



# 1- and 2-year-olds' expectations about third-party communicative actions



Gudmundur B. Thorgrimsson<sup>a,\*</sup>, Christine Fawcett<sup>b</sup>, Ulf Liszkowski<sup>a,c</sup>

<sup>a</sup> Max-Planck Research Group, Communication Before Language, Max Planck Institute for Psycholinguistics, Wundtlaan 1, 6525 Nijmegen, Netherlands

<sup>b</sup> Department of Psychology, Uppsala University, Von Kraemers allé 1, S-751 42 Uppsala, Sweden

<sup>c</sup> Department of Developmental Psychology, University of Hamburg, Von-Melle-Park 5, 20146 Hamburg, Germany

## ARTICLE INFO

### Article history:

Received 13 August 2014

Received in revised form 19 January 2015

Accepted 10 February 2015

Available online 10 March 2015

### Keywords:

Action understanding

Third-party interactions

Turn-taking

Communicative development

Eye tracking

## ABSTRACT

Infants expect people to direct actions toward objects, and they respond to actions directed to themselves, but do they have expectations about actions directed to third parties? In two experiments, we used eye tracking to investigate 1- and 2-year-olds' expectations about communicative actions addressed to a third party. Experiment 1 presented infants with videos where an adult (the Emitter) either uttered a sentence or produced non-speech sounds. The Emitter was either face-to-face with another adult (the Recipient) or the two were back-to-back. The Recipient did not respond to any of the sounds. We found that 2-, but not 1-year-olds looked quicker and longer at the Recipient following speech than non-speech, suggesting that they expected her to respond to speech. These effects were specific to the face-to-face context. Experiment 2 presented 1-year-olds with similar face-to-face exchanges but modified to engage infants and minimize task demands. The infants looked quicker to the Recipient following speech than non-speech, suggesting that they expected a response to speech. The study suggests that by 1 year of age infants expect communicative actions to be directed at a third-party listener.

© 2015 Elsevier Inc. All rights reserved.

## 1. Introduction

The ability to understand and anticipate the actions of other people is an essential part of human development. The rudiments of this ability are found in infancy, enabling infants to learn from and communicate with others before they develop the means to participate in linguistic exchanges. Infants monitor others' actions with interest and understand much about what goes on when people act on their environment. They understand that actions can be directed at objects (Behne, Carpenter, & Tomasello, 2005; Woodward, 1998), and they infer unseen goals of ongoing actions (Nielsen, 2009; Southgate & Csibra, 2009; Southgate, Johnson, El Karoui, & Csibra, 2010). Recent eye tracking studies show that infants also make visual anticipations to the goal location of actions, such as an arm transferring a ball into a bucket (Falck-Ytter, Gredebäck, & von Hofsten, 2006), an actor bringing a cup to her mouth (Hunnus & Bekkering, 2010), or a spoon to another person's mouth (Gredebäck & Melinder, 2010).

\* Corresponding author. Tel.: +31 24 3521490; fax: +31 24 3521213.  
E-mail address: gudmundurbjarki@gmail.com (G.B. Thorgrimsson).

Of course, not all human actions involve an observable physical movement toward a goal object. People act on each other remotely through speech, gesture, and other forms of communicative actions. Infants are surrounded with the communicative interactions of others, and observing and overhearing third-party interactions forms a large part of infants' communicative experience, especially in communities where it is less common for caregivers to directly address preverbal infants (Brown, 1998; Heath, 1983; Ochs & Schieffelin, 1984, see also Lieven, 1994). How much do infants understand about others' interactions? Do they understand communicative actions as attempts to influence other people (i.e. communication as person-directed action)? Several studies indicate that infants in their second year can learn through observing object-directed actions that communicate information to a third party. For example, at 14 months, infants can infer the location of a hidden object from a pointing gesture addressed to a third party (Gräfenhain, Behne, Carpenter, & Tomasello, 2009). At 18 months they can learn novel object labels from third-party labeling (Floor & Akhtar, 2006), and learn from object-directed emotions displayed to a third party (Repacholi & Meltzoff, 2007). These studies reveal that infants understand and make use of information conveyed through communicative actions that are not directed to them, demonstrating that infants' understanding extends beyond their own interactions. It is less clear, however, what infants understand of the structure of the interaction itself, that is, whether they expect communicative actions to be directed at interactants. Attending to and anticipating how people respond to communication in third-party interactions would facilitate social-observational learning, and provide evidence that infants' understanding of communicative exchanges extends beyond the second-person understanding manifested in their own interactions (Reddy, 2008).

