

**A LINGUISTIC PERSPECTIVE**  
**ON EGOCENTRISM**  
**AND ROLE-TAKING**  
**IN CHILD-CHILD INTERACTION**

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## **Preface and Acknowledgements**

This paper is deeply connected with my private life. Only through living together with children, the ideas and hypotheses outlined in the following chapters could come into being. I am therefore in debt to both my children, Jannis and Lukas, who, hopefully, never realized that I sometimes looked somewhat closer at their (linguistic) development than parents usually do.

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## **Introduction: Sibling interaction in focus**

Although the investigation of child development, in general, has a long and varied tradition, researchers have primarily been interested in either the child alone or the interaction of the child with the mother. Children, however, rarely live alone with their mother (Ervin-Tripp 1976; Nelson 1987). During the late seventies, the children's wider social surroundings gradually came into focus. Fathers, who tend to be absent a greater amount of the time, have been taken into consideration (Mannle and Tomasello 1987). Some other investigations were directed towards peer interaction in the homes or in larger groups such as kindergarten (e.g. Eckerman, Whatley, and Kutz 1975; Eckerman, Davis, and Didow 1989).

The focus of this paper, however, will be on the importance of siblings for each other. During the preschool years, siblings tend to spend a lot of time together; they even have a tendency to stay together in the same room. In the course of this shared time, there is a high level of varied interaction between them (Abramovitch, Corter, and Lando 1979). Especially when the age difference is rather small, it is not unreasonable to expect that siblings spend the most part of their early years together with each other and their mother (or a different caretaker who is most relevant for the children). It would be surprising if this fact did not have any effects on the children's development.

During the past twenty years diverse aspects of sibling interaction have been focussed upon. I will give a short overview to show the variety of investigation in this field before going on to specifying the aim of this paper. My overview will not be limited to linguistic observations. I believe that verbal behaviour cannot be totally separated from other aspects of interaction. This is even more true for children who are only beginning to discover that language can be used to cover almost all aspects of interaction. Only a very small part of their interaction is verbal. Children's linguistic behaviour, which will be the focus of this paper, should be viewed as one piece of a larger puzzle.

Most children like imitating others. When another child is around, their imitation is no longer restricted to the actions and speech of their mother; they have the opportunity to imitate somebody else in addition. Studies showed that

siblings do indeed imitate each other a lot (Abramovitch et al. 1979; see also Dunn 1984). Older children may serve as teachers or linguistic models (Woollett 1986) for the younger ones, providing them with stimulation. They may profit by exhibiting their power, which is an outcome of their greater age and maturity (Bank and Kahn 1982). Siblings assume different roles in the everyday home context (Lamb 1978; Abramovitch et al. 1979): the older children tend to be 'leaders' by drawing the infants' attention and by assertive dominance, while the younger ones 'follow' by observing and imitating. Siblings influence the behavioural development of each other (Lamb 1978); the behaviour of the infants in Lamb's first study was a predictor of the older siblings' behaviour six months later.

Siblings manage to give comfort to each other from a very early age (Dunn 1984). Infants show excitement when playing with the older sibling already from the age of eight months. Later on, the children develop games in which they act together in very simple, repeated ways, which is a source of much joy for them. Possibly they feel that they have something in common which differentiates them from adults. Dunn observes that empathetic behaviour, the ability to realize another's emotions and react accordingly, emerges already during the second year of life. The reason for this may be that the sources of pleasure, joy and fear are very similar for the children. This is also reflected in their language: they increasingly refer to the feelings of others (Dunn and Munn 1987).

In the home context, children are witnesses to emotionally loaded interactions (Dunn 1989). Emotional involvement makes interactions especially salient for young children: impressed by emotions, children learn much about the world and the people around them. In addition, siblings have the opportunity to watch each other every day. The children experience familiar routine situations together (Dunn and Munn 1987; Dunn 1989), in a setting of emotional urgency (Dunn and Munn 1985). Children compete for parental love (Dunn 1984), and they develop a pragmatic understanding of what upsets their sibling from their second year of life (Dunn and Munn 1985). Also, the social rules of the family - what the children are allowed or required to do - are observable through the presence of the sibling (Dunn 1984; 1989). The feeling for these rules emerges during the second year of life (Dunn and Munn 1985). This is also reflected in

the children's language (Dunn and Munn 1987). Ely and Gleason (1995) even suggest that children learn the 'ways of the world' through interactions with each other.

The younger children differentiate clearly between their mother and the sibling. This is shown both in their actions (Dunn and Kendrick 1982) and in their language (Brown and Dunn 1992). Dunn and Kendrick (1982) suggest that the sibling relationship is profoundly different from the parent-child relationship in that it is not necessarily an affectionate one. This sometimes fairly complicated relationship is reflected in the language siblings use toward each other. Studies proved that a greater amount of the utterances which older siblings direct to their younger brothers or sisters are social-regulative (Jones and Adamson 1987). In their linguistic interactions, siblings tend to be more directive than helpful (Tomasello and Mannle 1985).

Several investigations highlight the fact that siblings cannot 'tune in' to infants as much as parents can (Vandell and Wilson 1987; Mannle and Tomasello 1987; Mannle, Barton, and Tomasello 1991; Barton and Tomasello 1994). This has various consequences. The "Bridge Hypothesis", developed by Mannle and Tomasello, suggests that siblings serve as a 'bridge' to peers or strangers, who are even less adept at interacting with the young child (Mannle et al. 1987; Mannle et al. 1991). The feedback that infants get from people other than their mother gives them information about the efficacy of their communicative skills (Mannle et al. 1987). This may prepare them for communication with other people. Vandell and Wilson (1987) observe that, in interacting with the sibling, the infants may suffer from the fact that their own interests are not appreciated as much as in interactions with their mother. It is rather the case that the infant has to respond to the older sibling. Consequently, sibling interaction confronts the children with diverse challenges.

In fact, it has been suggested that children who grow up in a wider family context achieve certain skills earlier than others. Those, for instance, who are often members of multiparticipant conversations, soon learn to intervene with relevant remarks (Dunn and Shatz 1989). Moreover, the presence of an older sibling influences the interaction between mother and child. The linguistic environment becomes less directly adjusted to the child's needs, and at the same time more stimulating. Thus, the children influence each other both

indirectly through their interactions with the mother, and directly through their interactions with one another. The infants get the opportunity to listen to conversations which they are not a member of. They may be referred to as third party (Woollett 1986). Children under two years of age can attend to and learn from speech which is not addressed to them (Oshima-Takane 1988). This is especially the case when one of the other participants is not an adult, as utterances made by siblings may be easier to follow. Older siblings seem especially apt candidates for being helpful in language learning, as they share many experiences and the wider family context with the child. Schaffer (1989) refers to this observation as the 'Overhearing Hypothesis'.

Not only do mothers provide different language for the younger child to overhear when the older one is present; they even generally talk differently when they have two children rather than one (Jones and Adamson 1987). Their speech becomes less 'tuned-in' with the later-born child. This fact adds to the linguistic challenges with which the siblings themselves confront each other.

The interaction between siblings is influenced by the presence of the mother (Corter, Abramovitch, and Pepler 1983; Ely and Gleason 1995). The siblings tend to interact less and to be relatively more agonistic when the mother is present. When the mother is absent, the children get the opportunity to assume roles they rarely assume when talking with adult partners. They also discuss internal states with each other (Howe 1991). Dunn (1988) observes that the behaviour of the mother towards the children greatly influences how they feel and behave toward each other. She also points to the fact that discussions of feelings with the mother have an impact on the interaction between children. Also, social understanding in general is affected. Children profit from family discussions in their social-cognitive development (Dunn, Brown, Slomkowski, Tesla, and Youngblade 1991).

This overview has shown that family interaction has been focussed upon from various points of view. Points of interest have been the influence which siblings have on each other, the maternal influence on siblings' behaviour toward each other, and the impact that the presence of two children, rather than one, has on the mother's (verbal) behaviour. Furthermore, it has been suggested that mothers behave differently towards the children depending on the number of older or younger children in the family. This variety of possible

viewpoints is indicative of the complexity of family interaction, and the various consequences which this complexity may have for children. Obviously, as the investigation of family interaction has no long tradition, the various viewpoints have so far only been analysed on the surface. Further evidence is needed to confirm the conclusions suggested so far.

The first part of this paper summarizes the findings in the literature concerning the influence of siblings on the development of perspective taking as reflected in language. First of all, I will relate the topic at hand to its historical background. It will be shown that most research originally had its roots in Piaget's (1926; 1947; 1959) theory that children are basically egocentric up to the age of six or seven. Research soon started to concentrate on the rejection of this theory through the insight that many aspects of perspective taking are acquired much earlier. As soon as this view was generally accepted in the 1980s, a new theory came into focus: Children develop, gradually, a 'theory of mind'. What this means and how this concept is acquired will be outlined in the second chapter. The third chapter will focus on the influence of siblings on each other. Those aspects of perspective taking which are affected by sibling interaction, and are expressed through language, will be dealt with in some detail.

The aim of the second part is to present several insights gained both from my own data and from everyday life with children. I will, to begin with, direct attention to the diverse methods of data collection in child language research, and the facilities they offer. My conclusion will be that naturalness is of great importance especially in the beginning. Only later will it be useful to set up laboratory experiments to test the findings gained from natural observation. My own study, as outlined in this paper, is based solely on home observation. The advantages and shortcomings of this method will be dealt with in the second chapter. In the following chapters, several aspects of sibling interaction will be focussed upon. It will be shown that perspective taking in sibling interaction is expressed in the children's comforting and teasing behaviour, in their ability to share and cooperate, and in their understanding of others' abilities. Then, the focus will be on how language reflects perspective taking abilities, and in how far an analysis of a child's linguistic development can be used to gain insights into children's perspective taking development.

The sixth chapter takes a slightly different course: As it was obvious during the time of data collection that there was more talk *about* the sibling than talk *to* him, I found it useful to analyse the features of this talk. It turned out that the talk about the sibling could be categorized into several kinds of comments, explanations, and the conveying of new information. These categories emerge gradually during the second to fourth year of life and highlight different stages of the child's perspective taking development. In the seventh chapter, I directed attention to a certain caveat: Children imitate much more than is observable during laboratory experiments; even several hours of home observation are not enough to show the extent to which children's linguistic and mental development is dependent on their social environment. It is thus conceivable that those events which seem to prove children's perspective taking abilities mainly prove the extent to which they imitate their mother. My final conclusion is that children start by imitating their models: they do not learn to speak in order to achieve anything such as getting fed or meeting others' minds, but they imitate for the sake of learning. Soon, they realize what chances they get by having acquired important skills such as language. Several remarks concerning further research appropriate at this point will conclude my paper.

## **I. PART ONE: THEORETICAL CONSIDERATIONS**

### **1. The influence of Piaget's egocentrism theory**

This chapter relates the current paper to its theoretical background. The Piagetian theory on egocentrism triggered much discussion and a multitude of experiments, especially during the 1970s. In the 1980s, the research went more into detail in examining the child's psychological understanding. The wide range of aspects which came into focus then were covered by the term 'theory of mind' (see also Whiten and Perner 1991, for a detailed summary and further literature). The aim of this paper is to add to the multifarious research that, originally, has its roots in Piaget's theory.

In this chapter, some aspects of children's general development which are not solely linguistic will be dealt with briefly. Insights gained from these general investigations form the background from which the direct focus on language emerged. Children's language develops in line with their psychological maturity. In the field of child language acquisition, it is therefore helpful to consider some achievements of psychological research.

#### **1.1. Piaget's theory and its immediate supporters**

One of Piaget's (1926; 1947; 1959) theories, which had great impact on scientific investigations, was that young children are not able to distinguish between own self and outer world. Rather, they assume unconsciously that everybody else inevitably thinks in the same way as they do themselves. They never try to convince others or to follow commonly accepted beliefs, and they never question their own beliefs. According to Piaget, children are born with this egocentricity and have to overcome the deficiency to be able to socialize. Piaget claims that this does not happen before the age of six or seven. Until then, one of the outcomes of children's egocentric thinking is that it is dependent on the immediate context: young children cannot generalize. An example is the way they relate equivalent objects to each other; the relation is only comprehensible for them through their own action of relating the objects.

However, Piaget does not state that children are purely egocentric, or that there is no significant development before children have reached their seventh year. He found, for instance, that from the age of 1;4 children are able to internalize actions so that they can imitate them, if not generalize, without being dependent on the immediate example. They are also confronted with the ideas and generalized truths of other people's minds, which they, to begin with, adopt unquestioningly. This is expanded and elaborated unconsciously up to the age of seven, when imitation is integrated into the child's conscious actions, controlled by their intelligence. Only then do they learn to question the products of others' minds.

That children's thinking up to the age of seven is characterized by egocentrism is also, according to Piaget, reflected in their language. Piaget concluded from his analysis that nearly half of his subjects' utterances served functions other than communication (Flavell 1963). These utterances are what Piaget termed 'egocentric speech'. Characteristic of this speech is that there is no communicative aim, no attempt to check whether the other is listening, neither any attempt to inform, persuade or make others do something. Moreover, there is no perspective taking or adaptation of the message to the listener's informational needs or input capacity.

Before children reach what Piaget calls the 'operative stage' at the age of seven, children communicate pre-cooperatively (Piaget and Inhelder 1966). From their own point of view, they may act socially; from an objective point of view they still act on the grounds of their inborn egocentricity. Although children may think that they are talking to the other, the observer recognizes that they are really talking to themselves, and that they are unable to establish a cooperative relationship to another person.

Children at this stage have difficulties considering different points of view of others. In what Piaget calls collective monologues, four- to six-year-old children talk to themselves rather than listen to each other. In particular, the explanations and discussions among children show that they have systematic difficulties in taking another's point of view. It is hard for them to make new information intelligible to others and to clarify misunderstandings. The children need much experience before they finally, in the operative phase, succeed in taking others' perspectives.

The idea that there is a stage at which children experience some kind of 'egocentric perspective taking' was taken up again by Oppenheimer (1982). He claims that up to the age of four, children do not yet realize the existence of subjective perspectives. Their notions of the outside world are 'general notions' without the recognition that they are truly subjective. Even though children realize that other people differ from themselves, they do not ascribe an individual way of thinking and making judgments to either the others or themselves. This is why they do not realize that people act on the grounds of these judgments. The next step, from the age of four, is that they know about different perspectives but do not realize that they can infer them and take them into account in their own actions.

In the Piagetian tradition, perspective taking is seen as

that process in which the individual somehow cognizes (...) certain attributes of another person. The attributes in question are (...) inferential rather than directly perceptible, for example the other's needs, his intentions, his opinions and beliefs, and his emotional, perceptual or intellectual capacities and limitations. (Flavell 1968:5)

This definition shows clearly that the kind of perspective taking which the author expects is fairly sophisticated. It will be shown below that the ability to take others' points of view can be differentiated into several independent aspects at different levels of sophistication which develop gradually (e.g. Völzing 1981; Billmann-Mahecha 1990). Piaget did not take this into account when he developed his theory, resulting in the high age of six or seven at which children, according to him, free themselves from their inborn egocentricity.

## 1.2. Egocentric speech?

When children talk audibly to themselves without addressing anybody, this need not necessarily be a proof for egocentrism. A different interpretation of this behaviour is that it occurs at times when the children are confronted with a problem (Lurija and Judowitsch 1982). The children acknowledge the situation, make a 'verbal copy' of it and reproduce associations of previous experiences in order to find a solution. Wygotski (1969) interprets this as the

use of language as a tool to find the answer to a difficult problem. Later on, this becomes internal speech. In other words, Wygotski claims that 'egocentric speech' should rather be understood as the transition from outer to inner speech.

Miller (1951) observes that there is little evidence to support the view that children talk to themselves a greater amount of the time. He found that two-thirds of their speech serve informational functions. It has been claimed that the transfer of information is at all possible only through the ability to take another's perspective (Völzing 1981; Billmann-Mahecha 1990). Miller suggests defining egocentricity to mark those moments when children talk about themselves, rather than to themselves. That would be 30-40 % of their speech; which is similar to the speech of grown-ups. According to Miller, Piaget's collective monologues may express a wish to feel closer to others.

A further interpretation of egocentric speech is that it is used for training purposes (Ramge 1976). Ramge claims that, in the case of the two-year-old child analysed by him, these training utterances are clearly distinguishable from speech directed to other people in that they are less explicit. Generally, there is no definite borderline between egocentric and social speech (Wells and Ferrier 1976). It sometimes happens that utterances are responded to which may originally not have been directed to the listener. However, to distinguish egocentric from social speech, Wells and Ferrier found that the former is usually lower in pitch and volume, and the intonation patterns of social speech are missing. Often, the subject noun phrase of the sentence is omitted.

As there are diverging methods of measuring or defining egocentric speech, the results of different investigations cannot be easily compared to each other. The fact that Piaget's results concerning egocentrism are called in question so often may be an outcome of the experimenters' different measures. The judgment of certain utterances as egocentric is very much dependent on the subjective interpretation of the investigator (Lindner 1983).

One device, for instance, which Piaget (1926) judges as belonging to egocentric speech is the repetition of a preceding utterance. Other authors challenge this view. Keenan (1974) observes that repetitions are generally directed to the listeners rather than the speakers themselves. Thus, they serve

social functions. In fact, there are various reasons for children to repeat utterances, just as for adults (Sinclair 1978).

### 1.3. Experiments challenging Piaget

Weir (1970) was one of the first to closely analyse the verbal behaviour of only one child. She describes the monologues which a two and a half-year-old child produces in the crib before falling asleep. At times, the child takes several roles of conversations which he heard before and now repeats for himself. Weir (1970: 146) points out that

in these linguistic sessions the child does not assume only the role of the student (...), he is the other participant in the language learning situation, the model, as well. (...) He can switch roles in this interchange readily - he asks a question and provides the answer, he performs a linguistic task and commends himself on the accomplishment, he produces a linguistic event and explicitly corrects himself.

This shows a different aspect of monologues than that which Piaget emphasized. In fact, they might only be egocentric in a very restricted sense. On the contrary, they reveal the extent to which the child has already learned to change perspectives.

From the 1970s, authors increasingly concentrated on children's developing perspective taking abilities rather than their egocentrism. The general notion that children's behaviour exhibits egocentric traits is hard to question; Piaget himself never claimed that children are only egocentric (see Völzing 1981). He merely focussed on their egocentrism in contrast to their later development, when they manage to take others' views into account.

Long before seven years of age, children can differentiate between different conversational partners (Shatz and Gelman 1973). In a task in which four-year-olds were to describe a toy to a two-year-old, they used shorter sentences than towards grown-ups, as well as fewer relative clauses or coordinated main clauses. They used more expressions to interest the child. With other four-year-olds, they used the same kind of language as towards adults.

Children also learn to listen to other people's speech and respond in a relevant way from an early age. Keenan (1974) observes that her twin boys (2;9 at the onset of research) generally attend to each other's utterances. Their early morning conversations often consist of a number of coherent turns in which they focus mainly on the form of the previous utterance. One of their conversational devices is to pick up a sequence of sounds or a constituent and repeat it with or without modification. Keenan judges only about 17 % of the boys' language to be egocentric. Although children do not always manage to process utterances at all levels, they still show the ability to demonstrate that they listen to the interlocutor, and that they themselves have been understood correctly (Keenan and Klein 1975). There is no fundamental difference between children's and adults' language, as the concept of egocentrism would suggest.

From the age of 3;9, children are capable of adjusting their speech to different listeners such as adult, peer, baby, and baby doll (Sachs and Devin 1975). Towards younger listeners, there are some characteristics in their speech that remind of Motherese. Also, they manage to take the role of a baby by changing and simplifying their speech. Later, similar experiments with corresponding results were carried out with children of the same age (Perner and Leekam 1986), and with even younger children (Dunn and Kendrick 1982).

Even before the age of three or four, children start developing their role taking abilities (Ramage 1976). Ramage claims that the acquisition of language is nearly impossible without some rudimentary understanding of symbolic role taking. Long before their third birthday, children use different linguistic variations and develop an understanding for linguistic norms. Ramage concludes that the ability to take the perspective of another person develops rapidly during the third year of life.

Most authors during the 1970s explicitly view themselves as opponents of Piaget's theory, claiming that their findings disprove the concept of childhood egocentrism. However, the main difference (apart from several points of criticism which will be dealt with below) is the aspect which is focussed upon. Piaget was interested in the differences between childhood egocentrism and the sophisticated perspective taking abilities which seven-year-olds exhibit; while later authors focussed upon the similarities and on those steps which lead to

such an outcome. It seems that Piaget's theory served as a trigger for a barrage of experiments in spite of having been misunderstood by many investigators.

#### 1.4. Criticism of Piaget's methods

The result of most papers, independently of their perspective, is the insight that role-taking abilities are acquired gradually, one step after the other. The negative results of previous studies involving very young children may have come about not because of their inability to take another's perspective, but rather because the task was too complex (Urberg and Docherty 1976). Thus, the classic experiments carried out in the Piagetian tradition led to an underestimation of the social competence of the child. If the task is simple enough and not too abstract from the situational context, even three-year-olds show role-taking abilities (Valtin 1982). This observation is in complete agreement with Flavell's (1968) findings, who follows Piaget's tradition. In analysing various aspects of role taking, he acknowledges several nonegocentric abilities in 3-year-olds. He also considers spontaneous data, finding that parents account for successful as well as unsuccessful attempts at role taking. The importance of the everyday context and the parents' impressions is, later, confirmed by other authors (Billmann-Mahecha 1990).

