

Investigating the Development of Joint Attentional Skills in Early Ontogeny Through Musical Joint Action

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ABSTRACT

Background

Joint attention is a set of non-verbal, communicative behaviors (“joint attentional skills”), which are proposed to emerge in early ontogeny during the period of 9 to 15 months (Carpenter et al., 1998). It is an important basis for joint action, i.e. coordinating attention and intention to act mutually to bring about a change in the environment (Knoblich & Sebanz, 2008). Although the emergence of joint attention has been extensively studied through examining joint attentional skills in early ontogeny, research on their possible enhancement alongside the children’s social cognitive development is rare. Especially, research on a possible enhancement exceeding the period of the development of social cognitive mechanisms like empathy and Theory of Mind is still missing.

We hypothesize that joint attention, scaffolding social interaction as well as higher level social cognitive mechanisms, enhances alongside further social cognitive development.

Aims

The goal of our current study is to investigate whether joint attentional skills show enhancement in the later course of development, namely after 15 months of age. Additionally, our study aims at investigating if this enhancement potentially corresponds to increasingly more complex social interactions such as making music together.

Method

An observational study was conducted with children of different age-groups (1.5–2.5 y; 3–4 y; 5–6 y) in a musical joint action setting (music education for young children) in which children were free to move, sing and clap together under the guidance of a tutor. Structured observation in a musical joint action setting allows us to examine children’s nonverbal interactive behavior in an ecologically valid group interaction environment independently of their language skill.

Results

Joint attentional skills and non-verbal interactive behavior are coded in terms of two categories: *social gaze* (gaze targeting and gaze following) and *musical gestures* (rocking, clapping, and singing). “Gaze following” was chosen as a code because it is a key component of joint attention (Falck-Ytter et al., 2015) and easily observable in a natural interactive setting. A possible quantitative increase in coding “gaze following” (*Social gaze*) would portend an

enhancement of joint attention. “Gaze targeting” (*social gaze*) was chosen as it allows us to control for other types of social gaze that are not part of joint attention. In contrast, “Rocking”, “clapping” and “singing” (*musical gestures*) indicate musical interactive behavior. By examining the relation between the two categories *social gaze* and *musical gestures*, it is possible to investigate whether children’s interactive behaviors are linked to an enhancement of joint attentional skills. In addition to presenting and discussing the design of our coding scheme, we report results from our first application of this coding scheme.

Conclusions

To the best of our knowledge, our study is the first empirical study investigating the developmental trajectory of joint attention by examining a possible enhancement of joint attention through gaze following in a natural musical joint action setting. Furthermore, if there is an enhancement of joint attention, we are able to report on a possible correlation between enhanced joint attention and increasing social interaction through musical gestures. Although joint attention forms the basis for musical joint action, the nature of a possible relationship between enhanced joint attention and social interactive behavior is still unclear.

Keywords

social interaction; development; joint attention; gaze; musical joint action; structured observation

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