

Please cite as:

Liszkowski, U., & Brown, P. (2007). Infant pointing (9-15 months) in different cultures. In A. Majid (Ed.), *Field Manual Volume 10* (pp. 82-88). Nijmegen: Max Planck Institute for Psycholinguistics. doi:[10.17617/2.492895](https://doi.org/10.17617/2.492895).

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Background

The field manuals were originally intended as working documents for internal use only. They were supplemented by verbal instructions and additional guidelines in many cases. If you have questions about using the materials, or comments on the viability in various field situations, feel free to get in touch with the authors.

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INFANT POINTING (9-15 MONTHS) IN DIFFERENT CULTURES

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Project	Multimodal Interaction
Task	There are two tasks for conducting systematic observation of child-caregiver joint attention interactions. Task 1 – a “decorated room” designed to elicit infant and caregiver pointing. Task 2 – videotaped interviews about infant pointing behaviour.
Goal of task	To document the ontogenetic emergence of referential communication in caregiver infant interaction in different cultures, during the critical age of 8-15 months when children come to understand and share others’ intentions. This is of interest to all students of interaction and human communication; it does not require specialist knowledge of children.
Prerequisites	Please contact Ulf (liskowski@eva.mpg.de) if you intend to participate or contribute to this project. STIMULI: A set of 19 objects, to be used in decorating a room with objects designed to elicit pointing. PREPARATION BEFORE RUNNING THE TASK(S): Before running these tasks, you will need to work out exactly what the verbal instructions will be in the local language. And you will need to set up the ‘decorated room’ in line with the instructions below. It is advisable to have a supply of small toys as presents for the infant at the end of the task. Then you need to identify people in your research community with babies in the 8 to 15 month age range.

Background

This is a project conducted in collaboration between members of the Multimodal Interaction project and child development specialists, who will arrive at the MPI as part of a new 5-year MPG research group on “Communication Before Language” headed by Ulf Liszkowski, beginning in late 2007.

Human communication is unique in many ways, in particular because of our capacity for language. Cross-linguistic and developmental comparisons have provided important insights into the origins of linguistic communication. Strikingly, however, new evidence shows that even before infants have acquired language they already communicate gesturally in a rich and complex manner. For example, they point referentially to express and share their interest about particular referents, to inform an adult of things relevant to her, and even to locations of past referents (for overviews see Liszkowski 2006, Tomasello, Carpenter & Liszkowski in press). But the origins and development of pre-linguistic communication are not yet well understood. Apes do not seem to share a human capacity for pre-linguistic communication as they do not even point to begin with, and it is currently unclear to what extent pointing with the index finger is a universal across cultures, specifically in human ontogeny. Many questions arise about the social and ecological conditions for the emergence of early gestural communication. For example, is gestural communication learned via imitation or socially ritualised from individual

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actions? Do different cultural parent-infant interaction styles lead to differences in the emergence and development of gestural communication? This project aims to explore the role that different socio-cultural environments play in the emergence of infant pointing, before linguistic communication has begun in earnest. Knowledge about the role of socio-cultural factors in the ontogenetic emergence of gestural communication before language production will greatly advance our understanding about the roots of uniquely human communication.

We are interested in documenting the range of variation that exists in how infants initiate and are drawn into social interaction in the period prior to producing their first words. The critical age is between about 9 and 15 months, when major social-cognitive abilities emerge, including awareness of the other as an intentional agent and joint attention with a caregiver over a third object or event (the ‘referential triangle’; for a recent view see Tomasello, Carpenter, Call, Behne & Moll 2005). Evidence for this developmental milestone peaks around the age of 12 months, when babies reliably look where adults are looking, use adults as social reference points (gaze at them to check what to do in an uncertain situation); act on objects like adults are doing; actively direct adult attention. All of these are (putatively) essential prerequisites for coordinated interaction, and later for learning language. Indeed, infant pointing has recently been suggested to be one of the first ontogenetic manifestations of uniquely human communication, before language has emerged (Tomasello, Carpenter & Liszkowski in press).

The project focuses on how pointing unfolds in interaction sequences among pre-linguistic infants and their caregivers across different cultures. Primary questions guiding research include:

- (1a) Do infants point in the culture under investigation, and if so, at what age do they begin pointing?
- (1b) How do infants point – what is their primary means, the shape and orientation of their arms/hands; is pointing accompanied by vocalizations?
- (2a) Do infants’ primary interlocutors point *for infants*, and if so, at what age of the infants?
- (2b) How do infants’ primary interlocutors point – what is their main means, the shape and orientation of their arms/hands; is pointing accompanied by speech (what kinds of things do they say while pointing)?
- (3) Does infants’ production of pointing depend on infants’ comprehension of pointing?

(See also the questions in the “Ethnography of Pointing” section of this field manual.)