Piaget's method of confronting children with problems and questioning them directly has been criticized as too one-sided (Riegel 1980). Piaget never used situations in which the children asked him instead, or interacted with other children. In addition, Riegel points out that conversations among grown-ups also show egocentric tendencies, resulting in unsatisfactory communication. They, as well as children, sometimes have difficulties in interpreting the attitudes of other people correctly (see also Völzing 1981). If children manage to handle many communicative events adequately, this proves that it cannot be a biologically caused imperfection which sometimes keeps them from understanding other people's points of view. Völzing suggests that the fact that they have not gathered enough experience and knowledge about the world and about other people is enough to explain those situations in which children seem egocentric. The Piagetian view, in contrast, suggests that the brain has not yet developed fully so that children simply have to wait until they are mature enough.

Another point of criticism concerning Piaget's work is that the children may not have realized that there was a problem at all, which they were to solve (Langeveld 1984). The relaxed atmosphere that Piaget created invited them to simply tell 'stories' instead. Piaget interpreted the results as indicating the experience of a solution, without, according to Langeveld, a recognition of the problem. It is not enough to make sure that the child understands what the experimenter wants. The absence of affection and emotion in Piaget's work makes the interpretation of egocentrism problematic, if not impossible.

A further consideration is that children tend to answer questions about words as though they were about their referents (Wellman 1990). This does not mean that they cannot distinguish between real things and mental entities. Piaget's findings that three-year-old children have no idea about their own or others' minds may be the result of a coding that took utterances such as 'dreams are smoke' too literally. Wellman (1990:188) believes that

by age three children are engaged in the same everyday-psychological enterprise as are adults - construing people as having minds and understanding action by the internal mental states of the actor. More specifically, it seems clear that by three years of age, children understand the basic ontological distinction between mental states and entities versus physical states and objects.

Wellman points out, however, that children's use of mental terms at age three or four is not like adults'. It develops substantially until the age of nine. The correct use of the term think, i.e. to talk about a person's beliefs, does not emerge before late in the third year of life, although children use the term in other ways before that.

The Piagetian analyses may have been influenced by the degree to which children at that time were allowed to act and talk freely in front of adults (Völzing 1981). In this respect, there has been much change since the 1920s, which may be one reason for the differing results of our time concerning perspective taking. Völzing concludes from his own data that children are generally capable of interacting socially from the age of 2;2 or 2;9 years. They are, in fact, much more socially than egocentrically oriented. The dialogues between children, for instance, show their ability to develop meaningful arguments.

In the literature of the 1980s, the impact of Piaget's theory gradually loses its force. There is a general agreement to the point that children do not stay altogether egocentric up to the age of six or seven. Rather, perspective taking is a skill that is learned gradually. Today, attention has shifted away from Piaget to the assumed development of a 'theory of mind'. When, and how, does the child develop a 'theory', or whichever term may be preferred, that other people have minds? How is this reflected in the child's speech? These questions will be dealt with in more detail in the next chapter.

## **2. The child's 'theory of mind' from age two**

This chapter will deal with the various aspects in which children's 'theory of mind' is revealed in their growing linguistic knowledge. I will summarize the most relevant findings in the literature from the 1970s up to now.

### **2.1. Perspective taking and the principle of relevance in communication**

In order to communicate, the interactants must focus on the same discourse topic. To achieve this, speakers must secure the listeners' attention, and inform the listeners about the topic of their interest (Keenan and Schieffelin 1975). Children manage to meet these requirements from a very early age. Even in child-child interaction, the referent is identifiable by the listeners. Already very young children wait for the listeners to confirm that the relevant referent is identified. In cooperative acts such as these, the children's ability to monitor other people's understanding is revealed. If children fail to observe the principle of relevance, this may have reasons other than lack of understanding. They have a more limited attention span, and they are easily distracted. Sometimes they do not understand the point of the preceding utterance, or they have not attended to it.

The beginnings of coherent linguistic interaction can be detected even before the children have acquired the words needed to keep up a conversation on a purely linguistic basis. The ability to take turns in order to cooperate and coordinate the utterances is developed already from the age of 18 months (Garvey 1977). Even before the children have reached the two-word stage,

they learn to connect their utterances to those of others in a structurally meaningful way (Shugar 1978). The ability to cooperate in linguistic interactions shows that the children do not ignore others' behaviour and intentions in talking. In reacting appropriately, they take others' communicative goals into account.

Coordinated interaction should not be viewed as restricted to completely harmonious, conflict-free events. Both games and conflicts are examples of coordinated action, as the partners concentrate on a shared topic (Schmidt-Denter 1988; Garton 1992). Children's perspective taking skills, as reflected in their prosocial behaviour, are equally needed to compete with others and to find out about others' strategies. In social interaction, children learn to communicate effectively in a continuum of conflict and agreement. The sharing of perspective in focussing on a specific task or issue helps children in this process.

The ability to follow the principle of relevance, or to share an effort to focus on a communicative goal with an interlocutor, develops gradually. By age four, children have learned how to adjust their communication to the listener's knowledge and state of belief (Perner and Leekam 1986). Leekam (1993) observed that this acquisition is necessary in conforming to the principle of relevance appropriately. At the same age, children are capable of adjusting their speech according to the age of the listener (Sachs and Devin 1975).

## 2.2. Conversational and communicative skills

From a very early age, children show abilities to coordinate their speech with that of their partners. The question arises whether they do so because they have learned to take the other's perspective, or because they merely imitate other people's linguistic behaviour. Although it seems that children communicate effectively in acting according to the partner's expectations, it is conceivable that the skills they exhibit are primarily conversational (i.e. they learn to maintain a conversation in a socially acceptable way) rather than communicative (i.e. they learn to express their thoughts and emotions and exchange them with others). In this view, children imitate others in order to attain social ends. Moreover, they might learn language for the sole reason that they are functionally motivated (Halliday 1978).

From a theoretical point of view, it seems only natural that children's discourse is predominantly manipulative (Givón 1984). There is no need for an exchange of information, as the background is shared by all participants. The discourse topics are present, and the participants share a high degree of empathy. Adult communication is based on the informative speech act because the opposite is true. As young children seldom need to inform others, they might use language primarily as a tool for reaching their personal goals.

However, other authors claim that children have less egocentric aims in using language (Bretherton, McNew, and Beeghly-Smith 1981). They might interact in order to learn about others' thoughts and feelings, and to express their own, or, in Bretherton et al.'s terminology, in order to meet others' minds. Bretherton et al. claim that, in communicating intentionally, even nine-month-old infants must have realized to a certain degree that they, and their partners, possess internal states, and that their minds can be interfaced with that of a partner. The partners share a framework of meaning, and they share an interfacing medium: language or conventional gestures. The infants, however, are not aware of any of this. According to Bretherton et al, they act and communicate on the grounds of their unconscious knowledge that other people have minds. This knowledge is expanded when children experience being misunderstood.

The debate on whether children interact on the grounds of conversational or communicative skills was taken into focus in a study by Shatz and O'Reilly (1990). In their study, the children invested more energy in clarifying misunderstandings when they wanted to achieve some goal than they did when they merely asserted something. This was interpreted to suggest that the children do not necessarily have an understanding of others' thoughts. Rather, their first and foremost aim is the manipulation of others to achieve their goals. If they manage to react appropriately to requests for clarification, this may be the outcome of their growing conversational skills, following conventional sequences of discourse. In order to respond correctly to requests for clarification, one need not understand what is going on in the other's mind.

Golinkoff (1993) designed a different study to answer to Shatz and O'Reilly's challenge. She concludes from her own findings that during the second year of

life, children learn to communicate for the sake of the 'meeting of minds'. In most cases, the children did not achieve any goal when answering to requests for clarification. Children simply want to be understood. Additionally, children's early awareness of others' emotions should be taken into account in the discussion on the reasons why children communicate.

According to the findings of Tomasello, Farrar, and Dines (1983), even two-year-old children correct their own speech in anticipation of misunderstandings. If this is the case, they are sure to have some understanding of other people's minds. Marcos and Bernicot (1994) found that children have various ways of reformulating requests before age three, depending on the listener's response to the requests. Although children (aged 1;6 to 2;6) have only a limited understanding of other people's minds, they are capable of detecting the relevant cues in communication to which to react cooperatively. The authors conclude, sensibly, that both communicative and conversational skills are necessary to act appropriately in different reformulation situations.

### 2.3. Stages of psychological development

By now, there seems to be a general agreement to the point that children, from the beginning of intentional communication, have a growing understanding of other people's minds (Bretherton and Beeghly 1982). Various authors have been concerned with the diverse steps in the psychological development of this understanding. Children's linguistic development reflects the growth of their psychological maturity to a certain degree. In order to appreciate the significance of language during this process, a short overview of relevant recent research in the more general field of psychology will be helpful.

Children have been claimed to exhibit the first signs of psychological understanding as early as six months of age. At six to eight months, children are said to learn to identify with and, at the same time, differentiate between others and themselves (Tomasello 1995a). Until nine months of age, they demonstrate intentionality in their own actions. By the end of the first year, they understand others as intentional agents (see also Tomasello 1995b).

At the age of nine months, infants start playing with others' intentions and expectations. They engage in a broad variety of actions such as invitation to

appreciation, games, or interaction, or the performance of specific actions which amuse others (Reddy 1991). These actions suggest that even nine-month-olds have some rudimentary understanding of what goes on in others' minds. Before they reach their first birthday, infants develop their understanding to the extent that they can differentiate between how siblings, peers, and related grown-ups will react to their behaviour (Lamb 1981).

By age two, children's 'theory of mind' development reaches more sophisticated stages. First, they focus on people's desires, later on their beliefs as the driving force of behaviour (Wellman 1990; 1991). At age two, children understand that human actions are caused by their emotions and desires. Later, they develop an understanding of the importance of beliefs: whenever people have no direct access to some aspect of reality, they act according to what they believe to be true or false, not according to reality or according to what they desire to be true. As to the average age at which this understanding is acquired, there are greater discrepancies in the literature. Different experimental methods and different interpretations of behaviour create an age range from two years (e.g., Chandler, Fritz, and Hala, 1989) or three (e.g., Bartsch and Wellman, 1989; Mitchell and Lacohee, 1991; Moses, 1993; Siegal and Beattie, 1991) to four years of age (e.g., Moses and Flavell, 1990; Sodian, Taylor, Harris, and Perner, 1991). In between the stages of 'simple desire psychology' (children's understanding that people act on the grounds of their desires) and 'belief-desire psychology' (their understanding of the additional importance of people's beliefs), children may know about the fact that people can be influenced by their beliefs, but still view their desire as most central (Bartsch and Wellman 1995; Bartsch 1996). In this stage, children use terms denoting beliefs but still do not refer to them to explain actions (= 'desire-belief psychology').

By age five, children have acquired the key elements of adult everyday psychology (Meltzoff and Gopnik 1993). They understand that other people have internal states analogous to their own, such as beliefs, desires, intentions, and emotions.

The fact that others' internal states are approachable by analogy has caused a debate between researchers, covered under the terms 'simulation theory' (ST) (e.g. Harris 1992; 1993) versus 'theory theory' (TT) (e.g. Wellman, 1990; Perner, 1991). ST proposes that children take others' perspectives through

increasingly sophisticated simulation processes, i.e. by imagining themselves in another person's place. TT, on the other hand, holds that children's understanding of the mind resembles a scientific theory. It seems that one way to reconcile the two views is the suggestion that simulation processes help children understand others' mental states, but they are theory-driven: they are a means to advance in the development of their theory (Bartsch and Wellman 1995). Simulations will not perfectly represent another person's mental states, but they are limited and framed by the state of the child's theory. These same limitations account for the fact that children up to a certain age are unable to correctly remember or interpret their own previous beliefs. Ruffman (1996) proposes that children may use simulation in understanding emotions, but rarely beliefs.

#### 2.4. Pretend play

Children's capacity to make correct assumptions about others' beliefs and to reason about hypothetical situations is revealed in their pretend play, emerging during the third year of life (e.g. Wellman 1990; Astington and Gopnik 1991). Pretend play at age two is an early step in the development of a 'theory of mind'. It emerges soon after children have acquired the ability to regulate interactions with others (Gómez, Sarriá, and Tamarit 1993). A study designed to reveal the relationship between children's abilities at pretend play and their understanding of others' beliefs showed that both aspects in child development seem to be connected to a high degree (Astington and Jenkins 1995). Growing linguistic competence in itself does not explain this relationship.

However, children's pretend play should not be confused with functional play, as the child may simply be demonstrating the ability to use the objects as they are conventionally used (Leslie 1987). This is especially the case with children who share pretend games with older children. They need not be aware what pretense means. This awareness emerges only when the child is capable of distinguishing information from pretend contexts as opposed to information from serious contexts. This ability seems to emerge shortly before the second birthday. With this, the child can be viewed as having developed a (rudimentary) 'theory of mind'.

## 2.5. The role of language

Lack of linguistic competence is no proof for the nonexistence of a 'theory of mind' (Chandler 1988). Children may possess such a theory without being aware of it, and without exhibiting as much by their utterances. The only prerequisite for ascribing a 'theory of mind' should be that this assumption is a better explanation for one's actions than any other theory. However, children's use of language, at different linguistic levels, is the researcher's most significant source of information about their developing 'theory of mind' (see Tager-Flusberg 1993). Insights from linguistic research are therefore invaluable for the understanding of children's emerging social abilities. Probably the most promising aim of analysis here is children's developing use of inner state vocabulary.

### 2.5.1. Use of internal state language

In the analysis of children's use of mental terms, one has to consider the restrictions of such usage (Bartsch and Wellman 1995). Especially at the start of their acquisition, terms may be used without their corresponding conceptions, such as think without a true understanding of beliefs. It is also conceivable that children do not reveal their understanding through their language use, if they seldom or never talk about mental states; or that they use different terms that will not appear in a statistical analysis. However, some general conclusions can be drawn from research in this field so far.

Late in the second year, children acquire their first mental state terms, which makes their 'theory of mind' explicit and observable (Bretherton and Beeghly 1982). They soon learn to use them for nonpresent states as well. The mastery of internal state language at 28 months is dependent on the child's general language competence, not on sociological aspects. Many children in Bretherton and Beeghly's study told their mothers not to look or listen, which may tell something about their emerging self-consciousness. The authors conclude that

the ability to analyze the goals and motives of others, as these interlock with the child's own, is already fairly well developed in the third year. We have evidence that 28-month-old children interpret their own and other people's mental states, comment on their own or someone else's expected and past experiences, and discuss how their own or someone else's state might be changed or what gave rise to it. Children tend to

speak of their own states before they label those of others, but the lag is relatively small. Only a minority of a child's internal-state words was used exclusively to refer to self. (Bretherton and Beeghly 1982:919)

Children have been found to comment on or explain the feelings of self and other already at the age of 18 months (Bretherton, Fritz, Zahn-Waxler, and Ridgeway 1986). Which aspects of their everyday life may be crucial in stimulating such an early understanding? It is conceivable, for instance, that others' experiences are made available to the children by analogy when children imitate (Bretherton and Beeghly 1982). Imitation is part of children's everyday experience from a very early age, long before language emerges. By imitating, children have taken the first step to gain insights out of simulation processes (see above), which, later, may be performed mentally.

Children's cognitive development is characterized by systematical changes (Olson, Astington, and Harris 1988). First, the ability emerges to disconnect representations from things. Children use this from around two years of age for their pretend play. At the same time, they acquire the vocabulary needed to express emotion and perception in themselves and others (Astington and Gopnik 1991; Wellman 1991).

Second, a set of concepts for representing mental activities such as thinking, dreaming, imagining and pretending (second to fourth year) is developed. With the help of their acquisition of cognitive terms, children can contrast mental states with reality. Older two-year-olds can make predictions about actions if they are based on desires, but not if they are based on beliefs. They can also judge a person's emotion appropriately if they know about the person's goal and the outcome.

Third, the children's understanding of mental activities has developed such that they manage to predict and explain actions premised on false beliefs and other things discrepant from reality (between age three and four). Sometimes the children express that there is a difference between their own desire (or belief) and others' (Wellman 1991).

One larger study which deserves further attention here was carried out by Bartsch and Wellman (1995). These authors analysed extensive language samples of ten children with respect to their internal state language. Their

results are supportive of the insights from previous research concerning children's successive stages of simple desire psychology, then desire-belief psychology, and finally belief-desire psychology. The first mental state terms which occur with some reliability are terms denoting desire; later those denoting thoughts and beliefs. Individually, children who talked mostly about their own desires later showed a tendency to talk mostly about their own beliefs. The study revealed that the developments of desire and belief understanding seem to be linked in some way. The nature of this link, however, is as yet unresolved. Variations across individuals were, in the study, rather limited.

By two years of age, the children actively used the terms want, wish, and care in contexts where it was beyond doubt that they truly related to psychological states of desire in themselves and others. Bartsch and Wellman claim that, at that age, children understand that desires as well as the desirability of certain objects may differ between people, and that desires may or may not motivate actions.

Shortly after their second birthday, the first occurrences of think, know, and wonder were noted. Mostly, these belonged to conversational turns of phrase, repetitions, and idiomatic phrases. Genuine references to mental states in several variations, including contrastives, emerged shortly before their third birthday. The authors conclude that at age three, children understand that people represent the world or, alternatively, a fictional view of the world, in their minds, and that such a representation can be close to or far from reality. This understanding is applied to both themselves and others. Children's explanations and arguments, as analysed separately in Bartsch and Wellman's study, reflect their understanding of the mind; beginning with the notion of desire and then taking beliefs into account.

Naturally, the child's 'theory of mind' is still not fully developed. Further steps to take will be to understand perceptual and linguistic ambiguity, and the relativity of knowledge. As Wellman (1990: 317) observes:

As impressive as it is, three-year-olds' initial belief-desire theory is still far from that of adults because of its copy understanding of belief, hit-or-miss view of misrepresentation, and container-view of mind. All in all, it fails to honor an immensely important aspect of an adult theory of mind: the inimitable interpretive aspects of mind and hence the constructive relation between all minds and reality.

### 2.5.2. Social implications

Settings of high emotional involvement, such as disputes and arguments, are especially revealing concerning the state of children's 'theory of mind' (Dunn 1991). In the home context, events occur in which children show empathetic and cooperative behaviour, or discuss other people, engage in fantasy play or jokes, or respond to the interactions between others. Emotional involvement seems to provide a special potential for learning to understand others. In addition, family discourse offers the verbal background for understanding. At home, even two-year-olds were found to make self-other social comparisons (Dunn 1992). In a laboratory, in contrast, young children have difficulties in answering questions that would reveal the extent of their skills in influencing others and in resolving conflicts. A greater amount of children's abilities can be observed only if the researcher concentrates on discourse instead of collecting isolated utterances. At home, children are likely to be emotionally involved in the ongoing discourse, which adds to its importance.

By the age of 24 months, children use their ability to talk about emotional states for a range of social functions (Brown and Dunn 1991). In order to analyse these functions, the context in which children use internal state terms needs to be taken into account (see also Dunn 1991). The fact that terms denoting thoughts and beliefs are acquired later than emotion and desire terms may be a consequence of their being less salient for the children in conversations in the family.

In Brown and Dunn's study, six children were observed during their third year. The aim of analysis were naturally occurring conversations about inner states in which the children took part with other family members. The children, in agreement with the above observations, used emotion and desire terms from their second birthday on. The analysis of the context in which these terms

occurred showed that they were used mainly to talk about the self. By 36 months, children exhibited much more interest in the feelings and desires of others. All terms were used in a wide variety of contexts, such as talk about past events and giving reasons for actions. Mothers increasingly discussed others' thoughts and feelings with the children. During their third year, the children acquired a broader interpretation of the concept of affect regulation. There was more teasing and comforting, the more effectively so with increasing linguistic knowledge. The authors conclude that the ability to talk about inner states has important consequences for children's social relationships. Discussions about previous events help the children understand the inner states of others and their reasons for acting in a special way.

A frequent use of mental state terms in child-friend and child-sibling dyads is positively related to cooperative interaction between the partners (Brown, Donelan-McCall, and Dunn 1996). One implication of this link is that those children who refer to mental states find it easier to resolve differences of perspective or desire when playing. These same children did better on false-belief tasks as well. In short, children's 'theory of mind' development has social implications, and it is influenced by their social interaction with siblings and friends.

A recent study by Brown and Dunn (1996) reveals that children who show a high degree of emotion understanding at age three still do so at age six. Positive interaction with siblings is related to this understanding. The authors conclude that the nature of sibling relations, especially if the siblings are emotionally close, is likely to persist throughout childhood. Furthermore, family habits concerning discussions of emotional states, their inclination to talk about reasons, may be an important part of a child's social environment which lasts through several years.

Various social factors play a role in children's developing 'theory of mind'. Studies were carried out in Cyprus and Crete, societies in which, unlike Britain or Germany, also more distant relatives such as aunts or grandparents typically play a role in the children's education (Lewis, Freeman, Kyriakidou, Maridaki-Kassotaki, and Berridge 1996). It turned out that all of these may be a part of the children's developing understanding of the mind. Siblings, however, play a significant role here. The authors point out that

toddlers become increasingly immersed in an effort to understand others, just at a time when they develop skills, like the use of contrastive verbs in everyday language, which enable such understanding. (Lewis et al. 1996: 2945)

### 2.5.3. Perspective taking and word learning

In the beginning of the current decade, some interest emerged as to how children acquire new labels, and in how far their perspective taking abilities come into play here. In Baldwin's (1993) study, it was tested at which age infants become aware that a named object is not necessarily the one they are focussing upon. From age 1;4, children participate actively in sorting out the reference of a new word, using the speaker's nonverbal cues.

In order to comprehend the correct meaning of new words, joint attention is necessary (Tomasello 1995b). At times, the attention needs to be shifted, revealing an understanding of differing points of view. In fact, language is often used to manipulate other people's attention. Tomasello observes that children tend to ignore unintended referents in the process of learning new words. Furthermore, they even manage to share attention to a specific aspect of the referent with a conversational partner.