Recent evidence suggests that infants monitor and understand third-party gestural interactions and can anticipate their outcome. 14-month-old infants viewing a person point or direct a request gesture (open hand, palm up) to an object, successfully anticipated that the addressee would transfer the object to the gesturer (Thorgrimsson, Fawcett, & Liskowski, 2014). Infants also appear to have some expectations toward third-party addressees of speech. Looking time measures suggest that infants expect a person addressed with a nonsense word to select the same object the speaker had previously expressed a preference for (unbeknownst to the addressee; Martin, Onishi, & Vouloumanos, 2012). These findings suggest that infants may understand speech as an action directed to another person to provoke a response, enabling them to actively anticipate how third-party verbal interactions unfold.

A recent line of eye-tracking studies has examined infants' looking patterns while viewing third-party conversations. Infants begin to visually orient toward third-party speakers in the second half of their first year and orienting to speakers or other sources of sound becomes more flexible over the first three years. Thus, 6- and 11-month-olds viewing a third-party conversation shift their gaze from the previous to the current speaker during roughly half of the conversational turns, exhibiting rudimentary abilities to follow a third-party turn-taking conversation (Augusti, Melinder, & Gredebäck, 2010). By 3 years of age, children also disengage from the current speaker and orient their gaze to the prospective speaker during the majority of turns (von Hofsten, Uhlig, Adell, & Kochukhova, 2009). In the latter study, 3-year-olds, but not 1-year-olds, were also found to make more such gaze shifts between human interlocutors than between turn-taking objects presented in a matched control condition. A recent follow-up study (Bakker, Kochukhova, & von Hofsten, 2010) similarly found that for 3-year-olds, but not 1-year-olds, such gaze-shifts were more frequent between people than between objects. Further, the older age group made more shifts between people or objects when these emitted speech than when they emitted mechanical sounds. Together, these eye tracking studies suggest that before 12 months of age, infants tend to fixate speakers or other sound sources during their turn, and that by 3 years, children are more flexible in monitoring others' interactions in that they disengage attention from human speakers to addressees.

However, the extent to which infants visually monitor speakers in a conversation does not necessarily reflect their expectations about responses to speech. Since these studies all presented contingent, alternating conversational turns, the infants may have shifted their gaze from speaker to listener (or between turn-taking objects) because they learned to anticipate the contingency of the stimuli, but not because they expected the utterances to provoke a response from the listener. This possibility is especially evident considering that from as early as 2 months of age, infants quickly learn to anticipate side-alternating visual events (Canfield & Haith, 1991). Thus, the fact that 1-year-olds shift their gaze to a contingently reacting object as much as to a human listener in a conversation (von Hofsten et al., 2009), may reflect only their sensitivity to the matched contingencies. Demonstrating that infants switch their gaze to a third-party addressee in the absence of previous or ongoing contingent interaction would give stronger evidence that they expect speech to provoke a response from another person. In addition, since infants are more likely to identify a person as the source of familiar natural human sounds than unfamiliar artificial sounds, assessing infants' expectations about speech will benefit from a comparison with their expectations about common non-communicative human sounds, such as coughs or yawns.

### 1.1. *The current study*

The current study built on previous research to examine infants' expectations about communicative actions in more detail. We investigated whether infants expect an utterance directed to a third party to be responded to in the absence of previous contingent interactions. To contrast communicative with non-communicative actions, infants were also presented with identical videos in which the Emitter made a natural non-speech sound (e.g. a cough). We tested 12- and 24-month-olds to investigate whether both older, verbal infants and younger infants with much less linguistic experience would have expectations about speech. Infants at the age of 12 months are only beginning to utter their first words,

Download English Version:

<https://daneshyari.com/en/article/917194>

Download Persian Version:

<https://daneshyari.com/article/917194>

[Daneshyari.com](https://daneshyari.com)