We wish to bring together information from diverse cultures. We would like to encourage everybody to help in at least one of the two following ways. Our preferred method is spelled out in detail below (“Elicitation procedure”). It relies on a **standardised, semi-natural elicitation procedure** which will allow qualitative and quantitative comparisons between cultures. It requires a little bit of planning ahead. A secondary method aims at answering the guiding research questions above by interviewing caregivers about their interaction practices and observing infants with regard to potential pointing episodes. Observations and interviews should be videotaped. This method may allow us to identify potential differences between cultures to guide future research (see “Interview/Observation”).

Task 1: Elicitation procedure

The method is based on a study conducted by Liszkowski and colleagues in Leipzig, Germany. It consists of two parts. The first part involves creating a scenario potentially conducive to pointing, namely a room decorated with objects that are worthy of pointing at, and having caregivers and babies walk through it to see whether and how they would point. The second part investigates whether infants follow an outstretched arm and index-finger to look at a lateral target (or whether they just look at the finger).

Consultants

In Western cultures (e.g., Europe and North America) pointing emerges between 8-15 months, with a peak around 11 or 12 months. We need both pointers and non-pointers in our sample to introduce enough variance for our comparisons, but want to keep the age as homogeneous as possible to avoid more general age differences. We therefore aim for 12 month-olds, but if the community is small, infants could fall within the relevant age-range of 8 to 12 months, again aiming for a peak around 12 months, before infants communicate linguistically.

The more infants the better – statistical comparisons do not work well on a small number (< 6). 10+ would be good. If all is kept standardised – but only then – it is also possible to go back a few months or a year later to continue with the data collection. (There may also be possibilities for later funding of ongoing projects).

NOTE: If infants in your sample never point, please try one or two older infants (say up to 24 months), to see whether the procedure works at all (or you could also start off with an older “pilot” kid).

Stimuli

We provide in advance the necessary materials for decorating the room. We supply a kit containing 19 different stimuli which serve as potential referents (to which you will add a locally available cup). These fall into 3 broad categories:

“picture/poster”: 4 pictures with multiple elements in them – photos of animals, familiar objects – that could be referred to as whole or its parts.

“exploratory/exciting”: 10 things that are interesting to infants – a feather boa, a flower lei, a small light that flashes; a pair of bike reflectors, a brightly coloured spiral pinwheel; a clown face, a butterfly; a clownbell doll; a dangling keyring; a disco mirror ball

“familiar/liked”: 5 common likely-to-be-familiar things – a ball, a doll, a cup, a balloon, a bunch of paper flowers

The kit also includes attaching techniques (paper clips, string, ducttape, thumbtacks, clothespins).

Set-up

We use a room which is “decorated” with the 19 stimuli. The stimuli should be apart from each other and located around the walls of the entire room. They could hang from the ceiling, be mounted on shelves/chairs/boxes, and be attached to the walls. An analogy to the scenario to be created would be an exhibition (or a zoo; aquarium). It could even be helpful to have a little line or rope barrier that maintains a distance of 0.5m between participants and stimuli. Alternatively, the stimuli could all be distributed in the middle of the room (again apart from each other and possibly “fenced” by a rope or line).

The set-up may also be possible outdoors (but see Procedure below). It may require some tinkering with clothes-lines and branches (tripods are most stable). (Again, the participants could look either from “inside” at the stimuli around them, or surround the stimuli from “outside”.)

Whether indoors or outdoors, the array of stimuli should be distributed far enough away that participants do not have the stimuli right in front of their noses so that they cannot just touch them; they are out of reach. Rather they should walk along to get to view them all (again, as in an exhibition; see Procedure).

Videotaping is essential. Best results are obtained with 2 cameras mounted on tripods opposite each other allowing capture of the entire array and avoiding the problem that dyads may turn their backs to the camera. The cameras should be synchronised at the beginning of each recording by clapping the hands sharply, once, in full view of both cameras. Wide angle lenses might be useful, depending on the room size. Make a test with yourself as participant first to ensure that the room-explorer is fully within camera range and gestures are visible. Remember that infants’ arms and fingers are much smaller than yours. Check whether sound recording works too.

Procedure

Infants’ primary interlocutors are instructed about what to do. It is very important to follow the exact same instructions in all cases! The instructions must not be given inside the room but before entering it. Basically, it should be conveyed that the adult caregiver should carry the child and take a tour in the decorated room to “explore”/“discover” it *together* with the child. Participants also need to be told that they should not take or remove any items from their places to avoid proximal showing or manipulating of objects instead of distal pointing. It *must not* be mentioned that we are interested in pointing because this could bias the natural interaction style. **Therefore words like ‘pointing’ and ‘showing’ must not be used in the instructions.** Participants should know you as a researcher.

Below are possible instruction sentences – depending of course on what the language allows. The instruction should be given just before testing, so that it is ‘fresh’ in the participant’s mind.