When the child holds up a ball and says 'Wet' or 'Blue' or 'Mine' or 'Roll', she or he is assuming a shared focus of attention on the ball and then going further to ask the listener to attend to some specific aspect out of other possible aspects of that ball. Predication thus requires some notion that other persons can intentionally modulate their attention in response to linguistic and nonlinguistic means of communication, often while not changing their visual orientation at all. (Tomasello 1995b: 118)

Recent studies by Tomasello and Akhtar (1995); Akhtar, Carpenter, and Tomasello (1996), and Tomasello, Strosberg, Akhtar (1996) confirmed that children use pragmatic cues to determine which referent is meant by a new label. In the 1995 study, two-year-olds were able to determine whether the adult intended to name a novel object or a novel action. In word learning, there is always some context which helps the child decide what is meant. At age two, children understand that adults use language to name things that are novel to

the discourse context from the speaker's point of view rather than their own (Akhtar, Carpenter, and Tomasello 1996). This proves that they have some ability to take another's perspective, as this was the only cue they had in the study to determine the referent of a new word. The finding that children use a wide range of pragmatic cues suggests a deep and flexible understanding of other people's intentions, which is constitutive of language acquisition.

Tomasello et al. (1996) showed that children monitor the adult's behaviour to sort out the correct referent already at the age of one and a half years. They are even able to learn a new word by making correct judgments about the adult's reactions, when the referent was never visible to them after the word was uttered. As these children were only at the beginning of language acquisition, it is suggested that the social-cognitive skills exhibited here are needed from the start. The authors conclude that

children as young as 18 months of age understand the behaviour of others intentionally, that is, in terms of the results it is designed to achieve. This is the first step toward a full-blown theory of mind in which the behaviour of others is understood mentally, that is, in terms of the thoughts and beliefs that underlie it. (Tomasello et al. 1996: 175)

By now, it is widely accepted that children develop their own 'theory of mind' from a very early age; rudimentarily, as some authors claim, they do so even before the end of their first year. This development is deeply connected with their growing abilities to communicate in general, and, more specifically, with their increasing linguistic sophistication.

### **3. The influence of the sibling**

This chapter will deal with the interaction between siblings and their influence on each other concerning the development of their perspective taking abilities. The mutual influence of siblings begins at a very early age, during the prelinguistic phase. The infant's turn taking skills before learning words are practised not only in interaction with the mother, but also with the older sibling, who reacts differently to the infant. Similarly, later instances of interaction in the family are characterized by various features which distinguish them from the interaction between mother and child alone. Several

consequences of sibling interaction, as distinguished from maternal interaction with the child, are presented in this chapter.

### 3.1. Multiparticipant conversation

Children's skills at participating in verbal conversations and their turn-taking abilities develop during their second year of life. Investigations of interactions within families with more than one child revealed that even 19-month-old infants can participate in triadic verbal and nonverbal interactions (Barton and Tomasello 1991). This ability increases considerably by two years of age. The infants listen to the conversations between their mother and the older sibling and then bring themselves into play. In fact, they join ongoing conversations more often than they initiate a new topic. Sharing attentional states with other family members is especially helpful for young children in participating in the conversation. They respond to questions and statements directed to themselves as well as to others. This observation confirms that they attend to speech not addressed to them.

Children who grow up in a family context containing various speakers have opportunities to learn things about language which other children lack. In a study by Dunn and Shatz (1989), the intrusions of two-year-old children into conversations between mother and sibling were analysed. The amount of intrusions grew considerably during the third year of life, and they contained increasingly new and relevant information which was responded to by the other family members. Although children were equally likely to talk about themselves at the beginning and the end of the study, they showed a growing ability to turn the conversation towards themselves by relevant intrusions. Their awareness of others' interests was reflected through the fact that they provided them with new information as part of an ongoing conversation, instead of simply interrupting the others with remarks about themselves.

### 3.2. Understanding of emotions

When siblings talk to each other, they are increasingly concerned with their own feeling states as well as those of their sibling. A study by Dunn, Bretherton, and Munn (1987) showed that children's understanding of others'

feelings grows considerably during their third year of life. They use this ability in their interactions with mother and siblings. In addition, the study showed a dependency between the amount of discussions between mother and older sibling about feeling states when the target child was 18 months old, and the children's internal state talk at 24 months.

In Dunn et al.'s study, references to emotions were not merely used as conversational routines. Rather, they were a symptom of the wish to communicate about the internal states of themselves and others. The children participated actively in discussions about the cause of feeling states, asking appropriate questions about reasons and offering suggestions. The use of mental state terms in pretend games with the sibling also implies that the children exhibited communicative rather than routinely conversational skills. The children realize that others have internal states similar to their own, and that this understanding can be shared through language.

Children under four years of age more often talk about the younger sibling's internal states than about their own (Howe 1991). The most frequent times at which they talk about emotions, wants, and abilities, are during shared play and conflict between the siblings, and when the mother is absent. Howe found a significant correlation between the children's success at cognitive tasks measuring their perspective taking abilities, and their references to internal states towards their siblings. Those children who showed a high degree of affection toward their sibling also talked more frequently about internal states than the others (see also Howe and Ross 1990). Possibly, the ability to use internal state language in their disputes and play with prelinguistic siblings helps the children to regulate the interaction, and to build up a shared understanding of their world between them. A high proportion of the children's remarks about the toddler were directed to the mother, about one quarter to the sibling.

Another study (Howe et al. 1990) revealed that positive interaction between the siblings in the laboratory was associated with family discussion of internal states. The ability to take another's perspective as well as the habit to talk about the siblings and their feelings seem to promote a friendly sibling relationship. The mother's influence comes into play in that discussions about the sibling's feelings help the child to take the younger one's perspective.

Children's perspective taking abilities become visible in their teasing and justifying behaviour, and when they try to enlist adult support (Dunn 1989). Conversations within the family involving young children are mostly context-bound to a high degree, and they are marked by a strong interdependency of language and emotions. These features make the conversations easier to follow for a child who is not yet able to understand every single word. Children show interest in the feelings of other family members from a very early age, and they soon express their concern in their language. However, Dunn observes that children's motivation to comfort, or share something with, their siblings, after having recognized their distress or needs, does not seem to be very high.

Before their third birthday, children manage to justify themselves in their disputes with other family members by referring to their own or others' feelings and to social rules (Dunn and Munn 1987). Although their own wants come into play in most of all cases, they use reference to social norms especially in their disputes with siblings. Mothers and older siblings increase the amount of their justifications towards the children when they are between 18 and 24 months old. The increase in the children's justifications begins at age two. During their second year of life, children's abilities in teasing and supporting as well as prohibiting develop considerably (Dunn and Munn 1985). They learn to talk about transgressions of family rules and react differentially to others' emotions as well as discussions about conflicts in the family.

The amount of sibling conversations about feelings increases between 33 and 47 months (Brown and Dunn 1992). Older siblings become increasingly important conversational partners to the children during that time. Their affective relationship is reflected in the language they use. The mother and the sibling are treated in distinct ways. At the end of Brown and Dunn's study, the children's utterances were less centered on themselves and their wishes and needs. Instead, they had developed a considerable ability to interact in a reciprocal manner.

### 3.3. Adaptation of speech

In their everyday interaction, siblings learn to adapt to each other and to communicate effectively according to the sibling's needs. Already two-year-old children have been found to make appropriate adjustments in their speech when talking to their 14-month-old siblings (Dunn and Kendrick 1982). They use communicative devices appropriately in playful as well as prohibitory contexts. The individual differences between the children reflect the emotional relationship they have towards their siblings. In Dunn and Kendrick's study, all children made clarification adjustments. Those children who had a close relationship to the younger sibling, which was reflected in their nonverbal prosocial behaviour, also used more questions and more affective-expressive features such as diminutives and playful repetitions.

Children's ability to interact with other people in consideration of the others' needs is also reflected in the way they sing, and in specifically altered features of their speech. From the age of three years, children alter their singing style when their infant sibling is present (Trehub, Unyk, and Henderson 1994). They sing at higher pitch and with a different vocal quality. These findings correspond to analyses of the speech that preschool-age children direct to infants (Tomasello and Mannle 1985). Young children talking to prelinguistic infants use a higher pitch level as well as some features of Motherese, such as a relative short mean length of utterance, and a high proportion of repetitions.

However, preschool-age children are not as adept at adjusting to younger siblings as mothers are (Mannle, Barton, and Tomasello 1991; Barton and Tomasello 1994). The extensive use of conversation-maintaining devices which mothers employ lacks in sibling language. The children ask fewer questions and are more directive than responsive towards their infant siblings. Preschool-aged children talk less to their siblings than mothers, and the conversations are shorter. They rely more on nonverbal exchanges and provide more information than mothers do (Mannle et al.). In a previous study, however, it was found that preschool-aged children provide their infant sibling with less nonverbal information than mothers do (Tomasello and Mannle 1985). The different results may have come about by differing coding procedures, or by different contexts of the studies.

Older siblings fail to repair misunderstandings in twice as many cases than the mothers (Mannle et al. 1991). The authors suggest that preschool-aged children may be less interested than mothers in maintaining a conversation with the sibling. Another possibility is that their communicative competence at that age does not allow them to be more effective conversational partners, as they are not yet able to take the infant's perspective to a sufficient extent. They have not yet fully realized the infant's linguistic and cognitive limitations.

### 3.4. Imitation or perspective taking skills?

Although the older sibling's ability to adjust their speech style towards infants is valued differently by the various authors, there is a general consensus that preschool-aged children do in fact adapt their speech to a certain degree to their sibling's needs. However, the question of whether they do this because they imitate their mother's style of interaction with the child, or because they have realized the infant's cognitive limitations to a certain degree, does not seem to have been addressed directly so far. Instead, most authors seem to be convinced a priori that adaptations are a proof of more or less mature perspective taking skills. Dunn and Kendrick (1982: 592) conclude from the low number of direct imitations in their sample that

in interactions where it is important for the child to make himself understood by the baby, he adapts his speech by clarifications and/or by affective expressions of his own, in a generative fashion, rather than by simple repetitions of the mother's speech.

Moreover, they conclude from their findings that the children's adaptations are to be explained solely on the grounds that they have understood the nature of the infant's cognitive and linguistic abilities as distinguished from those of their mothers and other adults. They point out that preschool-aged children often utter beliefs about their younger siblings and their limitations, and that their pragmatic understanding of the differences between infants and adults is also reflected in their actions. The individual differences between the children in the study indicated that the affective relationship between the siblings plays a role in determining the style of speech in which the infant is addressed, in the same way as the communicative goal of the utterance does.

The question of imitation, however, is yet to be considered. As Ferrier (1978) points out, imitation might be understood in a wider sense including not only direct repetitions, but general formats of speech or behaviour. This topic will be addressed specifically in the second part of this paper.

### 3.5. The sibling's influence on the infant's development

The sibling's behaviour towards the infants is reflected in the way the infants themselves react verbally and nonverbally in the interaction. Before they have reached their first birthday, infants have learned to expect different behavioural styles from siblings, peers and parents (Lamb 1981), and they act accordingly. Shortly after their first birthday, infants use conversation-maintaining devices when interacting with their mothers, but not with their siblings (Dunn and Kendrick 1982). The infants' behaviour towards their mothers in vocal games reveals their considerable effort to hold the mother's attention. According to Dunn and Kendrick, such an effort could not be detected in interacting with the older sibling. As a result, the conversations between the siblings were short and contained few changes of partner turns. However, other studies did not confirm this finding. In Mandle, Barton, and Tomasello's (1991) study, the infants' conversational style did not show any differentiation between mother and sibling.

The language young children hear is different when older siblings are around (Woollett 1986). Mothers are more likely to talk to older children about internal states and events outside the immediate context. Additionally, they talk about the younger child, giving him the chance to hear himself referred to. The older siblings themselves model for the infants their techniques in maintaining the mother's attention, such as asking questions. In fact, it has been claimed that the language of later-born infants is different from that of firstborns of the same age (Jones and Adamson 1987). They use more social-regulative language, especially in those cases when the siblings are around. The fact that the siblings themselves address the children mostly in social-regulative language indicates that children's language mirrors some features of the language of their siblings. This effect may or may not result from conscious imitation.

Sibling interaction, as is generally agreed, promotes perspective taking abilities. The different and more challenging communicative style might help the infants in developing their communicative competence (Barton and Tomasello 1994). The Bridge Hypothesis (Mannle and Tomasello 1987) posits that sibling interaction creates a communication pressure on the infant, as the older child is not as skilled as the mother to adjust to the infant's linguistic level. This pressure has the effect of broadening the younger children's communicative skills so that they are better prepared to talking to peers or strangers. Older siblings have more difficulties in focussing on the same object as the child and expressing this verbally, as well as responding to the child's utterances with relevant remarks. If the input contributed by the sibling is incomprehensible to the child, then it is simply not processed. But in those cases when the child is able to understand the sibling's utterances by making some more effort than usual, this could be a crucial experience for the younger one. Moreover, children learn something about their communicative skills by the feedback they get.

Experiences within the family teach the child about the processes in other people's minds. In a study by Perner, Ruffman, and Leekam (1994), three- to four-year-old children who had siblings showed better results in false-belief tasks than those who had none. The age of the siblings, older or younger, is of no consequence here. Sibling interaction promotes perspective taking skills in young children to the extent that, according to Perner et al. (1994: 1230), "the benefit children get from interacting with two siblings rather than none is worth about as much as one year of experience". Interactions within the family seem to have some impact on the child's social development and understanding (Dunn et al. 1991). Children who participate in conversations about internal states at 33 months are more skilled at false belief tasks at 40 months. The same children also show more cooperative interaction with their siblings than others.

### 3.6. Imitation and pretend play

Imitation of older siblings might promote young children's understanding of other people's minds in that it enables them to do things with objects and language which they would not yet be able to do without the example of older children. During the first eight months, it is mostly the older sibling who

imitates the younger. However, already at the age of twelve months, infants imitate the older sibling more often than vice versa (Dunn 1984). Those cases of imitation in which infants join into the older children's pretend games are interpreted as early stages of their perspective taking development. Dunn gives an example in which the older sibling puts a toy pilot in a toy airplane and 'flies' it. Shortly afterwards the fourteen-month-old child, Tom, imitates the action. Dunn claims that this action is carried out at a much more mature level than the child would be able to if he had to manage on his own. At fourteen months, children are usually not able to play with pretend people as if they were flying with planes.

We do not yet know whether imitations such as these are in fact generally important in the development of children's intellectual skills, but it certainly seems likely that they can be, as in the case of Tom. Imitation of an older sibling shows us very clearly that siblings can indeed have a direct influence on how children play and on their skills with the world of objects. (Dunn 1984: 26)

Dunn does not seem to have taken into consideration that social pretend play does not in all cases reveal perspective taking abilities. It may be assumed that children who put pretend pilots into pretend planes and 'fly' them do not do that because they have watched real pilots and planes in action, but because they have seen other children (or adults) 'pretend' in this way. As indicated above, children's pretend play should not be confused with functional play (Leslie 1987).

Dunn observes that children also like imitating actions of misbehaviour of their siblings, even if - or especially if - they have watched their parents react angrily. They seem to realize that, by acting out in a way they are not supposed to do, they can draw the parent's attention. Even at the age of two, children understand clearly when the older sibling has transgressed family rules. Similarly, older children imitate babyish actions carried out by the younger if the parents show delight about them.

The interaction between siblings has a strong influence on the perspective taking development of both of them. Various aspects of this influence have been presented in this chapter, such as the peculiarities of triadic interaction, the impact of family discussions of internal states, the adaptation skills which preschool-aged older siblings exhibit, and the infants' reactions to the

challenges which interaction with older siblings provides. Some of these aspects will reoccur in the next part of this paper; however, my research methods were not designed to specifically address any one of them. Instead, everyday experience with children allowed me to develop a completely different approach to the question of perspective taking in the family. My findings, however, do not actually disagree with current research. Rather, laboratory experiments may find confirmation in everyday experience, and studies designed on a larger scale agree with insights from the inside.

## **II. PART TWO: PERSPECTIVE TAKING IN THE HOME CONTEXT**

### **1. Methods of data collection - home situation versus laboratory experiments**

In data collection, a large variety of procedures in diverse combinations is conceivable. Most of these varied methods have been used at one time or the other. In this chapter, I will summarize, first, some investigators' reasons for using one or the other method as well as the experiences they made. The examples I give are selected from the relevant literature of this paper. They are not meant to be representative or in any sense complete. My aim is to exemplify the variety of methods which may be used in this field. Then, I will give my own reasons for collecting data in the way I did and describe my experiences. Concluding, I will propose my suggestions concerning which methods of data collection are most useful for the topic at hand.

The most obvious distinction is that between the laboratory and the home setting. Up to the late seventies, probably the most common method in child language investigation was to observe mother and one child for one or several shorter periods of time in the laboratory. However, as other family members and peers gradually came into focus, this method was challenged and its shortcomings pointed out by several authors (e.g. Marvin, Greenberg, and Mossler 1976; Cook-Gumperz 1977; Schaffer 1989). Lamb (1978) was one of the first to take siblings into account in that he let infants and their preschool-aged siblings play in a laboratory while their parents were present. Other authors used the home context. Abramovitch, Corter, and Lando (1979) observed 34 pairs of siblings for two 1-hour periods in their homes. It turned out that the children tended to stay together, although they were not required to, and that they interacted much and variedly. The basic idea of letting the family members come and leave as they wish, was taken up again by Corter, Abramovitch, and Pepler (1983). In their study, 56 pairs of siblings were observed for two one-hour periods in their homes. Mothers were free to come and go, and their entrances and exits were noted and timed. The aim of analysis here was the influence of the mother's presence upon the children.

Other procedures leave less freedom to the participants. During Jones and Adamson's (1987) home-based videotaped observations, the participants were required to engage in free play with toys as well as picture book reading. In Marvin, Greenberg, and Mossler's (1976) study, 80 children between 2.5 and 6.5 years of age were presented with a perspective taking task in their homes. The results showed unexpectedly high perspective taking skills in young children. The authors claim that this was caused by the fact that their tasks involved demonstrably different perspectives and were simple. Above all, they were administered in the home by the mother and an experimenter who was no complete stranger. At the time of the study, this was still rather uncommon.

Experiments carried out in the home context, then, may reveal some aspects of the development in children's minds which are difficult to investigate in the laboratory. Furthermore, children's language is easier to understand and to value correctly if the social context is taken into account (Cook-Gumperz 1977). The meaning of their utterances is best understood in dependence on the situation in which the children have learned to communicate with the people around them. In the laboratory, in contrast, children are expected to talk about a subject that may not interest them, with an experimenter who does not know their idiolect and does not share any past experiences with them (Bartsch and Wellman 1995).

Children interpret other people's utterances within the framework of an existing system of shared meanings in the home context. Part of this system are family rules and the relationships between the family members. The investigation of family interaction at home reveals the extent of children's understanding of these rules, and of the feelings and intentions of other family members (Dunn and Munn 1985/1987; Dunn, Bretherton, and Munn 1987). Events of interaction within the family are very salient for children. During their second year of life, they learn to participate in situations of conflict, and their understanding of what annoys and comforts their siblings increases rapidly (see above).

Insights such as these could not have been gained by relying on laboratory experiments alone. Reflection on naturally occurring events of interaction in the home context invites the observant to a wide range of possible aims of analysis. In some studies, for instance, the focus is on verbal communication.

Brown and Dunn (1992) analysed the developmental changes in the pattern of family conversations and talk about feelings at home. In other studies, family conflicts are analysed by taking nonverbal aspects into account as well (Dunn and Munn 1985). Another method is to concentrate on young children's intrusions into conversations between their mothers and older siblings (Dunn and Shatz 1989). It is to be noted here that laboratory experiments, in contrast, could not be designed to make children intrude into others' conversations.

There are significant differences between the interaction of parents and children in private versus laboratory contexts. The fact that adult participants also react to unfamiliar situations in a certain way must be taken into account. At home, the members of the family interact only for very brief periods. Mothers tend to be distracted by other demands such as household tasks and the attendance to the other children, if the family is large. Adult sensitivity towards one child at a time is constrained, and episodes of joint attention are infrequent. These facts distinguish the home situation markedly from laboratory sessions, especially from those in which only the mother and one child are observed. In the laboratory, adult sensitivity is at its highest (Schaffer 1989). Laboratory situations with mother and more than one child differ from the home situation in that the adult's concentration is on the children alone, not on other demands. If children have to share the caretaker's attention with other children, and to cope with lack of responsiveness in general, this will have specific effects on their behaviour and development. Language environments are dependent on the number of children taken care of. According to Schaffer, the results from observations of mother and child in isolation are by no means representative and generalizable.

Once this view was generally accepted in the late 1980's, several authors started to combine the diverse methods. A comparison between children's and their mothers' linguistic behaviour at home and in the laboratory indicated that the interaction was consistent across settings (Howe and Ross 1990; Howe 1991). A positive correlation was found between naturalistic home observations of preschoolers' sibling-directed internal state language and sibling-directed affective behaviour in comparison with laboratory measures of perspective taking abilities. Those children who were skilled at perspective taking in the lab engaged in internal state discourse more often than poor perspective takers. Moreover, friendly sibling relationships were reflected in

the children's behaviour in similar ways at home and in the laboratory. Maternal presence had a negative effect on the children's interaction at both settings.

Family interaction in the home at 33 months is positively associated with perspective taking and false belief understanding as measured by laboratory tasks at 40 months (Dunn et al. 1991; Youngblade and Dunn 1995). Individual differences in the understanding of other people's minds are related to family relations and discussions about internal states. Family discourse seems to play a crucial role in developing the abilities measured in social cognition tasks.

These results highlight the fact that it is useful to combine diverse methods in the investigation of children's social understanding and 'theory of mind' development. Cooperation between children in events of joint activity can be measured in a private situation, while measures of false belief understanding are best taken in the lab (see Astington and Jenkins 1995). The consistency of the children's behaviour across settings shows that the diverse methods are justified; none of the results are altogether misleading. However, the various methods offer the possibility of, and attract the attention to, analysing differing issues.

