts her gaze to R at the exact moment when P starts counting and R initiates a turn which is recognizably relevant in relation to the project which S has initiated. She also acknowledges R’s contribution with ‘yes’ and a nod.

There could be several ways in which P could show that he understands.

A relevant next action after an assertion like the one S makes (‘eighteen of these coins you have had’) would be to acknowledge the information (minimal); to evaluate it as new; to repeat it; or to offer a similar assertion.

Even though P does none of the above, P’s response to S’s calculation may be seen as relevant: He displays an overall understanding that S has specified his

'mange' (many) with a digit 'ni' (nine). Furthermore, he displays an understanding that some mathematical operation is in play, by starting to count. Note, however, that this is only partially relevant and occurs after a pursuit.

R, on the other hand, produces a modified repeat of the calculation, using a mathematical term 'plus', thus demonstrating independent knowledge of what calculation is. Further, he gazes at S, achieving mutual gaze at the beginning of his participation in the activity.

The teacher orients to R's contribution as a more relevant one, by shifting her gaze to him (line 11), and responding with an acknowledgement (line 13). This happens in a context in which P was the original and main recipient of S's teaching, occasioned by his opening remark and after a pursuit of a relevant response. P's response can thereby be seen as being overruled by the more specific and relevant display of linguistic/mathematical competence of an overhearing recipient. The participation framework (Goffman, 1981) is thus shifted (dramatically) through S's embodied action (Goodwin, 1981).

3.6 Demonstrating knowledge of how calculations are constructed and their results

The sequence continues with a longer stretch of interaction between S and R asking for and showing competence in doing calculations while P is occupied with packing up game materials:

14 R: [og to plus]

and two plus

15 S: [lige som £fem] plus £#fem giver £ti £

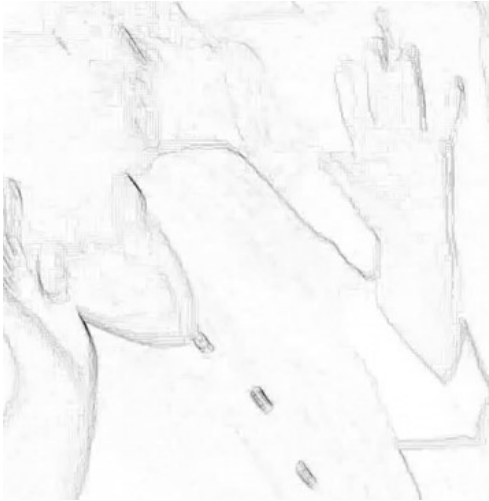
just like five plus five makes ten

£left hand up-£both hands up-£palms tw centre£

fig

#fig.10

Figure 10



16 R: (hh.) o:g §to § plus §to § giver §fire§

and two plus two makes four

§nods§ §nods§ §nods§

17 S: ja

yes

As exemplified in the sequence above, R and S in overlap produce further examples of calculations by reusing the calculation structure and replacing the numbers. R initiates the same type of activity as S in overlap with her, thus demonstrating that he has recognized the method of calculation based on the first instance and he displays that he has a generalized understanding of the mathematical activity of addition by reusing the same linguistic structure (Staats 2008). Both participants thus orient to the calculation format as a 'type' of which they now provide further examples.

S makes use of her hands as a resource for making the calculation process visible and tangible (Figure 10, line 15). When S has finished, R picks up his example of the calculation type again (line 16). He does not use his hands to illustrate the calculation, but he uses his body and head to mark out the rhythm while he produces the calculation (line 16). This is a further indication that R orients to the structure of the calculation as an underlying type where you can substitute the parts, i.e., the numbers, to produce different examples.

After the excerpt above, the sequence evolves into a series of test questions by S to which R responds, and there are acknowledgements by S. Throughout the sequence, P is engaged in the other concrete activity of picking up coins and counting them (not shown in the transcript). Hence, the sequence proceeds with R and S, while P is not participating.

R and S, having established a participant framework by means of gaze, thus continue the calculating activity, but in a more abstract way than how the

calculation was introduced. Both use various embodied resources as part of their activity (hands, rhythmic movements), and they no longer orient to the material resources of the game as relevant for their activity. In a sense, they have abstracted the calculation activity from the more concrete activity of packing up the game and counting the (visible, accessible) coins on the boards.

4. Concluding Discussion

Our analysis has demonstrated how an unplanned educational project is occasioned and how it unfolds in interaction. The unplanned educational project is done in direct succession of playing a game. We have shown how the participants use the material resources from the game, the board and the coins, for accomplishing a common activity, and how the decreasing availability of the materials as they are being packed up may hinder the accomplishment of a common understanding of the interactional project that the preschool teacher has initiated.

We have also shown how participants use embodied resources to participate in the abstract activity of doing calculation, and how that requires knowledge about calculation to begin with, and how embodied and linguistic resources such as linguistic structure, rhythm and repetition may be used to demonstrate competence.

Finally, we show how participants are included and excluded through the use and orientation to available resources such as the concrete material objects and the embodied and linguistic resources that can demonstrate more abstract knowledge about calculation.

In the sequence analyzed, the preschool teacher's educational project is unplanned, occasioned by a small-talk-like situation. In response to a remark that recognizably invites acknowledgment and possibly positive assessment, she initiates and pursues a mathematical activity, i.e., an educational activity. The reactions to this educational activity from both boys occur simultaneously, but the contribution from the child that was not involved in the interaction from the start is oriented to as more relevant, and thus the participation framework has shifted.

The unplanned educational activity provides a possibility to demonstrate competence in terms of mathematics and mathematics literacy – an opportunity which R seizes while P seems not to recognize it or be able to respond to it. The educational activity does not involve manipulating or counting objects, which P demonstrates competence in. The educational activity thus invites displays of a specific type of competence, while other types of displays are not acknowledged.

Objects that could have been exploited as resources for language stimulation are not employed as the activity turns into a demonstration of abstract

knowledge of calculation. It might have been more fruitful for P if the teacher had followed his remarks and manipulation of available physical objects in situ and developed the conversation within this framework. The sequence does not unfold/evolve as a learning sequence, but rather as an occasion in which two participants display what they are already capable of.

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Appendix. Transcription conventions

- : prolongation of sound
- ↑ high pitch
- n- sound cut off
- [] overlapping talk
- (0.2) pause measured in seconds
- (.) micropause (less than 0.2 seconds)

Descriptions of embodied actions are delimited between two identical symbols (one symbol per participant and per type of action) that are synchronized with correspondent stretches of talk or time indications. The participant doing the embodied action is identified in small caps in the margin. This study uses the following symbols:

- + + gestures done by P
- * * gaze by P
- £ £ gestures done by S
- \$ \$ finger movements done by S
- ¥ ¥ gaze done by S
- § § gestures done by R

~ ~ gaze done by R

In addition, the following conventions are used for describing embodied actions:

*---> The action described continues across subsequent lines

---->* until the same symbol is reached.

--->> The action described continues after the excerpt's end.

..... Preparation of an action.

---- Apex of the action is reached and maintained.

,,,,, Retraction of the action.

Indication of the exact moment at which a screen shot has been taken.

fig Indication of the figure exhibiting the screen shot.