Instruction sentences:

....[Greeting] [thanks for helping me!] [I have something very simple I’d like you to help me with which can be interesting/fun for you and your child]

“We have prepared a room and decorated it a bit. We would like you and your child to have a look **together** at the room and the things in it. We give you some time alone with your child (about five minutes) to explore the room together with your child, so that you can discover all the things we have put there. Carry the child so that you feel comfortable and so that you and your child can easily look together at the things, e.g., carry her in arms, or on your hip. Oh, and, please don’t take or remove any of the things you see in the room. It is important to us that they all stay in the same place. I will be waiting outside and I’ll come back in five minutes. Meanwhile, you can start. Don’t worry, be as you always are, do as you would usually do when you look at things together with your child.”

If there is a need to explain why we want them to do this task, that is if (only if) the parent asks explicitly, one could say:

“We are interested in how parents and children like different things, and how they explore these together.”

NOTE: If a conversation starts after instructions and before the test, when it then ends it would be wise to repeat the instructions, at least in part, so that they are the last piece of communication before the 5 minute exploration of the room starts.

Point following by infants

An additional mini-task on “point-following” is a necessary follow-up to the “decorating” room procedure. The question is this: is infants’ pointing related to their ability to follow others’ points? A simple point-following task should be conducted by the experimenter (or a local trained consultant). Set up (out of sight of infant and mother) a chair for mother/baby, and place 2 lateral, non-moving objects at each of the sides about 6 feet away. The objects must not move and their placing should not have been shown to the infants, because we want to avoid infants individually looking at the objects before the task starts.

Sit opposite the infant, spend a few minutes getting her to relax (smile, show her toys, and (gently) try to elicit interactional responses from her). Then make ostensive eye contact with the child and call her name. When she looks at you, point and look to one of the targets, while emoting positively (“Wow! That is neat”, [hold point and look at object for about 3s] [look back at infant, retrieve point] “Nice, uhm?” [point again, as before about 3s] “Oh, really interesting”). Then repeat the procedure with the target on the other side. Repeat this procedure on both sides, for a total of 4 trials. In Liskowski’s Leipzig sample, point-following to the target (as opposed to looking at the finger or not looking at all) correlated with the overall amount of infant pointing in the decorated room (Liskowski, Carpenter & Tomasello, submitted). If it is feasible to have an assistant to do this part of the task, this is a good idea. Filming this task is desirable if feasible; otherwise take careful notes of whether and where the infant looks when prompted by your point.

NOTE: We want to avoid participants realizing that these tasks are about pointing. So please don’t explicit use the words for pointing or showing, even after the task is completed (to avoid the word spreading). This will help to keep the elicitation task as natural as possible.

Task 2: Interview/Observation

This method does not require any special materials. We would like you to interview caregivers of pre-linguistic infants around 1 year of age. Please videotape these interviews, because participants may demonstrate the way they gesture. For statistical comparisons it would be good to have 6-10 interviews. If you have the opportunity it would be great to record some natural observations on caregiver-infant interactions as well. The interview should be thought of as an open interview (“clinical interview”) which allows for clarification and elaboration questions. The order of questions, however, should be maintained, if possible.

Questions

(NOTE: We avoid using the word pointing in this interview. If you do the pointing questionnaire in this field manual with the parents of your babies, do it **after** the “decorated room” task, ideally on another day. We do not want to draw parents’ attention explicitly to our interest in pointing.)

- (1) What is the child’s birthdate? Age? [from now on, use NAME of child]
- (2) Do you sometimes want your child to look at something specific? How do you get her to do that? [how else?/ what other ways do you use?].
- (3) What kind of things is your child interested in? afraid of?
- (4) Does she speak at all? Any identifiable words?
- (5) Does your child sometimes show things to you? How does (s)he do that? [how else?/ what other ways does (s)he use?]. Does she sometimes want you to attend to things somewhere outside her immediate visual scene/ out of reach?
- (6) How does she move - does she crawl? does she walk?
- (7) What does your child do when (s)he wants to have something that she can’t reach? [what else?—explain].
- (8) Does your child cry a lot? Is she often sick?
- (9) Do you sometimes indicate things for your child to attend to? How? Can you demonstrate it [e.g., how would you indicate that thing (pick a distal referent) for your child?]?
- (10) *IF parents report that their infants point, or if you have observed it:* Do you remember when your infant first started to point like this? (demonstrate) A week ago? A month? Before (s)he walked? (prompt with memory aids, e.g. trips, festivals, etc).
- (11) Is your child sometimes looked after by others? Who? Sometimes by other children? Often?

Analysis

Analysis will consist in tabulating the results of interviews and systematic observations of pointing behaviour, statistical analyses of results from the “decorated room” task, and coding of videotaped interactions for the variables of interest. Participants who have data based on this field manual entry will meet (where possible) to compare and discuss the results. They should be prepared to supply the verbatim instructions given in their language, so we can check comparability.

Outcome

We expect every researcher carrying out (part of) this task to write a short report detailing their observations about child/caregiver interaction practices in the community of their study. This will form the basis for publications (either joint, or individually, depending on what we find) describing the interactional practices under examination (e.g. achieving joint attention over an object by pointing).

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