Home observation means that children are in their habitual surroundings. They know the place where they are observed, they feel at home. In most of the studies mentioned above, the mother was part of the observation. Sometimes, she was only present and told to act as she usually would. In other cases, she participated in carrying out some tasks in which the children were tested. However, all studies involved at least one stranger to the children. Most authors did not discuss the consequences of this fact. Others remarked that they tried to reduce the intrusive effect which strangers have upon children. They spent some time with them before starting the tasks or the observation period (e.g. Brown and Dunn 1992; Youngblade and Dunn 1995). It is, however, questionable whether the intrusive effect is sufficiently reduced after a period of roughly half an hour. My personal experience with my children is that they generally behave differently when strangers are around, even if these strangers have been known to them for some time.

It seems that very few authors indeed have yet analysed the linguistic behaviour of their own children. In the wider context of child language development investigation, some well-known names stand out such as Halliday (1975), who followed his only child with pencil and paper, or Eve V. Clark (e.g. 1978), who often uses examples from her own children to illustrate her theories. However, comparable analyses are not known to me in the field of sibling interaction. Still, it seems to me that the most interesting periods are those in which no stranger is present, the setting is most natural for the child, and no specific tasks or ways of behaving are required of the child. Ramage (1976), who analysed the language development of one of his children by making regular audiotapes and additional written notes, commented on his reasons for proceeding in this way:

Zweck und Ziel der Aufnahmemethode war es, 'natürliches Sprechen' zu erhalten. Dies ist meines Erachtens voll gelungen, soweit es das Sprechen des Kindes betrifft, denn das 'Beobachterparadoxon' W. Labovs (dt. 1971, 135) entfiel hier so gut wie völlig: Der Beobachter selbst ist als Familienmitglied kein Störfaktor für das sprachliche Handeln des Kindes; auch die Aufnahmetechnik änderte daran nichts, weil es Peter vertraut war, daß der Vater schrieb und - auch schon vor Beginn der zweiten Aufnahmephase - mit dem Tonband hantierte. (Ramage 1976: 16)

Although the author is convinced that the child's linguistic behaviour is not influenced by the observation, he admits that this need not be true for himself as the observer. He was mostly in the situation that he was not only the investigator but also the one to play with the child during the sessions. Whenever he had the choice between continuing a joint action with the child and making relevant and important notes, he decided in favour of the child. A further point he considers is that his own behaviour might have been influenced by the awareness of the presence of the tape recorder. However, this effect was somewhat reduced by the fact that *his* language was not the aim of analysis.

It is certainly impossible to eliminate all factors that make the observation period unnatural in some sense. The only way would be to make recordings of people without telling them that they are being recorded, and that is, in most cases, out of the question. With children, however, it can be expected that they are better able to ignore the camera, especially when they are still very young.

Early in life, everything is new and interesting; an object like a camera is no exception. Thus, the presence of a camera is not disturbing to the children, at least if this does not imply the presence of any stranger handling the camera. I took up video recordings fairly regularly, during a period of more than one year, and seldom with more than a month in between, so that I myself have become used to the camera by now. I even forgot its presence from time to time, with the result that some parts of the sessions are not suitable to be presented to other investigators - unless I want to expose more of my private life than needed for the research. This is probably the very reason why this method is used so rarely. Ramge also mentions this point in his preface:

Das Sprechen der eigenen Kinder zu untersuchen und die Ergebnisse zu veröffentlichen, schließt ein - so scheint mir -, daß man notwendig ein gutteil der familiären Privatsphäre preisgibt; vielleicht in einem ziemlich oberflächlichen Sinn, aber immerhin. Mir scheint im Nachhinein, daß die zahllosen 'unpersönlichen' Satzkonstruktionen in diesem Buch, daß die abstrahierenden Rollenzuweisungen ('die Mutter', 'der Vater', 'das Kind') letztlich nichts anderes darstellen als den Versuch, möglichst wenig von diesem privaten Raum herzugeben. (Ramge 1976: 9)

A further consideration is whether the children suffer to any degree from the fact that one of their parents analyses their language development. It is certainly easier for investigators to stay theoretical, leave out personal insights and the private life, and to concentrate on experiments and observation sessions when the children they investigate are not their own. I am certainly not the first or only one who has considered these points; they definitely block the progress of investigation as far as naturalness is concerned. In spite of all doubts, I am convinced that some crucial insights can be made at home, during everyday life, without having to keep an analyst's eye on the children all the time. Investigators might aim at keeping the analytical reasoning apart from the actual interaction with the children, in the same way as others manage to separate their official from their private life. If this is the case, the children need not suffer from the fact that they are being analysed in any way.

Without video or audio tapes, it is fairly impracticable to collect larger amounts of relevant data, unless one really wants to follow the children with pencil and paper through years. If the consequence of such an observation is that parents have neither time nor the opportunity to interact with their children because they have their hands occupied, then it is hardly worthwhile. Children

do not ask for such parents, and the result might be that they stop behaving naturally, because they feel deprived of parental care.

As a consequence, although I was hoping for the reverse, my data are so few and far between that they, at best, might be called 'anecdotal evidence'. The question is whether this is really useless - maybe these rare incidents are what matter in language acquisition. As Nelson observes,

quite a small amount of interaction can have very clear effects on children's language advances and on the style or bias or orientation that children show in their language. (Nelson 1987: 306)

Children have so much to learn and to organize inside their minds that they cannot always be showing their advances. My observation is that, as a linguist with own children, one gets a fairly good impression of how children learn and why they behave in a specific way. It is conceivable that such everyday insight leads the observer closer to the truth than laboratory experiments. Laboratory theorists have no choice but to rely on what they observe at one special point in time. My own children, at least, behave in different, often unpredictable ways for various reasons. Their mood of the day and my own mood play a crucial role; they underlie all actions, and are hard to interpret from the outside.

Laboratory experiments are a useful tool to confirm insights which linguists gain during everyday life at home. The first step, however, should always be to stay as close as possible to the home context. As the data one can possibly collect at home are never concentrated enough, it might be advisable to look for suitable experiments then. Periods of natural observation at home with children other than the investigator's own are helpful, but they are not as enlightening as insights from everyday life. Studies combining home observations and laboratory experiments, however, may lead to valuable discoveries.

In the following chapters, I will search my data for any aspects which support - or contradict - the findings presented above. For the above reasons, I will also use my intuition to describe the children's linguistic behaviour. I expect I will not be too far from the truth, even lacking hard evidence, as I live together with the children all day. Laboratory evidence, which would be a sensible next step, is beyond the scope of this paper.

## 2. Procedure

I have two children, born in May 1993 and in October 1994. When I started video sessions on 17.4.1995, the younger one, L, was 6 months old. J, the older, was close to his second birthday. However, I started keeping a diary with its focus on J's linguistic development already before L's birth, so that the whole period is covered, though irregularly, from the start of the sibling situation up to now (summer 1997).

I found it more important to keep up a natural relationship to my children than to collect data which would meet scientific standards. This priority, of course, was given primarily for the children's benefit. As a second thought, however, it seems to me that those data collected by more full-hearted scientists might not be as natural as they should. Data collectors unintentionally influence the data, or at least the subjects of observation, if they concentrate on the progress of their analysis to a high degree. I expect that although the data I managed to collect might be insufficient, they are at least natural. The way I proceeded was that whenever I found an utterance or a conversation between the children, or between myself and one child or both, especially interesting and worth to be noticed, I wrote it down. Often enough, these incidents mark the beginning of a new learning period: the children might have acquired a new grammatical structure, or discovered a new way of interacting. Naturally, these notes are not suitable to be used for statistical analysis. This method is very much dependent on my own point of view, on my judgment of what I find worthwhile writing down.

To compensate for the shortcomings of subjectivity, I additionally used another method of data collection: I recorded video sessions with the children. I found this rather safe, regarding my relationship to the children. I ensured that they never saw the video films, and they never watched me work on them. I put the camera into one corner of the room where we would be staying for the next hour or so, and usually did not pay any more attention to it until the session ended. The younger did not seem to notice the camera at all, with the exception that I sometimes had to stop him from touching it, which would of course have disturbed the picture. J sometimes asked about it, to which I regularly

responded that I was recording a video film. As far as he realized what this meant, he did not seem to mind. My impression was that he generally behaved in the same way as at other times, when there was no camera. Both children hardly ever even glanced at the camera. As for me, I feel that I became used to the camera. The video tapes were something I produced for myself in the first place, for my own private or linguistic interests. My conclusion is that the tapes show data which are as natural as they could be. They are nearly as natural as the notes I took in between, but far more valuable as linguistic evidence, as they can be checked again later.

The other side of the coin is that I very rarely tried to make the children say something important during the sessions. This results in several video hours in which all that can be seen is myself reading aloud to the children, or the children involved with a jigsaw puzzle or other solitary game which does not invite to much talking. If that was what the children wanted to do during the sessions, we did it. I did not put much pressure on the children to make them valuable subjects of analysis. Additionally, I did not record video sessions very regularly. I started one when the time felt right for it: when it was no strain for the children. Sometimes this happened once every fortnight; at other times more than a month passed before another opportunity occurred.

I tried to keep the transcripts from the video sessions as readable as possible without excluding relevant information. This was called for because the transcripts do not build the basis for statistical analysis, but are used to exemplify my findings. As they are part of the text rather than the appendix, readability must be ensured. For the purposes of this paper, it was sometimes necessary to include information on the participants' actions. These were put in square brackets [ ] to separate them from the speech. Information about intonation, however, is seldom relevant. If so, it is also provided in square brackets.

My transcripts depend to a high degree on literary conventions. Question and exclamation marks as well as full stops and commas are used in a way that the reader, in interpreting the signs according to literary conventions, should get a fairly close impression of the original intonation pattern of the utterance. In spoken discourse, small initial letters are used generally, as it is not always possible to define beginnings and endings of sentences. In all other cases, such

as German nouns and all names, capital letters are used according to literary conventions. If the children's speech clearly deviates from Standard German, I have tried to transcribe the relevant sounds appropriately without using additional symbols. Often, it was possible to make these transcriptions readable on the grounds of both English and German sound-symbol relations. An example for this is J's early pronunciation of his brother's name: "Kuka" for Lukas. "Kuka" will be read correctly (i.e. similar to the original pronunciation) both by English and German readers. In cases of doubt, the deviating expressions should be read with a German tongue.

I am aware that these transcription methods do not leave much room for further analysis without consultation of the relevant videofilms. However, the aim of this paper is best fulfilled if non-relevant details are left out, as the reader would be distracted by too much detail in the transcript (see Bloom 1993). As the verbal utterances need an English translation, the transcriptions are already fairly complicated. I chose to let the English versions follow directly after the German utterance to enable the reader to get a direct impression of what was said, and how. I translated what the children meant, rather than try to translate their phonetic failures. If the failures were not phonetic but rather a shortage of words, I translated the words of their utterances.

The only symbol convention which calls for explanation is the difference between the following signs:

(...) is used when parts of the utterance are incomprehensible

[...] is used when parts of the dialogue are irrelevant for the understanding of the context and therefore left out.

Round brackets are also used when parts of the utterance are incomprehensible, but I think I can guess what was said:

(Kuka) would mean that I think the speaker said "Kuka", but am not sure.

The diary notes which I cited are simply copied from my original diary and translated. In verbal utterances, the same conventions are applied as described above. As the diary notes are not translated directly after the sentences, but as a whole, I repeat the children's German utterances in the translation paragraph to enable the English readers to get a direct impression of what they said. The utterances are then translated. I decided to leave out the German original of my

own speech in the translation paragraph, as my language is not the aim of analysis.

The following abbreviations are used:

T/ ich/ I/ Mama = me (the observer) as the children's mother

J = the older boy

L = the younger boy

P = another adult

V = video session

D = note from my diary

### **3. Perspective taking in general**

I started taking notes on the interaction between my children and making video recordings two years ago on account of my general impression that

1. my children interacted a great deal, even though both of them were still very young, and that
2. the older one exhibited some rudimentary aspects of perspective taking in this interaction.

My interest thus focussed on what exactly it was that created this impression, and in how far it might make sense to categorize certain traits of linguistic behaviour with regard to the children's perspective taking development.

A closer analysis showed that, in the beginning, interactional events were primarily nonverbal, although they were mostly accompanied by short utterances. J was none of those children who start to speak very early. As verbal perspective taking is logically restricted by a child's linguistic skills, the first events in which I observed perspective taking reflected in language occurred only when J finally started to speak in earnest. This happened around his second birthday.

### 3.1. Comforting/ teasing

Before and apart from the linguistic development, the pattern in which perspective taking was reflected changed visibly. During the first months (23 to 26 months of age), the most significant events were those in which J showed teasing or comforting behaviour:

V 30.4.95 17:11

L [cries]

J: "Kuka" ["L"]

T: "bring ihm doch mal ein Spielzeug" ["go get him a toy"]

J [fetches a toy for L]

L [stops crying]

J: "Kuka" ["L"]

In this situation, J signals by uttering his brother's name that he wants L to be comforted, although he does not yet seem to know how. T offers a possible solution, which J tries out successfully. J is contented and shows this by uttering the name again.

V 14.5.95 18:28

J [hurts himself with a toy rake; then climbs on top of L; wants to sit down on his face]

T [pulls him away]: "nicht dahinsetzen!" ["don't sit down there!"]

J [with a half-crying voice]: "Duka!" ["L!"]

T: "ja, schmus mal mit dem!" ["yes, hug him!"]

J [hugs L until L cries, then climbs down at once]

T: "ich glaub du bist zu schwer für den" ["I think you are too heavy for him"]

J [starts climbing up again; takes away toy tiger with which L is playing]: "Tiga" ["tiger"]

[...]

[J takes dummy out of L's mouth]

[T tells J not to do this, and to give L other toys if he wants to play with the tiger]

J [hugs L again, then takes dummy out of L's mouth]

T [calls J to order]

Here, J shows his affection towards the sibling by hugging him, although L does not appreciate it. The context of this event suggests that J is altogether in a slightly strained mood. He has hurt himself and wants to give (and get) comfort by hugging his brother, who is altogether non-responsive. So he loses interest in hugging and now concentrates on the toys. Later, J takes up his hugging again although he is in the midst of a sequence of annoying L (who does not respond to this either). A few minutes later, J shows clearly that he has understood how to make others angry:

V 14.5.95 18:41

J [throws toys around]

T [scolds him]

18:45

J [throws toys around]

T: "nicht schmeißen!" ["do not throw!"]

J [throws toys around]

T: "nicht schmeißen!" ["do not throw!"]

J: "Kuka!" ["L!"]

J [looks at L; walks over to L, possibly seeking comfort]

T: "ja wenn du Lukas triffst, dann tut es ihm weh. dann ist er ganz traurig. muß er weinen" ["yes, if you hit L, he will be hurt. then he will be very sad. he must cry"]

J [walks past L towards the door; wants to get out, which he is not allowed]

18:48

J [throws toys around, hits L accidentally]

T [scolds him]

J [cries for a while, then mutters something, ending]: "Kuka" ["L"]

18:57

J [throws toys around]

T [scolds him]

J [with a 'knowing' look at L]: "Kuka"

This is a typical situation in which the child is both attracted by the possibility of annoying both mother and brother, and warned by the knowledge that he might actually hurt the latter, which he does not want. Both aspects show that he has some rudimentary understanding of other people's feelings. In the light of this sequence of events, it seems likely that J was in such a bad temper that day that he actually enjoyed making others angry, even, paradoxically, by showing affection.

V 7.8.95 11:44

J [plays with L, lying halfway on his head, close to L. Laughs. Takes away dummy]

L [cries]

J [gives dummy back, calling to L]: "Nuller" ["dummy"]

In this session, J is altogether in a better mood. He therefore only teases L by taking away the dummy until he cries, then gives it back. Ten minutes later, he comforts his crying sibling and comments sensibly upon this:

V 7.8.1995 11:54

L [cries]

J [waits, then looks closely at L, strokes him; then to T]: "Nannis (...) Kuka immer (w)eint" ["J (...) L always cries"]

From my knowledge of J's language and choice of words, dependent on my own, I expect that J really meant to say: "I am stroking L so that he does not need to cry".

J's habit of uttering L's name when concerned about him is to be appreciated in the light of the fact that "tuka" was one of the first words that he learned at all. He was only 17 months old when L was born and at the verge of learning greater amounts of vocabulary. The fact that L's name was so interesting to him is revealing as far as the salience of siblings to each other is concerned.

Possibly as a consequence of this salience, L started to comfort his brother, when hurt, very early, shortly before his first birthday:

D 14.10.95

J hat sich wehgetan, und beide Kinder sitzen bei mir auf dem Schoß. Da fängt L an, J zu streicheln, sagt dabei "ahh".

[J has hurt himself; both children are sitting on my lap. L starts stroking J affectionately, saying "ahh"]

### 3.2. Sharing

Already before his own second birthday, J started to consider L an important participant of games:

V 14.5.95 19:11

T [plays with a doll, first directed to J, then to L]

J: "ich auch" ["me too"]

T [directs doll towards J]

J: "Kuka" ["L"]

T [directs doll towards L, then the turn-taking is established, with J 'directing' the doll towards T, L, himself or into the air]

V 3.10.95 18:12

J [plays with a toy telephone; then holds the telephone at L's ear]: "Tuka ah ma" ["L once"]

L [no specific reaction]

J [as though taking L's role]: "(...) Tuka da. tuus!" ["(...) L there. Bye!"]

J [holds the telephone at his own ear]: "hallo?" ["hallo?"]

J [holds the telephone at T's ear]: "Mama ah ma" ["Mama once"]

T: "hallo? willst du mit Jannis sprechen? Jannis ist auch da. tschüß!" ["hallo? do you want to talk to J? J is also here. bye!"]

J [puts down telephone; continues playing with it in different ways]

However, it should not be expected that J knew all about turn-taking at the age of two. It is conceivable that J's behaviour in situations such as these was truly egocentric in that J thought it funny to let L and T play with the toys. There were many events in which he preferred simply taking away the toys from his brother, without taking L's wishes into account, as in this one:

V 13.7.95 18:35

J [takes away car from L]: "meins...Auto" ["mine...car"]

It is to be noted here that J gives a reason for his action. At other times, he took away a toy and offered L something else instead:

V 20.8.95 10:09

J [pushes away box from L]: "weg hier" ["away here"]

T: "Jannis! der darf da auch mit spielen. du kannst dir doch die Teile rausnehmen" ["J! he may play with this, too. you could take out the pieces you need"]

J [pushes box back; gives L another toy]: "da (...)" ["there (...)]

V 25.9.95 18:49

J [does not want to give a specific toy to L; gives him something else]: "da pielen" ["play this"]

In these situations, J understood that L did not yet mind which toy he got, as long as he had something to play with. Similar events occurred in one form or other many times. From the age of 28 months, J fairly regularly directed attention to his brother when he himself ate or drank:

V 3.10.95 18:18

J [gets himself an apple]

J: "Luka auch!" ["L too!"]

T: "Lukas auch? ja, laß den mal abbeißen" ["L too? yes, let him take a bite"]

J [lets L take a bite from his apple]

V 11.11.95 17:12

J [offers T something to drink]: "du da" ["you here"]

T: "ich will nicht." ["I don't want."]

J [to L]: "du?" ["you?"]

L [takes bottle]

17:13

J [drinks; puts the bottle into L's hand]: "das hier! du!" ["this one here! you!"]

L [throws bottle away]

T: "mag nicht mehr." ["does not want any more."]

V 30.11.95 10:12

J [calls T's attention to the fact that L wants to join the reading]: "Luka!"  
["L!"]

L himself was not slow to respond to this; the following diary note was made only two months later:

D 13.12.95

L scheint richtig daran gewöhnt zu sein, J die Flasche abzugeben, er hält sie ihm hin, auch wenn er woanders sitzt, nicht direkt neben ihm.

[L seems to have got used to offering his bottle to J. He holds it towards him, even when he sits somewhat apart from him, not directly beside him.]

### 3.3. Understanding the other's abilities

Soon after his second birthday, J had developed a fairly good understanding of his brother's abilities.

V 7.8.95 11: 35

T: "kann Lukas auch was bauen?" ["Can L build something, too?"]

J: "nee, de de de dehr" ["too difficult"; the pronunciation is indistinct]

11:36

J: "nich...nich Kuka ne bauen kann" ["Not...not L can build"]

Four months later, J tried to tell L with words how to hold a telephone receiver correctly, then realized that L was not able to understand the words, and therefore showed him with gestures:

D 13.12.95

Ich telefoniere, J hört per Mithörermuschel mit. Nach einer Zeit gibt J L, der Laute von sich gegeben und geguckt hatte, die Muschel über den Glastisch rüber. L hält sie falschherum ans Ohr, hört nichts, verliert das Interesse und wirft die Muschel weg. J sieht das, sagt: "annersrum! mutte annersrum!" L versteht nicht, J geht um den Tisch herum, hält die Muschel L richtig ans Ohr und sieht begeistert zu, wie L zuhört.

[I talk on the telephone; J listens to the conversation by way of an additional receiver. After some time, J hands the receiver over the table to L, who has vocalized and watched us. L holds the receiver the wrong way, does not hear anything, loses interest and throws the receiver away. J watches this, says: "annersrum! mutte annersrum!" ["the other way round! must the other way round!"] L does not understand; J walks around the table, holds the receiver in the correct way to L's ear and watches joyfully how L listens.]

