

# The Joint Attention, The Object Naming, The Infant-Adult Empathy as Components of The Declarative Indicative Gesture of Infant

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## Abstract

A well known investigation of U.Liszkowsky et al (2004) proved that a protodeclarative gesture of an infant of 18-20 months is a tool to obtain adult attention and that for instance, showing and pointing as attempts to share attention and interest to an object or event. This data is very important for the social-functional conception of developing that suggest that even before the appearance of speech an infant has a motif to share the experience with the interaction partner, а motif of emergence of new knowledge. But we suggest that the origin of this type of tasks of infant consists not only in the general infant orientation to the interaction with the others (as describe U.Liszkowsky et al. following the M.Tomasello tradition), but in the specific organization of the perceptive field of infant at this age: in the perception of infant appears a completely new way of it functioning that requires an adult involved in the interaction and that is hapening only in a shared way. If our suggestion is true, the infant will not be satisfied by the modification of the experiment of U.Liszkowsky et al (2004), in the case when only the adult will see the object after the infant's pointing and the infant will not see it.

**Keywords:** protodeclarative gestures; joint attention; joint perception; object naming; pointing.

## Introduction

A well known investigation of U.Liszkowsky et al (2004) proved that a protodeclarative gestures of an infant of 18-20 months is a tool to obtain adult attention, for instance, showing and pointing as attempts to share attention and interest to an object or event. This made possible to affirm that even before an appearance of speech an infant has a task to have an unselfish informational exchange with the adult/ and this task is completely different from attracting attention to its emotions or from attracting emotions to itself and to the object. This distinction is high important for the social and functional conception of development that suggests that even before the appearance of speech an infant has a motif to share the experience with the interaction partner, a motif of emergence of new knowledge.

We suggest that the origin of this type of tasks of infant consists not only of the general infant orientation to the

interaction with the others (as describe U.Liszkowsky et al. following the M.Tomasello tradition), but also of the specific organization of the perceptive field of infant at this age: in the perception of infant appears a completely new way of its functioning that requires an adult involved in the interaction and that is happening only in a shared way. It should be pointed out that in the experiment of Liszkowski the shared knowledge of the object was not distinguished from the shared perception, but was at the same time distinguished from the infant's attention to itself and from the infant's attention to the object. But what will happen if we try to distinguish these forms? For example, if the object, immediately after the infant pointing will disappear from his visual field, but will still be visible for the experimenter - how will the infant behave? Will he point with the same frequency as in the situation of joint attention? We suggest that this situation will mostly break the expectations of infant because it doesn't respond o the goals of this declarative indicational gesture and a joint perception of an object.

Besides, in the experiment of Liszkowski et al. (2004) the presentation of разделенной перцепции joint attention wasn't analysed without object naming. Thus results can be understood the next way: the main task for the indicative gesture is to hear the object naming. It would be a predictable result congruent with the general orientation of a 18-24 months infant to speech stimulation and its perception.

It is also possible that the results obtained by Liszkowski et al. (2004) indicate the importance of the interaction between the object naming and joint emotional experience toward this object, and that naming itself or joint emotional experience itself would not lead to the interraption in pointing. As it was found out in a number of recent works the situation of joint attention is really a burning point of teaching, and it is possible that infants will seek to discover the object's name especially in this case of situation.

We produced the following experiment to verify these suggestions.

## Experiment 1.

### Method

**Subjects** Infants were recruited from a database of German infants whose parents had expressed interest in participating in studies of child development. 25 children of 16-20 months participated in the experiment, the average age is 18 months. The age differed from the average age of infants in the experiment of Liszkowski et al (2004), that was 12 months. But in other researches of this group of investigators, planned analogically (Liszkowski, 2006), side by side with 12-months children participated 18-months children. In this issue the behavior of these age groups wasn't different: all of them pointed much more in situations when the adult's attention was directed to an infant or to an object. 18-months children vocalised more often, but didn't show a long duration of pointing, when the adult was looking at the infant, but these results are not significant for us.

