Social Expressions In Infant Locomotion: Vocalizations And Gestures On Slopes

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Previous research on infant locomotion has focused on perceptual, motor, and cognitive aspects of crawling and walking. However, infants acquire locomotion in a social context. Infants' first steps are into the open arms of encouraging parents. Further, infants both interpret social expressions produced by others and produce such expressions themselves. Previous research showed that infants may gauge possibilities for locomotion by monitoring parents' facial expressions (Sorce et al., 1985). The current study shows that infants produce vocalizations or gestures in potentially risky situations. We expand on a previous longitudinal analysis of infants’ exploratory activity and perceptual judgments as they coped with crawling and walking over slopes (Adolph, in press). Here, we report how infants’ social behaviors reflect their ability to detect safe versus risky hills.

Method

We observed 29 infants longitudinally for a total of 219 test sessions. Fifteen experimental infants were tested once every three weeks from their first week of crawling until several weeks after walking onset. Fourteen control infants were tested at three matched sessions (first and tenth weeks of crawling and first week of walking) to control for experience on laboratory slopes. At each test session, infants encountered both safe and impossibly steep slopes (0°-36°) as determined with a psychophysical staircase procedure (Adolph, 1995).

Coders scored two types of social expressions on the starting platform: vocalizations (crying, babbling) and people-directed gestures (e.g., finger points, “gives”, “pick-me-ups”, head shakes). Coders also scored anti-social behavior when infants disengaged from social exchange (e.g., looking at ceiling...
Figures 1 and 2 show the results of an experiment on the social and anti-social behaviors of infants during crawling and walking. The data collected over weeks of crawling and walking showed that:

- More social expressions were observed during crawling than walking.
- Infants exhibited more social expressions than walkers, with a significant difference between crawling and walking (Figure 2a).
- Infants' anti-social behaviors showed similar patterns, with crawling infants exhibiting more anti-social behaviors than walkers (Figure 2b).
- Infants' social and anti-social behaviors were more consistent during crawling than walking, indicating a higher level of engagement.

The results suggest that crawling provides more opportunities for social interaction and exploration, which may contribute to the development of social skills in infants.
Figure 3. Errors on risky slopes over weeks of crawling and walking.

weeks of crawling and walking (Figure 3). Why might infants emit differential behaviors on the starting platform on the same trials when they show maladaptive judgments? If differential social expressions (or anti-social or exploratory behavior) reflect knowledge of potential consequences, infants should not have shown high error rates.

Rather, the data suggest that infants' social expressions may not have been wholly intentional in infants' first weeks of crawling. For example, vocalizations may result from high levels of arousal and the novelty of downward slanting surfaces. Regardless of intent, social expressions serve a useful function by alerting caregivers that infants are on the move. Later, when infants' social expressions are clearly intentional, infants may contribute to their own safety by appealing to adults for help in a potentially risky situation.

References