This event is revealing considering the extent to which J understood L's motives for throwing the receiver away, and J's anticipation of how L would regain interest if the receiver was held correctly. Obviously, J showed great interest in the development of L's abilities. When he realized that L could do something, he often thought that he ought to get the chance to do it:

D 14.12.95

J und L sitzen vor der Badezimmertür, P kommt raus und macht die Tür zu. J (drückt mit nicht erinnerten Worten aus, daß P die Tür nicht zumachen solle): "Lutas tann alleine!" Das erzählt er mir dann noch mehrmals, macht die Tür dabei fast zu und guckt zu, wie L die Tür zudrückt.

[J and L are sitting in front of the bathroom door. P comes out and shuts the door. J (expresses with some words I do not remember, that P should not shut the door): "Lutas tann alleine!" ["L can alone!"] He repeats this several times, then almost shuts the door and watches L press the door to the lock.]

One year later, the general attitude had not changed; but J's reaction had grown linguistically sophisticated and was directed to L rather than a caretaker:

D 12.12.1996

Es kommt ab und zu mal vor, daß L etwas machen will, wie Licht an etc., und J kommt ihm zuvor, ohne es zu merken. Wenn L dann anfängt zu heulen, beugt sich J zu ihm hin und fragt ihn: "wolltest du das machen? ja? ist leider schon zu spät!"

[It happens from time to time that L wants to do something such as switching the light on etc., and J unconsciously surpasses him. When L then starts to cry, J bends down to him and asks him: "wolltest du das machen? ja? ist leider

schon zu spät!" ["did you want to do this? yes? it is too late, I am afraid!"]

### 3.4. Coordination and cooperation

J's developing understanding of his younger brother's behaviour is also perceptible in the way he coordinated his own actions with those of L. The development of coordinated games through time into increasingly sophisticated patterns reveals some aspects of their mental understanding as well as their salience to each other. When L was only 10 months old, I noted that they had already established simple games together:

D 4.8.1995

Ihre gemeinsamen Spiele sind sehr häufig: J läuft vor L hin und her, oder 'erschreckt' ihn (auch mit "buuh"), oder versteckt sich und taucht plötzlich auf. Beide lachen sich dabei kaputt. Wenn L gerade woanders hinguckt, ruft J: "Duka!", auch mehrmals, bis er guckt.

[They play together very often: J runs to and fro in front of L, or "scares" him (e.g. by uttering "Buuh"), or he hides and reappears suddenly. Both of them laugh a lot in these games. When L is looking somewhere else, J cries "Duka!", sometimes several times, until L looks to J].

In such games, L's role was only minimal; he was only required to watch and laugh. J's role, however, shows that he was eager for this laughter; he wanted to share some emotion with his brother.

D 24.10.95

L sitzt oben an den drei Stufen zwischen dem Durchgangszimmer und Küche und kann nicht runter, gibt auch "verlangende Laute" von sich. J setzt sich davor mit dem Rücken zu L: "nee!" L rückt zur Seite (obwohl ihm das nun auch nicht hilft, herunterzukommen, aber wenigstens hat er freie Sicht) und J folgt. Da streichelt L J am Hinterkopf und J sagt "eiei" und beide lachen.

[L sits at the top of the three stairs between the kitchen and the adjoining room and cannot get down; he also makes some noise indicating that there is something he wants. J places himself directly before him with his back towards L: "nee!" ["no!"] L moves to the side (although that does not help him to get

down, but at least he has a better view) and J follows. Suddenly L strokes J at the back of his head, J says "eiei" [German babytalk while stroking], and they both laugh.]

In this situation, the children do not actually cooperate, but they watch the other one's actions closely and react directly to them. Furthermore, J tries to control the younger brother's behaviour, having understood the infant's aim. At that point, J was only 29 months old. Cooperation of action is also shown in the following episodes:

D 12.12.95

L und J trinken beim Essen aus einer Flasche Milch, geben sich diese recht gut koordiniert immer gegenseitig. L bietet J immer die Flasche mit einem Laut "eh" an, J sagt kaum etwas. Als J einmal die Flasche will und merkt, daß L noch trinkt, sagt er: "ers Lutas!"

[During a meal, L and J drink from one bottle of milk. They give the bottle to each other in a fairly well coordinated way. L always offers the bottle to J with the accompanying sound "eh"; J hardly says anything. Once, when J wanted the bottle and then realized that L was still drinking, he said: "ers Lutas!" ["L first!"]]

D 26.1.96

J spielt mit einem Auto, das er mit Schwung wegschiebt. Da sitzt ihm L im Weg, und er ruft: "paß auf, kommt Auto!"

[J plays with a car and pushes it with energy away from himself. L sits in his way, and he cries: "paß auf, kommt Auto!" ["Watch out, car comes!"]]

D 4.1.96

Zu Weihnachten haben die Kinder ein Bett mit Rutsche bekommen. Sogar L kann alleine hochkrabbeln. Sie sind sehr diszipliniert dabei, drängeln nicht, auch wenn einer mal länger braucht. J klatscht öfter mal L Beifall. Insgesamt scheint es ihnen am meisten Spaß zu machen, wenn sie beide dabei sind.

[The children got a bed with a chute for Christmas. Even L can crawl up alone. They are very organized about using the chute, they do not disturb each other,

even when one of them is fairly slow. J often applauds L. Generally, they seem to enjoy it most when both of them join in.]

Shortly before J's third birthday, I noted a fairly established relationship between the two, with J being the one to attend to L, and L (aged only 18 months) seemingly aware of J's role:

D 22.4.96

J scheint um L besorgt zu sein und auf ihn aufzupassen, z.B. läuft er ihm hinterher, wenn L wegläuft etc. Und für L scheint es auszureichen, wenn J in Sichtweite ist, dann entfernt er sich schon ganz schön weit von mir.

[J seems to take care of L and watch what he is doing, e.g. he runs after him when L runs away. It seems to be enough for L if he can see J. If this is the case, he sometimes gets into great distance of me]

When J realized that L was not capable of doing something, he sometimes offered his help:

V 30.5.96 9:58

J and L [play with toy bricks. L fetches the bricks and J builds a tower. Now L seems to have difficulties in getting hold of more bricks]

J [to L, several times]: "ich hol das schon, Lukas! du nicht kannst, ich helf das." ["I will get that, L! you cannot, I help."]

It is clear that J is not the only one who is interested in cooperative games. L's participation, active or passive, in J's games is obvious long before his second birthday (19. month):

V 30.5.96 10:42

L [shows interest in J's activity of throwing a ball; applauds; several times]: "ball" ["ball"]

10:44

T [to J]: "wirf mal!" ["throw!"]

J [seems to find that L is in the way of his throwing]: "noch nicht! gleich!" ["not yet. just a minute"]

D 22.1.1997

J hilft L, ein Puzzle zu machen; ist dabei sehr geduldig, zeigt ihm bei jedem Teil, wo es hinmuß, evtl. noch mit "andersrum!". Sehr harmonisch; L fragt dann auch immer: "hier? da?"

[J helps L in putting together the pieces of a puzzle; he is very patient, shows him where each piece fits; sometimes saying "andersrum!" ["the other way round!"]. They play in great harmony; L often asks "hier? da?" ["here? there?"]

By now, their coordinated interaction has become fairly sophisticated. L appreciates that J is better at putting together the pieces of the puzzle, and actually asks him for advice, which J happily gives.

### 3.5. Conclusion

I found in my children's everyday interaction that they had an obvious influence on each other. Those events that pave the way for the development of increasingly sophisticated perspective taking abilities take place at a very early age; clearly before the second birthday. The most important categories of interaction which exhibited mental understanding were the following:

- Teasing and comforting: In teasing, J tries (and manages from early on) to find a way of making the other react, i.e. to annoy, without actually hurting him. In comforting, the other's needs are taken into account; and the wish is exhibited to make him feel fine.
- Sharing: In expressing the wish to let L participate in games, or to share food or drink with him, J takes care of L's position and needs. The same happens when J provides some alternative toy instead of the one L is concerned with, knowing that L does not yet care.
- Understanding abilities: J shows an effort to adjust his own actions to those of L, according to the latter's abilities. He watches L's development closely and is aware of the progress he makes.
- Coordinating action: The children manage to cooperate in games and other interactive events from early on, taking the other's reactions into account in their own action.

## 4. Verbal manifestations of perspective taking

### 4.1. Staying together and its consequences

From the start of my observations, the children showed much inclination to stick together and do funny movements and vocal games together, as in the following episode:

D 31.8.95

J und L schütteln beide wie wild den Kopf und freuen sich. J: "beide nei". Dann: "noch nei". J faßt L's Hand und 'singt': "Tuka, Tuka".

[J and L both shake their heads violently, enjoying themselves. J: "beide nei" ["both no"]. Then: "noch nei" ["more no"]. J takes L's hands and 'sings': "Tuka, Tuka" ["L, L".]

J often expressed that he wanted L to join us if we went out or into another room. This attitude is reflected in sequences like the following:

D 17.11.95

J wird gerade gewickelt, als er L vor der Badezimmertür "dada" sagen hört. Er fragt mich: "kann e Lutas rein?", zweimal. Ich mache die Tür auf, und J freut sich: "Lutas rein tann! hallo Tuka!"

[While his diapers are being changed, J hears L from outside the bathroom saying "dada". He asks me: "kann e Lutas rein?" ["may L come in?"], twice. I open the door, and J is happy: "Lutas rein tann! hallo Tuka!" ["L can come in! hallo L!"]

In January 96, I noted that J very often called his brother when he was in another room. As other authors found during time-limited observation periods (e.g. Abramovitch et al. 1979), siblings have a tendency to stay together. My children, according to my general impression, are no exception. In addition, J sometimes expressed that he wanted L to join his experience:

D 9.3.96

Heute haben wir die Sendung mit der Maus geguckt und J hat L wiederholt

angeguckt (sie saßen ganz dicht beieinander) und gesagt: "kuck ma, Lutas! muß aufpassen, Lutas!"

[Today we watched the television series 'Sendung mit der Maus'. J repeatedly looked at L, who sat very close to him, and said: "kuck ma, Lutas! muß aufpassen, Lutas!" ["look, L! you must watch, L!"]]

The fact that the greater part of the day is shared by all three of us (mother and both siblings) makes the language environment for the younger sibling very much dependent on the influence of the older. Already at the age of 16 months, long before L started to learn greater amounts of vocabulary, I heard him say words fitting into ongoing conversations:

D 17.2.96

Ich unterhalte mich unterwegs (J zu Fuß, L im Buggy) mit J darüber, daß er reden kann, und L nicht. J: "Lutas kann doch reden." Ich: "was sagt er denn?" J: "dada! dada, sagt Lutas". L (mischt sich sozusagen ein): "dada".

[Outdoors, with J walking and L sitting in the buggy, I and J discuss the fact that J can talk and L cannot. J: "Lutas kann doch reden." ["yes, L can talk."] I: ["what does he say, then?"] J: "dada! dada, sagt Lutas" ["dada! dada, says L"]. L (as if interfering): "dada".]

V 25.3.96 17:54

T [reads a story to J in which a car is mentioned]

J [on T's lap; pointing into book]: "na Auto is das" ["it is a car"]

L [from another corner of the room]: "Ahti, Ahti, Ahti" ["car"]

V 5.4.96 13:00

J [plays with a toy train]: "warten alle" ["all wait"]

T: "ja? so viele Autos? toll." ["yes? so many cars? fine."]

L: "Adti, Adti" ["car"]

J: "warten ah Zug weg ist" ["wait train is gone"]

It seems to be only natural that, by age two, L had some experience in joining into ongoing conversations, as in Barton and Tomasello's (1991) study:

D 12.12.1996

L hört zu, wenn J und ich uns unterhalten, und mischt sich dann auch oft ein. Z.B. waren wir draußen und J vermißte die Katze, die er an einer bestimmten Stelle öfters sah: J: "wo ist die Katze? die muß doch draußen sein!" T: "ja, die wärmt sich wohl gerade auf. du kannst sie ja mal rufen!" J: "nee mach ich nicht." L: "ich! Pahpe, pomm!"

[L attends to conversations between J and me, and he often intrudes on these conversations. For instance, when we were out for a walk, J missed a cat which he sometimes saw at one specific place. J: "wo ist die Katze? die muß doch draußen sein!" ["where is the cat? it should be outdoors!"] T: ["yes, maybe it is warming up. you might call it] J: "nee, mach ich nicht." ["no, I won't."] L: "ich! pahpe, pomm!" ["me! cat, come!"]]

Along with this observation, I found that J and L increasingly talked to each other since L's second birthday. They took each other seriously as conversational partners. Cooperative conversations like the following became increasingly regular:

D 19.11.1996

Beim Frühstück gibt J eine sinnlose Lautfolge mit Lippenblasen am Schluß von sich; etwa: "ie-äh-ie-äh-uh-äh pfff". L imitiert dies zögernd, kommentiert dann: "pima!" J: "du mußt erst deinen Mund leermachen, sonst spuckst du alles aus!" L produziert wieder die Lautfolge. J: "hast du deinen Mund leer?" L: "ja!" J: (Lautfolge) L: (Lautfolge), dann: "pima!" J: (Lautfolge), dann: "pima!", dann: "jetzt müssen wir aber Pause machen, ja?" L: "ja!", zeichnet dann mit dem Finger in die Luft. J: "was ist das?" L: "muh" J: "nee, das ist doch keine Kuh!". Etwas später ruft L zum Toast: "pomm!" Das ist eine übliche Handlungsweise der Kinder, den Toast zu rufen, damit er aus dem Toaster hüpf. J: "nee, der kommt nicht!" Dieser Dialog wiederholt sich sehr oft, solange bis der Toast herauspringt und sich beide freuen.

[At breakfast, J produces a meaningless series of sounds, ending with a bilabial trill, roughly: "ee-ay-ee-ay-oo-ay pfff". L imitates this hesitatingly, then comments on himself: "pima!" ["well done!"] J: "du mußt erst deinen Mund leermachen, sonst spuckst du alles aus!" ["you must empty your mouth first, or else you will spit out everything!"] L produces the series of sounds again. J:

"hast du deinen Mund leer?" ["have you emptied your mouth?"] L: "ja!" ["yes!"] J: (series of sounds) L: (series of sounds), then: "pima!" ["well done!"] J: (series of sounds), then: "pima!" ["well done!" in imitation of L's articulation], then: "jetzt müssen wir aber Pause machen, ja?" ["now we take a break, okay?"] L: "ja!" ["yes"]. Then L draws with his finger in the air. J: "was ist das?" ["what's that?"] L: "muh!" ["moo!"] J: "nee, das ist doch keine Kuh!" ["no, that is not a cow!"] Somewhat later, L calls the slice of toast: "pomm!" ["come!"] That is a regular action of the children: to call the toast so that it jumps out of the toaster. J: "nee, der kommt nicht!" ["no, it does not come!"] This dialogue is repeated many times until the toast jumps out and both are delighted.]

#### D 10.1.97

T zu L: "willst du noch mehr Joghurt?" L: "ja, mehr. nee! Hi-hi!" (er hat sich umentschieden; er möchte Müsli). T: "ist aber keine Milch mehr da." L: "Hi-hi!" T bereitet die Portion vor. J zu L: "willst du mit Milch?" L: "ja." J: "ist aber keine Milch mehr da." L: "allealle?" J: "mußt du ohne Milch trinken." L: "nee." J: "willst du mit Milch?" L: "ja." J: "ist aber keine Milch mehr da, Lukas. (kurze Pause) muß du ohne Milch trinken." Nun stelle ich L den Teller hin, und er ißt.

[T to L: ["do you want any more yogurt?"] L: "ja, mehr. nee! Hi-hi!" ["yes, more. no! cereals!"] He has changed his mind, he wants cereals instead. T: ["but there is no more milk."] L: "Hi-hi!" ["cereals!"] T prepares the helping for L. J to L: "willst du mit Milch?" ["do you want it with milk?"] L: "ja." ["yes."] J: "ist aber keine Milch mehr da." ["but there is no more milk."] L: "allealle?" ["allgone?"] J: "mußt du ohne Milch trinken." ["you must drink it without milk."] L: "nee." ["no."] J: "willst du mit Milch?" ["do you want it with milk?"] L: "ja." ["yes."] J: "ist aber keine Milch mehr da, Lukas. (.) muß du ohne Milch trinken." ["but there is no more milk, L. you must drink it without milk."] Now I place the plate before L, and he eats.]

In the latter dialogue, J acts as a mediator between me and L, finding out about L's wishes and helping him to understand the situation. What are the developmental steps which children take until they are able to talk in such a fairly sophisticated manner? I will focus upon one specific aspect to illustrate

some steps which I consider important, namely the understanding of how to influence the other one's wishes.

#### 4.2. An exemplary analysis of how to influence another's wishes

To begin with, J had to discover how to use language in order to find out about others' mental states. Several months after his second birthday, J seems to believe that L simply has to like what J wants him to like:

V 10.9.95 10:17

L: [cries]

T: "willst du laufen, Lukas?" ["do you want to walk, L?"]

J: "Tuka hä lauf nä" ["L does not want to walk"]

T [lets L walk with the help of her hands, and L stops crying]: "Lukas will immer laufen" ["L always wants to walk"]

J: [tries to stop T and L walking] (...) "Tuka lalet hame" ["L wants to have a bottle"]

J does not seem to want L to walk, for whatever reasons. So he tries to find some other reason for L's crying, or another way to stop him, although L is already silent. During his third year of life, as in this situation, J typically either simply forced his own will upon L, or he asked me to mediate, which I sometimes refused to do for pedagogical reasons:

V 3.10.95 18:11

J [crawls into his bed]: "Tuka auch Bett!" ["L bed, too"]

T: "Lukas, willst du auch ins Bett? du, der Jannis ruft dich. du sollst auch mit ins Bett" ["L, do you also want to get into the bed? J is calling for you. you are to join him in the bed"]

T [takes him up and puts him directly in front of the bed]: "da rein!" ["in there!"]

J: "ja!" ["yes!"; produces joyful/ playful sounds addressed to L]

L [smiles, but does not crawl into the bed]

J: "Tuka auch rein!" ["L in, too!"]

T: "mußt du ihn mal fragen, ob er auch rein will." ["you must ask him whether he wants to get in, too."]

J: "du rein?" ["you in?"]

L [crawls away]

J: "Tuka auch rein!" ["L in, too!"]

T: "der will nicht rein, glaub ich." ["he does not want in, I think."]

There is, however, a difference between wishes such as these, which can be analysed as meaning: "I want L to want to join me"; and others which simply mean: "I want L to do this because I want it." In the latter case, J had no difficulty at all in telling L directly what he expected him to do:

V 7.6.95 18:49

J [plays with toy piano]

L [comes closer, "walking" with T's help]

J [hits L lightly with his hand]: "nein" ["no"]

T [takes L back to herself]

L [does not object]

V 30.7.95 9:37

L [takes pieces of toy rails apart]

J [tries to stop him, takes the pieces out of L's hands]: "laß das sein!" ["leave it alone!"]

In these cases, J seems to know that there is no question of influencing L's will. Only his behaviour needs to be influenced, and this happens by a simple command. Others' wishes, however, cannot be forced into any direction by commands, and therefore J often asked me for help when he wanted to influence L's will. At two and a half years, J showed some understanding of others' wishes, but refused to acknowledge this if his own wishes were in conflict with those of others:

D 13.12.95

Ich sitze auf dem Schaukelstuhl, J schaukelt mich und fragt dann: "isse nuch?" Zunächst antworte ich mit "ja, danke", und J hört auf. Später wiederholt sich das Ganze, und ich antworte diesmal: "nee, bitte noch mehr!" J: "nee, isse nuch!" und hört auf.

[I am sitting on the rocking chair; J rocks me and then asks: "isse nuch?" ["is it enough?"] First, my answer is ["yes, thanks"], and J stops. Later on, the

procedure is repeated; this time I answer: ["no, please more!"] J: "nee, isse nuch!" ["no, it is enough!"], and stops.]

In this episode, J wants to find out about my wishes; yet he has got wishes of his own which are more important. In the end, the solution is to ignore the wish which I expressed, and act according to J's own aims. It seems that J experimented on his knowledge of the wishes of other people, and on his power to influence them. Sometimes he simply forced his will upon the younger:

V 15.1.96 17:04

T [lets toy telephone 'ring']: "soll ich rangehen?" ["shall I take it?"]

J: "hm" [yes]

L [takes toy telephone]

T: "Lukas geht schon ran." ["L has taken it."]

T [pretends L is talking on phone]: "hallo sagen. hallo hallo? ist der Jannis da?" ["say hallo. hallo hallo? is J there?"]

J [takes away toy telephone from L]

L [cries loudly]

T [scolds J]

J [crying]: "(...) du einmal lenieren!" ["you once talk!"]

T: "ich möchte jetzt gar nicht. (...)" ["I don't want right now."]

J: "Lukas möchte nicht!" ["L does not want!"]

T: "Lukas möchte wohl." ["yes, L wants."]

V 2.2.96 15:50

J [throws away toy bricks for no obvious reason]

T: "Jannis. nicht mit Spielzeug schmeißen, dann geht es kaputt" ["J. don't throw with toys, they will break"]

J: "mötte nich hamen" ["not want to have"]

T: "du möchtest lieber kaputttes Spielzeug haben?" ["you rather want broken toys?"]

J [takes away toy from L]

L [cries]

T [to L]: "(...) Jannis hat sich den Zug selbst gebaut (...) du kannst ihn ja mal fragen, ob du mal spielen darfst" ["(...) J built the train for himself (...) you might ask him whether you may play"]

L [makes sounds]

J: "ne!" ["no!"]

J [throws away toy bricks]

T [pointedly]: "nicht schmeißen, Jannis!" ["do not throw, J!"]

J: "mötte nich anne Spielzeug hame" ["not want to have other toys"]

J [somewhat louder, like a command]: "ne! mötte nich ham. Lukas haben" ["no! does not want to have. L have"]

T: "Lukas darf nicht einmal damit spielen?" ["L is not allowed to play once?"]

J: "nein!" ["no!"]