**Materials** Testing took place in a 7m\*5m testing room. The infant was seated in an infant-sized chair (approximately 0,5 m) with a small table attached to it (40\*40 cm). The table was full of different toys – a picture book, cubes of different colors, so the child could play with the experimenter before performing the experiment. E1 sat to the infant's right and the mother sat to the infant's left (or a teacher, if the testing took place in the kindergarden). The experimenter's assistant was behind a large screen made of white cloth sheets which blocked the entire back side of the testing room. The screen was positioned in front of the infant at a distance of 3 m. It measured 180\*130 cm and had 4 evenly spaced window openings (15 · 25 m cm apart, 90 cm from the floor). The screen size was 180x130 cm, the screen had 4 windows with opening doors 15 \*25 cm. In the bottom of the windows were attached pieces of white cloth, 10 cm in length and 25 cm in width (the full width of the door). Windows were located at equal distance from each other, and two central ones were located in 7,5 cm from the center of the screen to the right and to the left correspondingly. The assistant has to demonstrate objects(toys) to the infant sitting in front of the screen. There were 5 objects in the experiment, the object number 5 is presented only in the case of non-pointing to one of 4 main objects. The color of all the toys is contrast comparing to the screen color, all the toys are about the same size, and all the toys are representing animals.

There was a hole in the screen with the camera in it. The camera was hidden after the screen and used to tape the experiment and to facilitate the communication between the experimenter and the assistant – the assistant has to notice the signals from the experimenter.

**Procedure** During extensive play between the experimenter and the infant in a warm-up area, parents were instructed by E2 not to initiate any communicative behavior toward the infant during testing and not to look at the screen at any time. The session began with a short play period with the illustrated book on the table to keep the infant interested in the experimenter as a social partner. The same play was repeating in short breaks between test trials. When the experimenter judged that the infant established the contact, was relaxed and attentive, she gradually withdrew from the interaction and signaled to her assistant by casually touching her ear. The experimenter ignored the stimulus until the infant pointed. After the first pointing the interaction changed according 1 of 4 conditions

**JAns** (Joint attention with naming and shared emotions) : The door is still open, the experimenter looks back and forth

between the event and the infant's face, names the object and expresses the emotion the infant was feeling (according to her) (happiness, astonishment delight, ).

**JAs** (Joint attention with shared emotions without naming) : The door is still open, the experimenter looks back and forth between the event and the infant's face and expresses the emotion the infant was feeling (according to her) (happiness, astonishment delight, ), but doesn't name the object.

**JAn** (Joint attention with naming without shared emotions) : The door is still open, the experimenter looks back and forth between the event and the infant's face, names the object, and expresses the neutral emotion.

**UAns** (Unjoint attention with naming and shared emotions) : After the first point of infant the door closes and the object hidden after the door is still visible for the experimenter but invisible for the infant. So the the experimenter looks back and forth between the event and the infant's face, names the object and expresses the emotion the infant was feeling (according to her) (happiness, astonishment delight).

after 10 s, the stimulus was withdrawn and the trial was over. The experimenter returned to normal play interaction with the infant. If infants pointed outside of the test event (e.g. to a different, closed window) E1 did not follow their point and

briefly commented on the behavior (e.g. 'Hmm, that was a nice point'). She then drew the infant's attention back

to the toy they used to play. If an infant did not point at the stimulus during a trial (10 sec), the assistant gives another stimulus.

Every infant participates in 4 tries with 4 different conditions. If the infant doesn't point in one of the conditions it is given another try with the object number 5 according the missed condition.

### **Coding and analysis**

Following the approach of Liszkowski et al (2004), points were coded when the infant extended the arm (either fully or slightly bent) and index finger or open hand, palm down, in the direction of the stimulus. Point duration was coded from the onset of the movement which resulted in a point until the arm was drawn back (is no longer extended toward the object) The infant can interrupt his point in one try, so we analyse also the quantity of points during one try.

Besides, we measured the time of fixation on the face of the experimenter and the quantity of looks to the face of the experimenter before pointing.

### **Discussion**

Our modification of the experiment of Liszkowski et al. (2004) specifies the character of the declarative indicative gesture of infant, mark out of the concept of joint attention as well as of object naming, infant-adult empathy, that were studied holistically in previous investigations, some independent components ant to evaluate their importance for the child.

### **References**

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