

ABSTRACT

The ability to synchronize one's goal-directed behavior with those of others is a fundamental requirement in various social situations, for example, when conversing or dancing with others. Neonates already synchronize their behavior with significant others without intentional control. Little is known, however, about the lifespan development of *goal-directed* interpersonal action synchronization. The aim of the present dissertation therefore was the investigation of antecedents and consequences of the ability to synchronize own actions with others' in order to reach a shared goal.

Interpersonal action synchronization requires individuals' abilities to perceive others' actions, anticipate them, and continuously react to them. I therefore proposed that the lifespan development of the ability to synchronize one's actions with others' is a function of age-related changes in both sensorimotor abilities and social competencies (as indicators of *life mechanics* and *life pragmatics*). I expected that individual and age-related differences in these antecedents affect the development of the ability to synchronize with others to reach a shared goal. The ability should thus be evident in interpersonal action synchronization between individuals of same- and mixed ages. Furthermore, in line with the literature on social coordination, I predicted higher interpersonal action synchronization accuracy to be associated with a more positive experience of the situation and the respective interaction partner at an outcome level.

Focusing on dyadic synchronization as a sample case of goal-directed interpersonal action synchronization, I developed a dyadic drumming paradigm to investigate age differences in interpersonal action synchronization. Girls or women from four age groups (i.e., 5-, 12-, 20–30-, and 70–80-year-olds) were each paired in dyads with one same-age partner and one partner of each of the other three age groups. In baseline sessions, individuals synchronized their drumming with computer-generated drumbeats of different frequencies. Individuals' synchronization accuracy in this condition was used as an indicator of individuals' sensorimotor abilities. Individuals' social competencies (i.e., flexibility, social skills) were operationalized through self-report and other's report questionnaires. In dyadic sessions, participants were instructed to drum in synchrony with each other at a self-chosen constant tempo. Synchronization accuracy within the dyad was treated as the interpersonal action synchronization outcome.

As hypothesized, results indicated that higher sensorimotor abilities were related to more accurate dyadic synchronization. In contrast, the expected association between the social predictors and dyadic synchronization accuracy was not consistently supported in the present study. Although children with higher social skills showed higher synchronization accuracy when

paired with other children, flexibility (for all age groups) was not related to interpersonal action synchronization. Furthermore, dyads consisting of adults only showed higher synchronization accuracy than dyads including children. Same- and mixed-age dyads among adults, however, did not differ with regard to their interpersonal synchronization accuracy. Interestingly, younger and older children also synchronized equally accurately with younger and older adults. As expected, the differences in interpersonal action synchronization between the age-group compositions of the dyads were partly associated with individual asynchrony as an indicator of life mechanics. Finally, in line with the hypothesis, higher dyadic synchronization accuracy was related to more positive subjective experiences of the particular interaction partner and the situation.

Although goal-directed interpersonal action synchronization has great impact on our capability to interact in general and is proposed to have an adaptive function in various interaction processes in our everyday life, little was known so far about its lifespan development. Through the application of the dyadic drumming paradigm to same- and mixed-age dyads, this study was the first to explicitly investigate lifespan-developmental differences in the ability to synchronize one's own actions with those of others. Further, it was possible to contribute new insights into the role of sensorimotor and social antecedents of interpersonal action synchronization and its effects on interpersonal evaluation.