In these examples, J does not just act as he wants to, in the way he did previously. In addition, he gives a reason for his action: he does not want the toy, so he throws it away. It is conceivable that J did not fully grasp the meaning of want yet at that time. That led to situations like the previous episode, in which J's utterances are difficult to interpret. To make matters worse, he left out the subjects of his sentences. Sometimes he seemed to refer to himself in saying "mötte nich hamen" ["do not want to have"], sometimes to L. In the latter cases, J might have said "L is not allowed to have this" instead, or perhaps: "I do not want L to have this". However, J's understanding of want was being developed towards its correct meaning, as the following diary note illustrates:

D 20.2.96

J sagt öfter mal etwas, was L angeblich "möchte", wie z.B. "Lutas möchte tinken!", auch wenn es keinen Anhaltspunkt dafür gibt. Ich habe den Eindruck, daß es in solchen Fällen etwas ist, was J gerne von L wollte. In anderen Fällen hat er aber auch völlig recht.

[J often tells me what he thinks L wants, e.g. "Lutas möchte tinken!" ["L wants to drink!"], even if there is no indication of this. My impression is that, in these cases, J expresses something he himself wants L to do. In other cases, J is perfectly right in his suggestions.]

Some time after these experiences, J was more realistic about the degree in which he could influence others' wishes, and about the way how to do it. He now increasingly told L what he himself wanted to do, then asked him to

cooperate. One of the first incidents in which this happened was the following, when J was little over three years old:

D 4.7.96

J wollte nach Hause; L weigerte sich aber, mitzukommen. Da ging J dicht zu L hin und sagte eindringlich: "ich will nach Hause, Lukas! komm mit!" Früher waren solche Konflikte ausschließlich über mich als Vermittler abgelaufen.

[J wanted to go home; L refused to join us. J walked over to L and said emphatically: "ich will nach Hause, Lukas! komm mit!" ["I want to go home, L! come along!"] Previously, I was needed in such conflicts as a mediator.]

In order to act like this, J needed to understand that L was not informed about J's wishes until he told him; and that L was more likely to cooperate if he was informed. Considering this fairly sophisticated degree of understanding other minds, it seems only natural that it took J more than three years to get this far. Having seen me as a mediator many times, he must have understood at some point why I did this. Half a year later, this method of cooperating with the help of language was rather established. L himself started to ask J to join him, etc., soon after his second birthday; however, the background information that J often provided was still missing.

J might have practised using background information to influence others for his own purposes by giving similar information in simple offers like the following:

V 2.2.96 15:53

J [offers L a toy from a distance]: "ich baute mehr. Duka. ich baute nich mehr" ["I do not need it any more. L. I do not need it any more"]

T: "ja, brauchst, ach so, soll der Lukas das haben?" ["yes, need, oh, shall L have it?"]

J: "ja." ["yes."]

If J realized through experiences like these that L acts differently when informed about mental reasons, he might at some point have started using this knowledge for his own aims. To begin with, J sometimes confused the mental information he wanted to provide with his pragmatic aim:

V 17.3.96 17:29

J [takes away toy from L]: "möchte ich machen!" ["I want to do this!"]

T [scolds J]

L [cries]

J [gives toy back, to L]: "möcht ich das ham?" ["I want to have this?"]

L [stops crying]

[both play together following T's suggestion to do so]

Rather obediently, J wants to ask L for the toy instead of simply taking it away, remembering the many times T has told him so. However, he also remembers that L responds to mental information. The solution would have been to say something more complex like: "ich möchte das haben, darf ich?" ["I want to have this, may I?"] This sentence is too complex at this stage of J's language development. As a result, he blends both propositions into one, putting the mental information into interrogative intonation: "möcht ich das ham?" ["I want to have this?"]. It seems that J, at that point, understood what is needed to influence others in a constructive and non-violent way; but he still lacked the linguistic sophistication to express his insights in an organized way. Later experiences show that J increasingly managed to do this. However, even much later did he sometimes fall back on previous methods if he was in a bad mood:

V 14.11.96 16:43

J [sits on a big ball, rocks]

L [comes closer, makes squeaking sounds indicating that he wants to play with the ball]: "i- i- ich!" ["me!"]

T: "kann Jannis noch einmal kurz und dann ist Lukas dran" ["may J once again and then it's L's turn"]

L [waits patiently]

T [helps J rocking, sings nonsense sounds, then]: "und jetzt ist Lukas dran" ["and now it's L's turn"]

J: "aber will noch draufbleiben" ["but want to stay on it"]

T: "müßt ihr euch einigen" ["you have to reach agreement"]

J: "hm-hm. ich" ["no. me"]

L: "ich" ["me". Tries to push him down]

J: "ne" ["no"]

L: "ich" ["me"]

J: "ne" ["no"]

T: "Jannis?" ["J?"]

J: "hm?" [yes?]

T: "wem gehört denn der Ball?" ["whose ball is it?"]

J: "Ingo" [name of a friend]

T: "Ingo hat den dem Lukas zum Geburtstag geschenkt. jetzt gehört er also Lukas. dann darf der Lukas dadrauf auch spielen, wenn der Lust hat." ["Ingo gave it to L for his birthday. now it belongs to L. then L may play on it whenever he wants it."]

J: "der hat aber nicht Lust" ["but he does not want it"]

T: "doch. der hat eben nur 'ich' gesagt. ich ich ich ich ich. ich ich ich will auch auf dem Ball hüpfen heißt das" ["yes. he just said 'me'. me me me me me. me me me also wants to play with the ball, that is."]

J: "ich will aber dadrauf bleiben" ["but I want to stay on it."]

[...]

That day, J was really in a bad mood. He frequently and consciously ignored L's wishes and provoked fights. The 'wishful thinking' that L did not want the ball was rather harmless compared with the rest of the session. This illustrates that it is important to consider the mood of the day in analysing a child's abilities. The above event analysed in isolation, without the background knowledge that J had shown much better understanding already a few months earlier, and without the information that J was not inclined that day at all to tune in to L's wishes, would have led to a wrong conclusion. A logically sounding interpretation would have been that J was simply not old enough to understand what L wanted, and to cooperate verbally. In fact, considering the age of three and a half years, this would have been in complete agreement with other investigators' conclusions.

### 4.3. Conclusion

Summarizing from the previous examples, the development of the understanding of how to influence another's will might take the following course:

1. The own will is forced upon the other
2. An adult is asked to mediate

3. There is some understanding of the existence of others' wishes, but the own will is still more important. In cases of conflict, the other's wishes will be ignored
4. Some background information is given in asking somebody else to do something: an understanding has emerged that others' motivation can be influenced
5. Full information is given to the other; then the other is asked, instead of forced, to cooperate. [This has not yet become established in J's case]

It should be noted here that, if it is possible at all to generalize J's development with regard to other children, this path will not be followed in a straight manner by each individual child. In the first place, each has their own pace. Furthermore, the steps are not followed one after the other in such a way that the previous ones are abandoned. Rather, when one step is reached, this and the previous ones are at the child's disposal. How the child acts in any one event will depend on the child's mood, among other things. I expect that, even for adults, any of the above strategies are at our disposal. And for children, the latest acquisition (to inform and ask for cooperation) will stay the exception for several more years. Further investigation will be needed to decide whether there is a tendency for children to acquire the different strategies in a corresponding chronological order.

This analysis of how children acquire some understanding of how to influence others' wishes is exemplary of how children's perspective taking development is exhibited in their verbal interaction. It is conceivable that other developmental steps are taken in a similar way. A more generalized analysis might reveal some further aspects of perspective taking, as reflected in language, which help understanding something more of children's psychological development.

## **5. Perspective taking in language and language awareness**

### **5.1. Verbal games and adaptation of speech**

Although J showed interest in his younger brother from the start, there was not much verbal interaction. He rarely talked *to* him; he was much more likely to

talk to me *about* him. In those cases, however, when he did talk to him, he mostly tried to adapt his speech to the kind of sounds which L produced at that time:

V 2.4.95 11:10

L [wakes up]

J [goes to L, produces sounds along with L; additionally sometimes]: "da"; "Mama"; "hier" ["there"; "Mama"; "here"]

J [seems to be giving toys to L; which is not on the picture]

D 27.7.1995

J imitiert gern L's Laute ("baba" etc.) und findet das sehr witzig, L auch.

[J likes to imitate L's sounds ("baba" etc). Both children find that very funny.]

D 8.9.95

Beide sitzen zusammen in der Badewanne und freuen sich königlich, spritzen sich gegenseitig naß. J sagt ab und zu "nich", oder "nich, Tuka" wenn er etwas nicht will, und hält ihm dann auch die Hand fest. Ansonsten sind die Geräusche auf L's Niveau: lautes Lachen und ab und zu von beiden ein "dadada" in vielen Intonationen.

[Both children sit in the bathtub together and enjoy themselves; they sprinkle each other with water. J says "nich" ["no!"] or "nich, Tuka" ["no, L"] from time to time, when L does something J does not want, and he also grips L's hand then. Apart from that, all the sounds are at L's level: loud laughter, from time to time a "dadada" from both of them in many variations of intonation.]

At that age, J mostly addressed L nonverbally or with sounds that were similar to those of L. One reason for this might have been that J's own vocabulary was still restricted; he still used the babyish sounds towards grown-ups as well at times. However, my impression was that he did that as a kind of game; whereas he really tried to communicate with L by babbling, as though babbling was L's 'language'. At least, J seemed to have realized that grown-ups use a different kind of language, and that they do not 'understand' babbling; while L did not understand much of adult language. Consequently, J talked to him in the language which L himself used. At times he also used his normal language

when addressing him, but this was restricted to those sentences which J knew that L understood, such as "Komm mit" ["Come along"]. I served as a model for J in that I often imitated L's sounds as well, as though I wanted to communicate meaningfully with L. Furthermore, I often, and preferably, used those sentences which L understood. Of course, J watched this closely.

As J approached his third birthday, there was a change in the dialogues between J and L. J realized that L was now able to do as he was told, and used this for verbal games; or the games emerged without J's instruction:

D 16.3.1996

J bittet L öfter mal, etwas zu sagen: "du 'ding' sagen!" etc., um es dann im Wechsel zu imitieren.

[J often asks L to say something, as in "du 'ding' sagen!" ["say 'ding'!"], in order to imitate this in turn.]

V 30.5.96 9:53

J and L [produce sounds together for fun, making a nonsense conversation of it]

V 3.8.96 18:36

L [runs over to T]: "dada"

J [in a singing voice, without looking up from his jigsaw puzzle]: "dada-dit, dada-dit"

Sometimes the children included me in their games:

D 12.8.96

L "trommelt" ganz gerne auf mir herum und sagt: "Bomme!", wozu ich dann oft sage: "ich bin doch keine Trommel!" J imitiert L ganz gerne, sagt dann auch "Bomme!", und wenn ich dann nicht gleich reagiere, sagt er: "mußt du sagen, ich bin doch keine Trommel!"

[L often uses my stomach as a 'drum' and says: "Bomme!" ["drum"]. I mostly react by saying: "ich bin doch keine Trommel!" ["but I am not a drum!"] J likes to imitate L in this, saying "Bomme!" as well. If I do not react at once, he says:

"mußt du sagen, ich bin doch keine Trommel!" ["you must say, but I am not a drum!"]]

Usually J understood L just as well as I did; and he talked to him in a similar fashion. In November 96, I noted that J had taken on the habit to address L with yes/no questions, as L was able to answer them then. I had used the same practice for some time. Although L had begun to talk properly, the children still enjoyed their sound games, which sometimes developed more complex patterns:

D 17.12.96

L bringt J oft zum Lachen; manchmal zieht er richtig eine 'Show' ab, tanzt vor J, beide sagen dazu ein paar wiederkehrende Laute: z.B. J sagt: "dingding", L sagt "heischa", dreht sich im Kreis, läßt sich auf den Hintern fallen und sagt "bum". Woraufhin beide sehr lachen und J schließlich sagt "nochmal!" und das Ganze sich wiederholt.

[L often makes J laugh; sometimes he actually puts on a show for him, dances in front of J, and both produce repeated sounds: e.g. J says: "dingding", L says "heischa", spins round, falls on his back and says "bum". Then both laugh; J finally says "nochmal!" ["once again!"]; and the whole procedure is repeated.]

## 5.2. Language awareness: what is correct - what is baby talk?

More revealing than verbal games, concerning J's awareness of language, is his ability to tune in to L's speech when communication and communication failures are at stake. For instance, if L did not understand what J told him, J sometimes tried again by using L's usual version of a word:

D 21.12.1996

J will, daß L seinen Teller leerißt. J zu L: "ißt du das auf, ja?" L: "ja", geht hin und ißt es auf. J: "du mußt es aber mit der Gabel essen!" L fängt an, mit einem dort liegenden Löffel zu essen. J: "Babe" (Imitation von L's Wort für Gabel). L: "Babe".

[J wants L to empty his plate. J to L: "ißt du das auf, ja?" ["will you finish this, yes?"] L: "ja" ["yes"], walks over to the plate and eats. J: "du mußt es aber mit

der Gabel essen!" ["but you have to use the fork!"] L starts eating with a spoon which happens to be on the table. J: "Babe" [imitation of L's version of "fork"]. L: "Babe" ["fork"]]

At other times J tried to help L in articulating new words:

D 10.1.1997

Ich verteile Joghurt. J: "ich möchte Joghurt!" L: "ich auch!" J zu L: "du mußt Joghurt sagen!" L: "dene!" (geht nicht) J: "doch, geht! Jo-ghurt!" (sehr artikuliert) L: "dene!" J: "doch. sag mal 'jo'!" L (guckt, sagt nichts) J: "Sag mal Oo-ma!" L: "Oma. Opa." J zu T: "Mama, Lukas kann Oma sagen!" (aufgeregt) T: "ich weiß" (er kann es schon lange). J hat dabei vielleicht in Erinnerung gehabt, daß L kürzlich für Joghurt gut identifizierbar "o-uh" sagte.

[I put yogurt on plates. J: "ich möchte Joghurt!" ["I want yogurt!"] L: "ich auch!" ["me, too!"] J to L: "du mußt 'Joghurt' sagen!" ["you must say 'Joghurt'!"] L: "dene!" ["I can't"]. J: "doch, geht! Jo-ghurt!" ["yes, you can! 'Jo-ghurt'! (very articulated)] L: "dene!" ["I can't"] J: "doch. sag mal 'jo'!" ["yes. say 'yo'!"] L looks intently at J, but says nothing. J: "sag mal Oo-ma!" ["say 'oh-ma'"] L: "Oma. Opa." ["Grandma. Granddad."] J [to T]: "Mama, Lukas kann Oma sagen!" ["Mama, L can say 'Oma'!"; very excitedly]. T: ["I know"], (L has been able to do this for some time). J may have remembered L saying "o-uh" for 'Joghurt' not long ago, which was easily identifiable.]

D 12.1.1997

T zu L: "möchtest du Müsli oder Joghurt?" L: "nee hi-hi." T: "Joghurt?" L: "ja." J: "du mußt Joghurt sagen." L: "nee." J: "du hast aber prima, du kannst aber Joghurt sagen." L: "nee, dene." T: "sag doch mal o-u!" (keine Reaktion).

[T to L: ["do you want cereals or yogurt?"] L: "nee hi-hi." ["no cereals"] T: ["Yogurt?"] L: "ja." ["yes."] J: "du mußt Joghurt sagen." ["you must say 'Joghurt'."] L: "nee." ["no"] J: "du hast aber prima, du kannst aber Joghurt sagen." ["but you have well, but you can say 'Joghurt'."] L: "nee, dene." ["no, I can't."] T: ["say 'o-uh'!"] L does not react to this.]

J sometimes enjoyed imitating L just for the fun of it, without any further reason:

D 12.1.97

J: "Mama ajeaje!" T: "was?" J: "alle alle! Apfelsaft!" T: "ach so. kannst du auch richtig reden?" J: "ich rede wie Lukas, nech?"

J: "Mama aje-aje!" T: ["what?"] J: "alle alle! Apfelsaft!" ["empty! apple juice!"] T: ["I see. can you talk properly?"] J: "ich rede wie Lukas, nech?" ["I talk like L, right?"]

In this example, J first talks exactly like L, whose language is still very restricted and difficult to understand. T is not motivated to find out what J means, as she would have been with L. J realizes that T refuses to answer his babyish request, and so he tries again: although he does not yet give up his game of imitating L, he chooses a version which is a blend of L's language and J's more developed vocabulary. However, correct syntax is still missing. J seems to have realized that grammar is something which must be acquired gradually; and that L's language consists of single words. Although "Apfelsaft" apple juice does not belong to L's vocabulary, and J's pronunciation of "alle alle" empty reminds of his own first attempts when he was learning the word, J still manages to keep up a recognizable feature of L's language by talking in single words.

Obviously, J liked to play with language, and he did it together with L, or inspired by him, in many variations. He had a strong sense for what was correct and what was baby talk. I doubt, however, that he corrected his speech accidents because he anticipated misunderstandings (see Tomasello 1995b). Sometimes, but not very often, he tried several versions of an utterance to make me understand:

V 17.3.96 17:39

J: "Ina is a Hause!" ["Ina is at home"]

T: "Ina is/ kann sein, weiß ich nicht, wo die ist" ["Ina is/ maybe, I don't know where she is"]

J: "a anners Hause" ["another home"]

T: "Anna?" [name of a girl well-known to J]

J: "hm" [yes]

T: "kann sein, daß die jetzt zu Hause ist, ja" ["maybe she is at home now, yes"]

L: "anna. anng"

J: "anners is e nah Ina Hause. anners is na Ina Hause" ["Ina is at home somewhere else"]

T: "ach, woanders zuhause, ja genau" ["oh, at home somewhere else, yes, indeed"]

In this example, the misunderstanding is not anticipated, but obvious from my reaction. J usually showed little inclination to correct himself even if he knew that I did not understand. The following example seems to me far more typical than the previous one:

V 3.8.96 18:32

J [repeats himself many times, until T responds, without modification]: "das habe ich gesagt" ["I said that"]

When corrected, J often repeated the correct version; but when his utterances were not understood, he usually did not try to correct or improve them in any way. It is conceivable that if some children aim to avoid misunderstandings and therefore express their utterances in various versions, this need not apply to all children. It is beyond doubt that J did try to talk correctly, but I suggest that he had a different reason for this. My children have a strong sense for what is correct, or how things should be. This is obvious not only in language, but also in other situations. Usually things (rituals, stories, songs etc.) have to be just as they were the first time the children experienced them. Objects have to be at their correct place, actions must be carried out in the correct order - and by the correct person. Whenever I want to change something that has its established fashion for the children, I have to explain my reasons first in order to avoid conflict. My conclusion from these experiences is that, when my children correct themselves, they do not do so because they fear being misunderstood, but because they realize that something was not as it should be.

### 5.3. Deixis and the fascination of language

J wants to understand the world and finds language fascinating. He likes learning about it and experiencing the joy of using the correct versions. A typical example for this is how he reacted when he discovered deixis:

## D 4.1.96

Heute hat J zu mir in der Küche gesagt, als er gerade vom Wohnzimmer reinkam: "bin ich wieder da!" geht wieder ins Wohnzimmer, in dem sich P befindet, und ruft mir zu: "bin ich wieder weg!" kommt wieder rein: "bin ich wieder da!" Das fand er offensichtlich sehr lustig.

[Today J came to me into the kitchen from the living room and said: "bin ich wieder da!" ["I am here again!"]. Then he went into the living room, where P was, and calls to me: "bin ich wieder weg!" ["I am gone again!"] He comes back: "bin ich wieder da!" ["I am here again!"] He enjoyed himself visibly.]

This example is especially revealing concerning J's understanding of others' perspectives. He obviously adopts my point of view in saying "bin ich wieder weg" ["I am gone again"]. To achieve this, he had to abandon his egocentric starting point. This example reveals some early understanding of secondary deixis, which has been shown to require especial processing efforts (Sichelschmidt 1989). It seems that J acquired secondary deixis approximately parallel to primary deixis. I noted one of the first occurrences of dahinter "behind" even later than the previous example:

## D 20.1.96

J sucht einen bestimmten Gegenstand auf dem Tisch. "isse dahinter?" und zeigt auf eine Flasche, die ihm die Sicht versperrt.

[J searches for something on the table. "isse dahinter!" ["is it behind this?"] he asks and points at a bottle which is obstructing his view.]

The following example reveals that J seemed to be mentally concerned with deixis.

## V 2.2.96 16:07

J [tries to say 'Licht']

T: "du kannst doch auch 'ich' sagen, sag mal 'ich'!" ["But you can say 'ich'; say 'ich'!"]

J: "Mama!" ["Mama!"]

T: "sag mal 'ich'!" ["say 'ich'!"]

J: "du!" ["you!"]

L: "di di di"

T: "ja, Licht!" ["yes, 'Licht'!"]

J: "li"

T: "sag mal 'ich', Jannis!" ["say 'ich', J!"]

J: "'ich'" ["'ich'"]

T: "ja, prima! sag mal 'Licht'!" ["yes, fine! say 'Licht'!"]

J: "liht"

In this event, J had to overcome two difficulties at once: the pronunciation of "Licht" light, and the difference between deixis and citation. Possibly J was so fascinated by having discovered deixis at that time that he ignored the fact that I wanted him to pronounce a specific word.

#### 5.4. Conclusion

Several aspects of J's language and language awareness during his third year of life reflect his ability to take others' perspectives. This understanding is most evident in his interaction with L, but also confirmed by other criteria. J both imitated L's sounds and interacted with him in adaptation to his linguistic level. This implies that, in addressing him, he mostly restricted himself to the words that L understood. As soon as L was able to answer to yes/no questions, J used them preferably, following my example. The sound games between the children became more complex then. In line with L's developing linguistic knowledge, J started to imitate L's pronunciation to facilitate his understanding whenever it was necessary. He also helped him in articulating new words. All of these aspects show clearly that J was able to take his brother's perspective to a high degree, as regards his linguistic level.

