Abstract

The processing of information arising from different perceptual systems is assumed to have important implications for the development of infants’ ability to differentiate between the self and others (Bahrick & Watson, 1985; Rochat & Striano, 2000). The current dissertation aims at disentangling different definitions and paradigms used in previous theoretical frameworks and studies on infants’ differentiation between different degrees of intermodal matches. Three main characteristics (contingency, congruency, and timing) are identified in order to define the nature of perfect, less-than-perfect and no intermodal matches. The differentiation between these different degrees of intermodal matches is assumed to be related to the ability to recognize the self in reflecting surfaces (Rochat, 2003), which is an important milestone in infants’ development. The central question of the first publication of the current dissertation was whether infants’ intermodal match differentiation at 6 and 9 months is a precursor of their ability to recognize themselves in the mirror at 18 months and on video at 26 months, which was investigated in a longitudinal study. Findings of study 1 indicated that infants’ intermodal match differentiation at 6 and 9 months was not predictively related to their mirror self-recognition status at 18 and 26 months or to their video self-recognition status at 26 months. The absence of predictive relationships between intermodal match differentiation and later self-recognition supports the assumption that the representation of the self in the imagination develops independently of infants’ ability to differentiate between different degrees of intermodal matches. Thus, an alternative explanation for the development of self-recognition is likely: Self-recognition might emerge as the result of a sudden cognitive change (Bischof-Köhler, 1991, 2012). In study 1, infants’ intermodal match differentiation was measured in a task that presents infants with different degrees of self-generated intermodal matches. A previous study showed that infants’ intermodal match differentiation in social interactions at 9 months predicted mirror self-recognition at 24 months (Kristen-Antonow, Sodian, Perst, & Licata, 2015). This finding offers an alternative
explanation, as it highlights the importance of intermodal match experiences in communication and interaction between parents and their infants. Intermodal match experiences regarding nonsocial stimuli like self-generated behavior, as used in study 1, do not seem to contribute to the development of a representation of the self with a comparable impact. Accordingly, intermodal match differentiation in the first year of life could be closely related to the differentiation between self-generated and other-generated behavior in social interactions (Bigelow, 2001). Infants’ strong preference for self-generated behavior (perfect intermodal matches) might result in interaction and communication difficulties with others, especially their parents. Thus, the second publication aimed to test whether infants’ intermodal match preference is related to parent-reported problems in interaction and communication with their infants. Infants’ preference for perfect intermodal matches as opposed to a preference for no matches was associated with parent-reported difficulties in the interaction between parent and infant.

In both studies, infants’ intermodal match differentiation and preference was assessed in a looking time task. Additionally, the findings of study 1 and 2 were gathered using data from a longitudinal study. Looking time studies are especially prone to dropout due to infants’ fussiness. Moreover, it might be that stable infant characteristics play a role in infants’ dropout due to fussiness. If so, it is likely that infants’ dropout in one test phase could be associated with infants’ dropout in another test phase, which is especially problematic in longitudinal studies. The third publication therefore took the form of a superordinate study assessing whether infants’ dropout during looking time tasks (such as the tasks used in study 1 and 2) affects the representativeness of the final sample in terms of infants’ temperament and cognitive developmental status, and whether dropout in one test phase is associated with dropout in another test phase 3 months later. Findings of all three studies presented in the current dissertation will be summarized and their relevance to the fields of infancy research,
clinics, and robot technology, as well as limitations and suggestions for future studies will be discussed in a General Discussion section.