Characterizing Infant Object Experience through Repeated Video Sampling Across the Day

Yushan Guo, Maximilian Tang, & John M. Franchak
Department of Psychology, University of California, Riverside

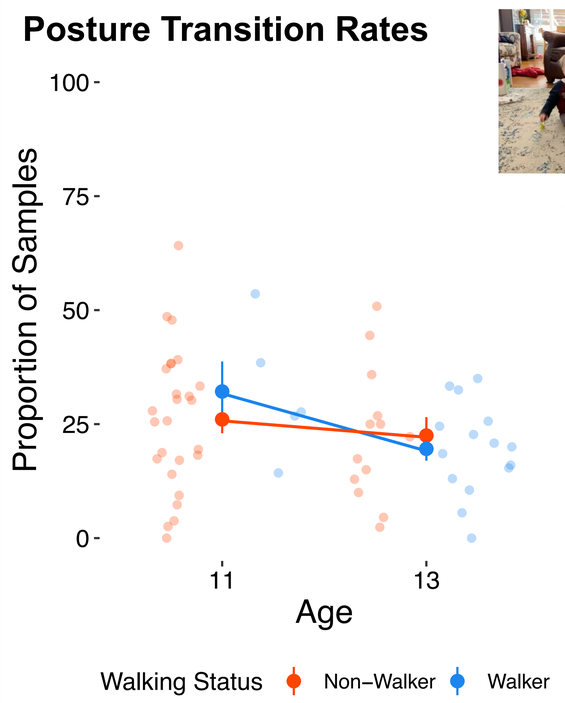
email: yguo159@ucr.edu
web: padlab.ucr.edu

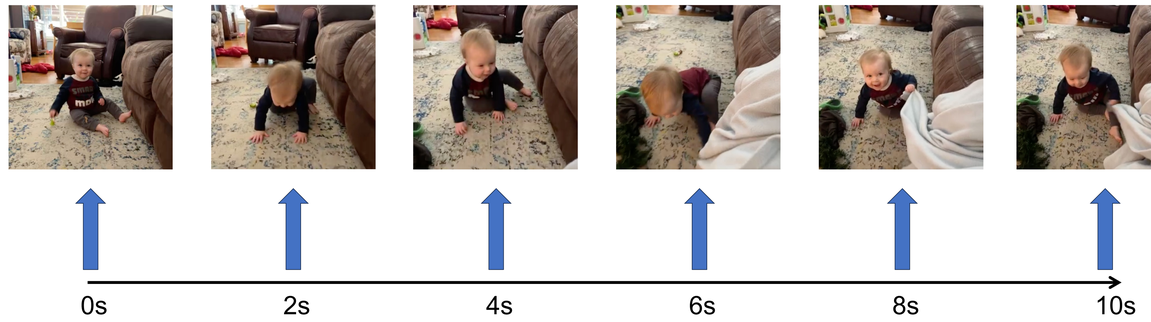
NSF BCS #1941449
James S. McDonnell Foundation Opportunity Award

Introduction

- Infants' daily postural experiences change after learning to walk (Franchak et al., 2024)
- However, using momentary samples in prior work precluded studying how frequently infants **transition** between postures
- Lab studies found that transitions vary across motor development (Thurman & Corbetta, 2020), but that study only tested play
- **Q1: Does the frequency of infants' postural transitions change with age and walking?**
- The postural context of object holding varies across development, for example, infants spend more time upright while holding objects after learning to walk (Franchak et al., 2024)
- **Q2: How often does holding accompany postural transitions, and does holding-during-transition change with age and walking development?**

Postural Transitions were Frequent in Daily Life





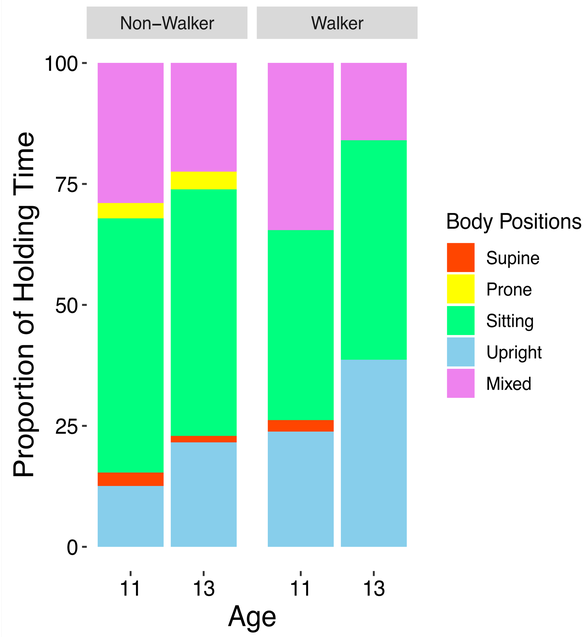
	Estimate	Std. Error	P-value
Age	-0.216	0.135	.109
Walking Status	-0.033	0.208	.874
Age × Walking Status	**-0.923**	**0.332**	**.006**

- Overall, infants transitioned posture in *M* = 25.5% of 10-s clips
- Age and walking status interacted: Walking infants engage in fewer postural transitions from 11 to 13 months, but no age difference was observed in non-walking infants

Method

- 31 infants completed longitudinal 14-day sessions at 11 and 13 months of age
  - 5 infants could walk at 11 months
  - 15 infants could walk at 13 months
- 10 hourly notifications per day asked parents to record 10-s videos of infants during daily activities from morning to evening
- Parents uploaded an average of ~34 clips per session; the total dataset contained 2106 clips
- For each 10-s clip, we scored:
  - Infants' **body posture** as either supine, prone, sitting, upright, or in transition (2+ postures observed within the clip)
  - Whether infants **held an object** at any time during the clip

Infants Held Objects During Transitions



- Most object holding occurred while sitting (*M* = 50%), but infants frequently held during postural transitions (*M* = 25%)
- We found a significant interaction between age and walking status:
  - For walking infants, holding-during-transitions decreased with age
  - For non-walking infants, there was no difference in holding-during-transitions with age

Conclusion

- Postural transitions during daily behavior were frequent, even within short observational windows
- Despite having a larger motor repertoire, older walking infants transitioned between body postures less frequently
- Postural transitions are a common and reliable motor context for infants to explore objects
- Holding objects across transitions may generate unique perceptual information and provides opportunities for infants to transport and share objects