Furthermore, J's language awareness is expressed in his sophisticated manner of imitating L. J imitated his brother's fashion of speaking far more often than he directly repeated utterances. J's way of reacting to misunderstandings as well as his attitude towards new linguistic discoveries such as deixis reflects his sense of correctness in language. The understanding of deixis, again, requires some degree of perspective taking. Language is a tool to solve problems in understanding others' points of view; and language awareness indicates that the child is concerned with the process of learning about others and the world.

## **6. Talk about the sibling - the case of information**

One of the features characterizing J's speech during his third year of life was that he preferred to talk about L instead of addressing him directly. In this chapter, I will have a closer look at this talk about the sibling. Obviously, the analysis is restricted by the fact that my procedure leaves no room for statistics. I will therefore give examples for each of the categories I found, and comment on the significance each category has concerning the question of egocentrism and perspective taking. Thus, my analysis is theoretical to a high degree, although it is based on naturalistic observation.

The theory that children's talk is functionally oriented (e.g. Halliday, 1978) does not offer an explanation for a child talking about his brother without expressing any personal needs. How, then, did J talk about L? It might be that he tried to inform me about something I did not know yet. In that case, a way to decide whether a child is able to estimate others' state of knowledge would be to divide between new, meaningful information, and supposedly new information. If such a distinction could be shown to make sense, this might be used to elaborate on the claim that the transfer of information is only possible via perspective taking abilities (see above: page 10; Völzing 1981; Billmann-Mahecha 1990).

A closer analysis, however, revealed that J's utterances could not simply be divided into these two categories. When J 'informed' me about something I already knew, I had the impression that the utterance was really not meant as an information, but rather as a comment, or an explanation, or aimed at sharing some excitement with me. Somewhat later, new categories emerged, such as talk about the future or the past. A further distinction is observable between comments directed to an interlocutor (me in most cases), and those directed to nobody and therefore categorized as egocentric speech.

### **6.1. Egocentric comments**

The first events in which J talked about his brother already occurred during his one-word-stage. At 18 months, I noted that J often uttered L's name "Kuka":

D 21.11.94

J sagt ganz oft "Kuka", am häufigsten in Verbindung mit L: wenn er ihn hört oder sich gerade mit dem Stubenwagen beschäftigt oder wenn wir rausgehen und L noch oben ist. Manchmal sagt er es aber auch so zwischendurch, scheinbar zusammenhangslos.

[J very often says "Kuka", mostly in connection with L: when he hears him, or when he occupies himself with the crib, or when we go out and L is still upstairs. It also happens that J mentions L without any discernible reason.]

I expect that all of these early utterances fit into the category of 'egocentric comment': I never had the impression that J wanted to tell me anything, or that he even directed the utterance to anybody. However, I had not begun with my video sessions yet; there is no way of controlling this impression. It should be noted that I did not think of any possible categories at that time; therefore I did not watch J's utterances closely concerning the distinctions mentioned above. Yet, in retrospect, it seems plausible that these early utterances are at the start of a development which led to the emergence of more sophisticated categories of talk about the sibling.

The following utterances are typical examples of egocentric comments, even though the actions which the speech accompanied were not necessarily egocentric:

V 30.5.95 17:21

J [puts on a hat; walks over to L]: "Kuka" ["L"]

J [puts hat on L's head]: "Kuka Hut" ["L hat"]

D 29.8.1995

L sitzt auf dem Hochstuhl, J kommt an und faßt seine Finger und sagt: "Nannis hel Dinger dett." (J hält die Finger fest).

[L is sitting on the high chair. J goes to him, takes his fingers and says: "Nannis hel Dinger dett." ["J holds fingers"]

D 31.8.95

L schmeißt einen Löffel vom Hochstuhl herunter, J kommentiert: "Kuka Nullus runtermis".

[L throws a spoon down from the high chair. J comments: "Kuka Nullus runtermis" ["L throws spoon down"]]

It seems that J enjoyed his new ability to use words, and did this whenever he could. In fact, my impression is that those purely egocentric comments were most common during the stage of rapid expansion of vocabulary. By the end of 1995, they had nearly disappeared; J's comments were mostly directed to other people, and they increasingly reflected clear intentions. In the following examples, which occurred much later, J seemed to be moderately concerned about something:

V 5.4.96 13:03

L [walks across J's toy train; something clatters]

J [not too excitedly; not addressing anyone]: "Lukas macht alles putt" ["L breaks everything"]

V 30.5.96 9:42

J [finds broken toy; does not seem too excited; not directed to anyone]: "hat Lukas das auch noch kaputtgemacht. Lukas hat das auch noch kaputtgemacht" ["did L break this, too. L broke this, too"]

I expect that people of all ages act like this from time to time: if they are concerned about something, they might talk aloud, even if they do not usually do so. It is conceivable that this is one step further than crying: instead of showing his distress by loud cries, which is what he did before and often still does, he expresses it calmly with words. Talking is obviously a more mature way of reacting than crying.

## 6.2. Simple comments

Although it is not possible to gather from my diary just when the distinction emerged between egocentric comments and those directed to another person, it

seems to have been present before I started my video sessions. The following example is from the first session.

V 15.2.95 18:10

T [puts L down to sleep]

J: "du Kuka" ["you L"]

Two weeks later, J tried to comment on his brother but lacked the words, which I had to provide then:

V 2.4.95 10:39

J [points to L; repeatedly]: "Kuka" ["L"]

T: "was macht der?" ["what does he do?"]

J: "Kuka" ["L"]

J [looks questioningly at T]

[dialogue is repeated several times]

T: "der schläft, oder?" ["he is sleeping, right?"]

Other examples from this stage of simple comments are the following:

V 10.9.95 10:26

J [fetches musical clock out of L's bed; puts it on; gives it to L]: "da!" ["there!"]

J [to T]: "Dik an (duk) Papa, Mama" ["music on (for L) Papa, Mama"]

D 26.9.95

J findet ein Stück Brot unter dem Hochstuhl, in dem L sitzt. Er gibt es L: "Butterbot hame, Mama".

[J finds a piece of bread under the high chair L is sitting in. He gives it to L: "Butterbot hame, Mama". ["have bread and butter, Mama"]

V 7.1.96 15:48

J [makes a "bridge" for L; to L:] "Lutas!" ["L!"]

L [climbs up the bed towards slide]

J [to T]: "hab ich Bücke macht" ["I have made a bridge"]

In these examples, J does not exhibit much emotional involvement, nor does he seem to think that I need to be informed about something. He simply puts his action into words and directs this comment to me.

### 6.3. Emotional comments

In the following examples, J obviously talks to me about his sibling because he is excited about something and wants to share this with me:

D 15.10.95

J läuft von einer Seite des Hochstuhls zur anderen, lacht dabei laut, L ebenfalls. J zeigt auf L, guckt zu mir und sagt: "Kuka latte putt!" (L lacht sich kaputt).

[J runs from one side of the high chair to the other, and both laugh aloud. J points to L, looks at me and says: "Kuka latte putt" ["L laughs his head off"]].

D 26.11.95

L beschäftigt sich mit einer Schublade in der Küche, J sitzt am Tisch, beim Essen. J guckt unter den Tisch, so daß er L sehen kann, und fragt: "Luki, was machtdu? Luki da drauf!" Kurze Zeit später wieder: "Luki, was machtdu? was machtdu?" Dann zu mir: "was macht Lutas? tuck ma, macht Lutas?" Dann kommt L unter den Tisch zu J's Stuhl gekrabbelt, an dem er nicht vorbeikommt. Dabei guckt er zu J hoch, der ihn angrinst. L lacht zurück, dann sagt J zu mir: "Lutas lacht!" und sie lachen sich noch eine Weile an.

[L is concerned with a drawer in the kitchen, J is sitting at the table, eating. J looks under the table so that he can see L, and asks: "Luki, was machtdu? Luki da drauf!" ["L, what are you doing? L up there!"] Somewhat later again: "Luki, was machtdu? was machtdu?" ["L, what are you doing? what are you doing?"] Then, to me: "was macht Lutas? tuck ma, macht Lutas?" ["what is L doing? look, what is L doing?"] Then L crawls under the table towards J's chair, which blocks his way. He looks up to J, who smiles at him. L laughs back, then J says to me: "Lutas lacht!" ["L is laughing!"]; and both laugh together for a while yet.]

D 16.2.96

L: "eiss" J: imitiert zunächst, dann zu mir: "Lutas sachde eiss!"

[L: "eiss"; J imitates the sound, then to me: "Lutas sachde 'eiss'!" ["L said 'eiss'!"]]

D 17.2.96

J nimmt L's Hand: "guten Tag!", dann zu mir: "hab ich 'guten Tag' gesagt!"

[J takes L's hand: "guten Tag!" ["good morning!"], then to me: "hab ich 'guten Tag' gesagt!" ["I said 'guten Tag'!"]]

J stuck to this habit longer than to simple comments; in fact, there is no reason why he should give it up at all - adults also share their experiences with others if they consider them important enough to mention even if the facts are obvious. These examples show the clear intention of meeting another's mind (see Bretherton, McNew, and Beeghly-Smith 1981).

It may seem that simple comments are difficult to distinguish from those utterances which aim at sharing some experience with me. Naturally, there is some degree of subjective interpretation. However, I consider it important to take J's emotional involvement into account. In the situation (V 10.9.95) where the musical clock is involved, J does not give the impression that he is emotionally affected; he just tells me somewhat casually that he put on the music for L. This is nothing special to him. However, from my everyday experience with the children I knew that it was very funny for J to say "guten Tag" good morning to L (D 17.2.96), as he had no such habit; and that J was very much interested in L's language development. Therefore, L's utterance "eiss" (D 16.2.96) made him quite excited. In addition, emotional involvement is, of course, often visible through nonlinguistic factors. Thus, I consider it feasible to distinguish between these categories.

Once the distinction is made, the revealing conclusion arises that simple comments are characteristic for a specific developmental phase, and then disappear after some time. Comments expressing emotional involvement do not altogether disappear, although they may occur with a specific frequency

during a time when the child is easily excited. My suggestion is that simple comments do not express a wish to meet another's mind, whereas emotional comments do. Some amount of perspective taking is needed to understand that it is at all possible to meet others' minds. Therefore, I consider emotional comments more sophisticated than simple comments.

#### 6.4. Explanations

At 27 months, J started to talk about his younger brother, or about his own interaction with L, with the intention of giving some kind of explanation. The following examples are put in chronological order to illustrate J's growing ability to understand about L's motives, and to express this understanding verbally:

D 10.8.95

J hält L's Flasche beim Trinken fest und sagt: "Nannis hitte mir", was wohl in etwa bedeuten sollte: "ich helfe Lukas".

[J holds L's bottle while L is drinking and says: "Nannis hitte mir" ["I help L"; the grammar is wrong, he actually says: "J help me"]]

D 25.8.95

J füttert L (per Hand mit einzelnen Erbsen), obwohl der ihn dabei öfter mal in den Finger beißt. Kommentar: "Kuka mag Erpe".

[J feeds L, i.e. he hands over single peas, even though L bites into his fingers from time to time. J's comment: "Kuka mag Erpe" ["L likes peas"].]

D 31.8.95

L weint; J sagt zu ihm: "hallo!". Dann hört L auf zu weinen, und J sagt zu mir: "nuch eint" (genug geweint).

[L is crying; J says to him: "hallo!" ["hi!"]. Then L stops crying, and J says to me: "nuch eint" ["enough cried"].]

D 31.8.95

J ist im Flur, L in der Küche: "komm her!" L kommt nicht: "keine Lus", kommentiert J.

[J is in the corridor, L in the kitchen, J says to L: "komm her!" ["come here!"]  
L does not come, and J comments: "keine Lus" ["does not feel like it"]]

D 31.8.95

Ich füttere L, er spuckt es wieder aus. J: "Kuka make mehr!"

[I feed L, who spits it out again. J: "Kuka make mehr!" ["L does not want any more!"]]

D 8.9.95

J informiert mich: "Kuka make mehr Nanane, Mama!", als L ein Stückchen Banane wieder aus dem Mund quetscht.

[J informs me: "Kuka make mehr Nanane, Mama!" ["L does not want any more banana, Mama!"], as L presses the banana out of his mouth again.]

V 2.2.96 16:18

J [moves chair so that L can climb up to the slide; to T]: "Lukas kann nicht so hoch!" ["L cannot climb that high!"]

D 18.2.96

Wir stehen am Bahnhof, L im Buggy, J steht daneben. Er schiebt ihm die Mütze hoch und sagt zu mir: "hab ich Müttüt hocheschiebt! besser sehen tann!"

[We are at the train station, L in the buggy, J stands beside him. J moves L's cap upwards and says to me: "hab ich Müttüt hocheschiebt! besser sehen tann!" ["I moved up the cap! can see better!"]]

D 6.6.96

J macht in letzter Zeit öfter Aussagen wie z.B. heute, als L sein Essen nicht weiteraß: "Lukas ist fertig, glaub ich"; oder als L schlief und ich J verbot, weiter Krach zu machen: "dann weint der Lukas."

[J often makes utterances such as today, when L refused to go on eating: "Lukas ist fertig, glaub ich" ["L has finished, I think"]; or when I told J to stop being noisy because L was sleeping: "dann weint der Lukas" ["then L will cry"]].

These examples clearly reveal J's increasing ability to take L's point of view. He helps him and understands why he acts in a certain way; moreover, J is able to put his insights into words. Increasingly, those utterances serve as meaningful information to explain J's own or L's actions. In fact, the first utterances which I considered 'real new information' occurred at the same age as the first cases of explanation.

## 6.5. New information

The following examples illustrate J's increasing ability to estimate another's state of knowledge.

D 4.9.95

J holt Frootloops aus der Packung, und ich sage: "Iß mal deine Frootloops auf" (er hat noch welche in der Schale). J berichtet mich: "ne, Tuka pupus auf" (er hat sie ja nicht für sich geholt!) und füttert ihn.

[J fetches some cereals called 'Frootloops' out of their box, and I tell him to finish his own frootloops first. J corrects me: "ne, Tuka pupus auf" ["No, L eat frootloops"] - he did not fetch them for himself. Then he feeds him.]

D 8.9.95

Als ich heute abend noch einmal ins Zimmer kommen mußte, weil L schrie, sagte J: "Nannis Kuka aufweck".

[Tonight I had to go back into the children's room, because L cried. J told me: "Nannis Kuka aufweck" ["J woke L"].

In the first example, J understands the intention of my utterance and answers accordingly, correcting my error. In the second example, it is not clear whether J is aware of my ignorance of the situation; he might have used just the same words if I had been in the room. Other examples occurring at about the same

time, however, reveal that J had developed some understanding of others' minds.

D 13.9.95

J gibt L die Flasche zurück, die L gerade weggeworfen hatte: "da, Tuka. dricke Lalet". L hält die Flasche verkehrt herum, J weist ihn darauf hin: "kehrt um!". Dann tropft etwas heraus: "Tuka keckert, Mama. bauber!"

[J gives L the bottle back, which L had thrown away, and says: "da, Tuka. dricke Lalet". ["there, L. drink bottle"]. L holds the bottle the wrong way, J informs him: "kehrt um!" ["wrong way!"]. Then something leaks out, and J tells me: "Tuka keckert, Mama. bauber!" ["L spill, Mama. clean!"]]

In this situation, J both informs me about the fact that L spilled the liquid, and he informs his brother about his error. At other times, he informed other people about events he considered interesting:

V 25.9.95 18:21

J [plays with toy train, then runs to another room where P is and tells him]: "fährt er los!" ["it moves off!"]

J [to T out of kitchen]: "Nannis (...) Nulluck auf!" ["J (...) eat yoghurt"]

D 28.10.95

Ich frage: "soll ich für dich auskratzen?" (den Joghurt); J bejaht und ich tue es. Er ißt den zusammengekratzenen Joghurt auf und gibt mir dann wieder den Becher: "du austatte!" Dasselbe geschieht noch einmal. Dann hört er P die Treppe herunterkommen und informiert ihn, wie er es gerne tut, über die momentane Lage: "hallo half! Mama ausetatte!" - Im Geschäft hat er sich mit einem Schild befaßt, das dabei an einer Seite abging. Da ruft er mich und sagt: "abedange!"

[I ask: ["shall I scrape it out for you?"], meaning the yogurt. J agrees and I do it. He eats what I scraped out and gives me the cup back: "du austatte!" ["you scrape out!"] The same happens once again. Then he hears P come down the stairs and informs him, as he likes doing: "Hallo half! Mama ausetatte!" ["Hi, A! Mama scraped out!"] - In a shop, he was concerned with some sign, which

then broke off at one side. Then he calls me and says: "abedange!" ["broke off!"]]

Once I tried using him as a messenger, and it turned out that he was capable of managing this task at the age of 29 months:

D 30.10.95

Ich sage zu J: "geh mal zu Papa, frag ihn, ob er Hunger hat." J geht zu P ins Zimmer, sagt (in aufsteigender Intonation): "Hunger?", als die Antwort ihm wohl noch nicht klar genug kam (bzw. keine), noch mal (aufsteigend): "du Hunger?" Nach A's "Ja" sagt er: "Gut" und geht wieder raus, macht die Tür hinter sich zu, und erzählt mir dann: "Papa Hunger".

[I say to J: ["Go to A, ask him if he is hungry."] J goes to the room where P is, asks (with raising intonation): "Hunger?" ["hungry?"]. There is no clear answer, so he asks again: "du Hunger?" ["you hungry?"] A's answer is Yes, and J says: "gut" ["okay"] and leaves the room again, shuts the door behind him and tells me: "Papa Hunger" ["P hungry"].]

I consider this event as revealing certain perspective taking abilities. J seems to be perfectly aware of the state of knowledge of the people involved. The same applies to the following examples:

V 11.11.95 15:51

J [plays on a toy piano]

L [sits beside J]

J [moves the piano towards L]: "du einmal" ["you once"]

J [walks towards T, who has not watched]: "Tuka einmal. Tuka einmal. bin fertig. Tuka tann/ tann. Tuka tann." ["L once. L once. have finished. L may/ may. L may."]

T [finally reacting]: "ja?" ["yes?"]

J: "ja." ["yes."]

T: "prima." ["fine."]

D 20.1.96

Ich gehe in mein Zimmer, L folgt. Dann läuft J hinterher: "komm Lutas, Mama muß arbeiten!" L kommt aber nicht. J läuft zu mir (ich bin inzwischen schon wieder im Wohnzimmer): "Lutas will nich!"

[I go into my room, L follows. Then J runs after him: "komm Lutas, Mama muß arbeiten!" ["come, L, Mama must work!"] L, however, does not come. J runs to me, who am in the living room again: "Lutas will nich!" ["L does not want!"]]

## 6.6. Conveying L's needs: mediating roles

At this point, J was aware both of what is new information to me, and of L's wishes. He combined both insights to make me meet L's needs:

D 28.1.96

L hat seinen Toast gerade aufgegessen, da schiebt mir J seinen Teller herüber: "bitte Lutas Bot geme! Lutas mehr Bot hame!"

[L has just finished his slice of toast, then J pushes his plate towards me: "bitte Lutas Bot geme! Lutas mehr Bot hame!" ["please give L bread! L wants more bread!"]]

D 2.2.96

J versucht L die Flasche zu geben, er schiebt sie weg und kleckert dabei. Später zeigt L auf die Flasche und vokalisiert. J zu mir: "Lutas will das hamen!" Ich: "ja, dann gib sie ihm doch." J sagt zu L: "nich keckern, Lutas!" und gibt ihm die Flasche.

[J tries to give L the bottle, he pushes it away and spills something out. Later, L points to the bottle and vocalizes. J to me: "Lutas will das hamen!" ["L wants to have this!"] I: ["yes, give it to him."] J says to L: "nich keckern, Lutas!" ["do not spill, L!"] and gives him the bottle.]

Sometimes, J helped meeting L's needs and informed me about it:

D 12.2.96

Beim Mittagkochen ist L ungeduldig und weint. Ich habe keine Zeit für ihn, plötzlich ist es trotzdem still und J läuft zu mir: "habich Schnuller geme! (emem) immer weinen muß!"

[While I prepare the dinner, L is impatient and cries. I do not have time for him. Suddenly, however, everything is quiet and J runs to me: "habich Schnuller geme! (emem) immer weinen muß!" ["I have given dummy! not always must cry!"]]

In fact, J took L's discomfort so seriously that he sometimes felt a need to inform me about it, even if L had long since stopped crying:

D 22.4.96

Wenn L weint und ich im anderen Zimmer bin, kommt es vor, daß J zu mir läuft und mich informiert: "Lukas weint."; das auch oft noch, wenn L schon längst aufgehört hat.

[When L cries and I am in another room, it occurs that J runs to me and informs me: "Lukas weint" ["L is crying"]. He often does this even though L has stopped crying long ago.]

In July 1996, I noted that J both informed me when important things happened in another room, and that he had taken on a habit to inform L about my utterances which he had not (or might not have) heard. It also happened that J excused himself by referring to L:

D 14.7.1996

L und J waren in meinem Zimmer, und ich rief J ins Kinderzimmer. Als er gerade ankam, hörte er L rufen: "Dadie! gene!" (Jannis! Geht nicht!), und er sagte zu mir: "Lukas hat mich gerufen! ich gehe mal hin, Lukas helfen!"

[L and J were in my room, and I called J from the children's room. When he arrived, he heard L call: "Dadie! gene!" ["J! I can't!"], and he told me: "Lukas hat mich gerufen! ich gehe mal hin, Lukas helfen!" ["L has called me! I'll go help L!"]]

