

## Background & Questions

- ❖ Body knowledge is a key component of the “social brain” & underpins understanding of one’s own and others’ actions
- ❖ Awareness of one’s own body is served by distinct brain regions in adults (Chaminade, et al, 2005)
- ❖ The body image is well-established by age 5 but little is known about its origins (Smolak & Levine, 2001)
- ❖ Between 18 & 24 months toddlers become objectively aware of their own bodies as obstacles and of their own body size (Brownell, etal, in press)
  - ♦ When do children begin to develop a body image, i.e., knowledge about the spatial or topographic configuration of their own bodies?
  - ♦ How does this relate to their ability to describe themselves objectively?

## Methods & Results

### “Sticker Task” : Body Part Localization

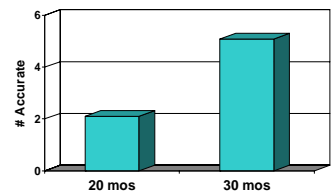
- Experimenter places sticker on assistant without labeling location (12 locations)
- Child asked to place sticker on own body in same location



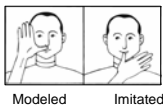
Elbow



Neck



### “Meaningless Gestures Task” : Body Part Spatial Relationships



Adapted from Goldenberg (1996)

- Left parietal damage → Imitate at inaccurate location = Impaired spatial representation of own body configuration

#### Current Study

- 16 body locations
- Gesture vs. Object
- To body vs. To table



Gesture Modeled



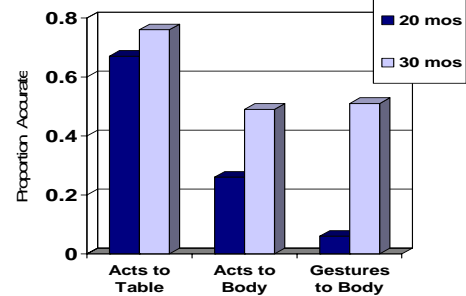
Location Error



Configuration Error



Location + Configuration Error



### Self Description & Body Part Knowledge

#### Self Description

- UCLA Self Understanding Parent Questionnaire (Stipek, et al, 1990)

#### Self-other Language

- MacArthur CDI: Personal Pronouns

	Body Part Spatial Relationships	Self-description	Self-other Language
Body Part Localization (Sticker task)	.49*	.30*	.49*
Body Part Spatial Relationships (Gesture imitation task)		.30*	.18
Gesture configuration errors		-.43*	-.28*

\* age controlled,  $p < .05$

## Summary & Conclusions

- **The body image emerges early in the third year of life as a topographic or spatial representation of the child’s own body**
  - 30-month-olds, but not 20-month-olds, demonstrated nonverbal knowledge of where unnamed body parts were located on themselves & the spatial relationships among their own body parts
  - These two aspects of body knowledge were related, independent of age
- **Early body image develops in concert with self-understanding, especially children’s ability to describe & refer to themselves objectively**