If J took on the role of a mediator in these events, he did so even more explicitly, and sometimes enthusiastically, in certain conversations:

V 3.8.96 18:02

J [is on his way to fetch another book]: "noch ein Buch, ja? Petzi-Buch."  
["another book, yes? Petzi-Book."]

L [gets a book from the floor]: "nana"

T: "das haben wir doch schon gehabt, das mit den Negerlein, Lukas. hatten wir doch schon" ["we have already read that one, with the little negroes, L. we had that already"]

J: "Lukas will das nochmal lesen!" ["L wants to read that again!"]

L: "atzing"

J [comes back without another book]: "Lukas will das nochmal lesen"

L: "atzing"

T: "du willst das nochmal lesen? das hatten wir doch schon"

L: "sese" ["read"]

J: "nochmal nochmal singen" ["again again sing"]

T: "nochmal singen?" ["sing again?"]

J: "hm" [yes]

T: "oder nochmal zählen" ["or count again"]

J: "nochmal singen" ["sing again"]

T [sings]: "zehn kleine Negerlein"

In this event, J understands L's wish and supports it, which is meaningful as I do not show much inclination to read that one book once again.

## 6.7. Past and future

Along with the skill to convey new information to others, J developed the ability to talk about past and future events. In some cases, it is not clear whether J tells about his intentions because he thinks aloud, or whether he really means to inform his listeners. The first such event which I noted was probably a case of egocentric loud thinking; even if J's behaviour itself was certainly not egocentric.

## D 4.9.95

Im Zug hat J einen Lutscher, da fällt ihm ein: "Kuka auch leck". Er beugt sich im Buggy nach vorn, versucht L's Kopf zu drehen, und dann schiebt er ihm den Lutscher in den Mund. Das macht er dann noch öfter, und lacht dabei und sagt: "lecker".

[We are in a train; J has got a lollipop. Suddenly it occurs to him: "Kuka auch leck" ["L also taste"]. He bends forward in the double buggy, tries to move L's head around, and then puts the lollipop into L's mouth. He does this several times, laughs and says: "lecker" ["good"].]

At the age of 32 months, J obviously means to inform me about his intentions:

## D 1.2.96

J stellt sich vor den Hochstuhl, klettert hoch: "Lutas hochklettern!" (also: zu L hochklettern). Dann: "Lutas hohekettert". Ich frage: "und jetzt?" - "Lutas steicheln!" Er tut's, klettert wieder runter, spielt mit L das altbekannte "bö-kick" Spiel: hoch und runter mit verbalem Kommentar, recht oft. Dann zu mir: "hab ich bö-kick gemacht!"

[J stands in front of the high chair, climbs up: "Lutas hochklettern!" ["climb up to L!"]. Then: "Lutas hohekettert" ["climbed up to L". I ask: "und jetzt?" ["what next?"] J: "Lutas steicheln!" ["stroke L!"] He strokes L, climbs down again; then plays with L their favourite game involving the nonsense syllables: "boh-kick": up and down, with verbal comment, fairly often. Then J says to me: "hab ich bö-kick gemacht!" ["I have played boh-kick!"]]

Talk about past events occurred at about the same time as talk about future events:

## D 10.11.95

J erzählt A, daß L beim Einkaufen im Buggy geschlafen habe (L ist jetzt aber wach und mit in der Küche): "Buggy Tuka häte noch".

[J tells P that L slept in the buggy while we were shopping (L is now awake and in the kitchen with us): "Buggy Tuka häte noch" ["L sleep in the buggy"].]

V 30.5.96 9:46

J [points at old scratch at L's leg; to T, several times, excitedly]: "Lukas hat da ein Aua gemacht!" ["L was hurt there"]

L [does not say anything or cry]

T [does not understand at first; then comes from other corner of the room to look]: "(...) ach ja, das ist ja schon alt, das tut jetzt nicht mehr weh" ["oh yes, this one is old, it does not hurt any more"]

In the latter situation, J did not seem to think that L has hurt himself right at that moment so that I should comfort him. To the contrary, I had the impression that J wanted to reconstruct the past event together with me. J generally did not talk much about past events at that time. He usually talked about the past only when he was concerned about something. The following diary note exemplifies this:

D 9.3.96

L ist (ohne sich zu verletzen) in die (leere/ trockene) Badewanne gefallen, hat sich erschreckt und geschrien. J saß oben auf dem Wickeltisch und hat schnell auch angefangen zu schreien, da mußte ich beide trösten. Am selben Abend hat J dann noch davon geredet: "Lukas badebanne fallen". Am nächsten Abend sagte J dann: "bin ich badebanne fallen" (!), und: "bin ich ganz naß worde." Empathie? Identifikation?

[L fell into the dry and empty bathtub without hurting himself. He was dismayed and cried. J sat on the swaddling desk from which L had fallen and soon began to cry as well, so that I had to comfort both. That evening J talked about it: ["L fell bathtub"]. The next evening, J said: ["I fell bathtub"], and: ["I got very wet"]. Was that empathy, identification with the brother?]

## 6.8. Conclusion

My original idea that there must be some distinction between real and supposedly new information, does not seem to hold at any point in J's development. Although he did go through a stage in which his comments, egocentric or other-directed, did not seem to serve any other functions than the joy of using the right words, I never had the impression that J wanted to inform me about something I already knew. In that case, he would have exhibited an

inability to take others' perspectives. The categories which emerged instead of the hypothesized category of supposedly new information, however, reveal different degrees of understanding. At first, talk about the sibling occurred in an obviously egocentric fashion. Explanations, the mediation of L's wishes and the wish to share an emotion, on the other hand, do involve some amount of perspective taking. Finally, the ability to estimate others' state of knowledge emerged, and real new information could be conveyed.

Possibly J, to begin with, did not feel any need to inform at all, unconsciously assuming that grown-ups know everything. Instead, he communicated other important aspects, or just used his newly acquired ability to accompany actions with appropriate expressions. When he started to inform, then, he had realized that under certain conditions adults need to be informed, and acted accordingly.

In conclusion from this analysis of J's talk about the sibling, the following categories emerged in this sequence:

1. Egocentric comments: speech accompanying action without addressing anybody
2. Simple comments: speech accompanying action with no discernible communicative intention, but directed to an interlocutor
3. Emotional comments: a discernible intention to share some excitement with an interlocutor
4. Explanations
5. Conveying L's wishes
6. New information
7. Talk about past and future

Just as in other aspects of J's interaction with his brother, increasing perspective taking abilities are also revealed in his talk about the sibling. The question of when, and how, children acquire the ability to convey real new information, and what other categories of talk develop along with this ability, calls for further investigation.

## 7. Imitation

Many of the observations described above suggest that J showed perspective taking abilities from a very early age; possibly even before he learned to talk using more than one word at a time. However, one important aspect has been left out of consideration so far. In how far is J's verbal behaviour based on imitation? My impression, from early on, was that J talked to L in much the same way as he heard his parents do. This is imitation in the sense that Ferrier (1978; 303) proposed:

Imitation has generally been defined as the exact repetition of the whole or part of a preceding utterance produced by someone other than the child and following in fairly rapid temporal succession. (...) I would like to suggest that there is a second type of imitation, which I shall term 'dependency', not operating under those temporal constraints and not so readily picked up by the itinerant researcher, but available to the mother who can observe her child in the repeated and routine social contexts in which they interact.

According to Ferrier, imitation in this sense appears to be a productive strategy (see also Moerk 1989 for a closer look at the dichotomy of spontaneous versus delayed imitation). Children start by imitating their caretakers in ritualized contexts. Then, they gradually depart from this behaviour, adding an increasing proportion of own ideas. If such imitative behaviour plays a greater role in early language development than previously assumed, certain nonegocentric aspects in the linguistic behaviour of young children might mean less than they seem. As indicated by Ferrier, imitation in this wider sense is hard to discover by investigators who have only a limited time span for observation at home or in the laboratory. Caretakers are the only ones who are capable of deciding which utterances are imitated (to a certain degree) or altogether spontaneous. As few linguists have analysed the language development of their own children so far, obviously there is a deficit concerning this point.

It could be argued that there is nothing new in the discovery that language development is based on imitation in the wider sense. However, the question at issue is whether not only language development as a whole, but, more specifically, the development of certain perspective taking abilities as reflected in language is originally based on imitation, and only gradually takes on individual traits.

In this chapter, I will give some examples of J's utterances directed to L, which might be analysed as nonegocentric if they were not basically imitated. For this exemplification, I chose certain events in which I could, in retrospect, trace the origins of J's utterances to my own habits. The first example is a diary note which I made when J was 26 months old:

26.7.1995

Als L schreit, rennt J hin: "was ist?"

[L cries; J runs to him: ["what's up?"]]

This incident indicates the lively interest which J showed towards his younger brother when he himself was merely two years old. However, J did nothing else than imitate what he had seen me do many times. It was not necessary for J to realize that something was wrong in order to ask for the reason; even though he probably understood this in any case. For this reason, the above example does not indicate much concerning J's perspective taking abilities. The next one is somewhat more interesting:

D 17.8.1995

L sitzt und spielt; J kommt an, setzt sich dazu: "hallo Tuka. da!" Er gibt L einen Duplostein und guckt zu, was L damit macht. "da! nich, Tuka!" als L es in den Mund nimmt. Er nimmt es weg, spielt selbst damit. Zunächst ist er dabei noch L zugewandt, als wollte er ihm zeigen, wie man Duplo-Steine zusammensetzt. Dann "vergißt" er L, spielt vertieft alleine.

[L is sitting on the floor and playing; J approaches him and sits beside him: "hallo Tuka. da!" ["hallo, L. there!"] He gives a toy brick to L and watches L's reaction. He says: "da! nich, Tuka!" ["there! No, L!"], when L puts it into his mouth. J takes the brick away and plays with it himself. At first, he positions himself such as to show L how to put the bricks together. Then he 'forgets' L and becomes absorbed in his play.]

Without knowledge of my habitual behaviour as a caretaker, it might seem that J had developed fairly sophisticated perspective taking abilities which made him realize that taking bricks into the mouth can be dangerous. However, J had

watched me say "nein!" no! many times before when L put something inedible into his mouth, so that it was not difficult for him to imitate my (nearly) ritual utterance. Concerning the next examples, the case is similar.

D 11.9.95

L spielt mit der Tür, J warnt ihn: "paß auf, Dinge dem" (Finger klemm).

[L is playing with the door; J warns him: "paß auf, Dinge dem" ["watch out, fingers jam"]]

D 25.8.95

L beißt den Hochstuhl an, auf dem er sitzt, J sagt: "Kuka lat das."

[L gnaws at the high chair on which he is sitting; J says: ["L, leave it alone."]]

D 1.9.1995

L spielt mit Zeitschriften, ich sage zu ihm: "nicht, Lukas, nicht dabei!" Ich ziehe ihn von den Zeitschriften weg und zeige ihm ein Holzpuzzlespiel: "damit kannst du spielen". Ich gehe ein Stück weit weg, und L wendet sich wieder den Zeitschriften zu. Nun kommt J an und wiederholt ziemlich exakt das, was ich gemacht habe: "nich, Tuka! nich abei!", er versucht ihn wegzuzerren. Dann zeigt er auf die Puzzleteile: "da piele." (Leider hört L auch auf ihn nicht).

[L is playing with magazines, I tell him: ["no, L, leave it!"] I draw him away from the magazines and show him a wooden puzzle: ["you might play with this."] I go some steps away, and L moves back to the magazines. Now J approaches him and repeats fairly exactly what I did before: "nich, Tuka! nich abei!" ["no, L, leave it!"]; then he tries to draw him away. Then, he points at the puzzle: "da piele." ["play this"]. Unfortunately, L does not listen to him either.]

In these examples, J is obviously aware that he is the older one. L does things which J has stopped doing, and therefore he feels in the right position to support my educational attempts. In some cases, J understands what I mean before L has reacted to it, and then tries to act as a mediator. In other cases, J anticipates my usual reaction. At times, J succeeds in comforting L by imitating my ritual utterances:

D 29.11.95

Abends, beide im Zimmer, L weint und J sagt, wie er es von mir gehört hat: "Lutas, nich weinen! schlafe!", und L wird tatsächlich bald ruhig.

[At night, both are in their room, L is crying and J says, just as he heard me saying before: "Lutas, nich weinen! schlafe!" ["L, don't cry! sleep!"], and L calms down soon.]

In the next example, it seems that J remembers what I usually say when small things are lying around. No deeper understanding than memory of routine is necessary to act as J does here:

D 13.1.96

J findet ein kleines Stück Plastik, das von einem Spielzeug abgebrochen ist, und zeigt es mir. Ich: "das ist wohl abgebrochen, das kannst du wegschmeißen, ist kaputt." J: "Lutas in Mund!" Ich: "ja, schmeiß mal lieber weg." Er geht aus dem Zimmer. Allerdings habe ich das Stück später auf dem Fußboden wiedergefunden.

[J finds a small piece of plastics which broke off some toy, and shows it to me. I say: ["That one probably broke off, you can throw it into the bin, it is broken."] J: "Lutas in Mund!" ["L in mouth!"] I: ["yes, throw it into the bin."] He walks out of the room. However, I found the piece later lying on the floor.]

The following description from my diary two months before J's third birthday indicates that making others do what one wants is something that needs to be trained. If J had taken L's perspective, he might have realized that it is no use crying or grabbing something away from him. However, the fact that J finally managed to ask L in a socially acceptable way is, at least in part, an outcome of training and imitation.

D 16.3.96

Wenn J aus der Flasche trinken will, die L gerade hat, dann schreit er meist zunächst: "meine!" oder gibt nur Töne von sich. L schüttelt heftig mit dem Kopf und hält die Flasche ganz weit weg (vergißt dabei oft selbst zu trinken). Ich weise J darauf hin, daß er L fragen soll, und er sagt dann im freundlichen

Ton und mit Frageintonation: "ich das haben?" L trinkt dann noch in Ruhe zu Ende und hält dann J die Flasche hin. Manchmal auch nicht; aber tendenziell ist der Ablauf eher so wie beschrieben.

[When J wants to drink from a bottle which L has in his hands, he often initially cries: "meine!" ["Mine!"], or just vocalizes. L shakes his head vehemently and holds the bottle away from J (forgetting to drink himself). I tell J that he should rather ask L, and he then asks in a friendly way and with interrogative intonation: "ich das haben?" ["I have that?"] L drinks at his leisure and then holds the bottle out to J. This is not always the way it happens; but there is a tendency for the children to act in this way.]

Long after J's third birthday, certain events indicate that acting on the grounds of imitation rather than sophisticated perspective taking abilities is no question of age:

D 10.1.97

J zieht sich an. Zu L: "du mußt dich auch anziehen, sonst wird dir kalt. ja, machst du das?" Hintergrund: es hat einige Wochen Anstrengung gekostet, J beizubringen, daß er sich morgens gleich anziehen muß. Jetzt scheint er es begriffen zu haben; d.h. es klappt morgens streßfrei - prompt will er es L beibringen.

[J puts on his clothes. To L: "du mußt dich auch anziehen, sonst wird dir kalt. ja, machst du das?" ["you must put on your clothes as well, or else you will be cold. yes, will you do that?"] The background for this is that it cost me several weeks of hard work to convince J that he should put on his clothes right after getting up. Now he seems to have understood the point, i.e. there are no more arguments in the mornings. Straight away, he wants to teach L the same.]

Unfortunately, the origins of J's verbal behaviour are not always as clearcut as in these examples. The point I want to make here is simply that, in the analysis of perspective taking abilities, it should be remembered that there is some degree of imitation in the children's utterances. This idea is much the same as Leslie's (1987) warning mentioned above in the context of pretend play. Just as children's pretend play must be distinguished from simple functional play, their nonegocentric utterances must reveal enough individual reflection to

indicate that real perspective taking was needed. The comparison is all the more reasonable as pretend play is often used as an indicator of children's perspective taking abilities. (Pretend play is left out of this analysis for the simple reason that J was not interested in pretending until very recently.)

The observations I made in the previous chapters may to some degree suffer from the same deficit: I cannot always determine what made the children act as they did. I had the impression, however, that there were tendencies in the children's development which reveal increasing perspective taking abilities, even if several examples might be less significant than they seem. For this reason, it is inevitable to analyse far greater amounts of data, and to observe closely the everyday interaction of further children.

## **8. Being understood as the children's aim in learning how to speak?**

In Chapter I.2.2., the controversy between children's skills being communicative, or conversational, was worked out. Do children aim at achieving personal goals by directing others (Shatz and O'Reilly 1990), using merely conversational skills, or do they try to meet others' minds by way of their communicative skills (Golinkoff 1993)? This question is important in the context of children's perspective taking abilities. If children just mechanically use varied techniques in order to make others function as they wish, no perspective taking is necessary.

To my mind, both views are somewhat one-sided. Furthermore, both have left out one important aspect. Living together with children, it is not hard to see that they often try to be like grown-ups. They love being able to do things they could not do before; older siblings love being superior to (or somewhat more mature than) their younger siblings. Simplistic as it may seem, my suggestion is the following: Children learn, in part at least, for the sake of it. And this idea is not far-fetched considering that grown-ups, as well, are often interested in things (abilities, ideas, games) that seemingly lead to nothing. In fact, how could one know what something leads to before one learns about it? Life is interesting for everyone; for children, to whom everything is new in the first place, this must even more be true.

Children start by imitating others, in gestures and language. After having gained some basic insights, they realize that language, for instance, can be used a) to influence others and achieve personal goals, and b) to meet others' minds. Naturally, influencing others is important for children to begin with; but common sense tells us that even babies get their essential needs met simply by crying; there is no real need to learn to talk. Assuming that children learn to talk because they want to meet others' minds from the start seems even more far-fetched.

My data presented in the previous chapters, along with my subjective impression created by living with children, suggest that children enjoy understanding the world. Even more so, they enjoy learning to talk, and using the right words. Much imitation, in the wider sense, is involved at first; gradually the children add an increasing amount of own ideas as they realize the wide field of opportunities which language provides. One of those opportunities is the understanding and meeting of others' minds.

## **9. Conclusion and future research**

The first half of this paper summarized the current literature on the linguistic aspects of perspective taking in siblings. In the second half, I added several personal insights gained from everyday life with children. I supported those suggestions by exemplary anecdotal evidence collected in a diary or from video sessions. The shortcomings of my data are based on the facts that I did not design any experiment to specifically address any of the issues discussed in the theoretical part, and I did not include statistics. My theory is that life with children is the most natural source for psycholinguistic insights. The next step should be to prove via specifically designed experiments whether these suggestions are generalizable.

The children's growing perspective taking abilities were shown both linguistically and nonlinguistically in the following aspects of their everyday interaction:

1. Teasing and comforting
2. Sharing
3. Understanding another's abilities
4. Coordinating action.

A closer look at the language that J directed to L revealed that J's perspective taking abilities were reflected in his language in two senses: the first sense is the way in which J's mental abilities come into play through his verbal interaction with L. An example of this is the way in which another's will can be influenced: this skill is not acquired at once but in certain developmental steps. The second sense is the degree in which J is able to tune in to L's speech: It turned out that J talked to L in much the same way as I did. He was able to adapt to L's linguistic level from early on; asking only questions that L understood etc. Certain examples revealed that J was concerned with language, and that he exhibited a high degree of language awareness. This shows his interest in understanding others, their language, and the world in general.

Furthermore, J's talk about the sibling turned out to reveal highly interesting aspects of his understanding. The following categories were worked out:

1. Egocentric comments
2. Simple comments
3. Emotional comments
4. Explanations
5. Conveying L's wishes
6. New information
7. Past and future.

These categories of talk about the sibling exhibit a clear development in the direction of more sophisticated psychological understanding.

Attention was then called to a certain caveat: The importance of imitation must be kept in mind in child language research in all aspects, including the development of perspective taking abilities. It may be that certain aspects of children's verbal behaviour reveal nothing more than a fairly sophisticated ability to imitate, rather than to take another's perspective.

Finally, the question of why children communicate at all was considered once more. It is conceivable that children learn for the sake of it, and then learn to take advantage of all those opportunities which language, and everything else they have learned, provides. One important aspect is the opportunity to understand and meet others' minds.

A bulk of open questions remains; in fact, the work has only begun. It might, for instance, be revealing to analyse several video sessions closely concerning the question of egocentric versus social speech. Furthermore, researchers might be interested in categorizing the dialogues of certain video hours as far as the question of 'real new' versus 'supposedly new' information is concerned. So far, I have merely cited examples which I found especially interesting. Video films, however, offer many further opportunities.

Much more research could be invested concerning the question of the influence of social aspects on the development of psychological understanding. Children could be observed at home and at school, or kindergarten, to find out about the significance of their experiences with peers versus family members. At the same time, perspective taking abilities might have an impact on children's social activities. The mutual influence of these two aspects is as yet relatively unexplored (see Brown and Dunn 1991; 1996). Belief and desire understanding might be taken into account here as well (Bartsch and Wellman 1995).

Concerning this paper, the diverse categories which I proposed need further exploration. The understanding of how to influence another's will, for instance, might or might not develop in a similar way in other children. Children's talk about their siblings could be analysed closely by other researchers as well. A further point is the question of self-corrections. Although it has been suggested that children correct themselves because they fear being misunderstood (Tomasello 1995b), my impression is rather that they do so because of their sense of correctness. This issue is yet to be explored. Finally, the significance of imitation has not yet been analysed closely enough. Rather, it seems that it is widely accepted a priori that children exhibit deep understanding in their linguistic behaviour. I question this view and propose that experiments should be specifically designed, or home observations carried out on a larger scale, to address this issue.

Although it is clear that there are many open questions to explore yet, it cannot be denied that important developmental steps take place during the third year of life. At age two, rudimentary understanding is exhibited in certain aspects of verbal as well as nonverbal behaviour. By age three, or three and a half, children have grown visibly more mature. The question of how exactly, and why, this happens will remain a point of interest for some time yet.

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