

Self-Perception and Social Orienting in Young Children with Autism

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Abstract

We assessed detection of visual-proprioceptive contingency generated from self motion in nine young children with autism (ASD) and nine typically developing (TD) children, matched for functional age on the ABAS. All children wore white socks and viewed a contingent, live video of their own leg motions alongside a pre-recorded, noncontingent video of a peer's leg motions. Results indicated that TD, but not ASD, children discriminated between the two displays and preferred to look at the noncontingent peer motion. ASD children also looked significantly less at the peer's display than did TD children. Future research will assess whether these findings are attributable to reduced social orienting, impaired intermodal contingency detection, or both.

Background

Children with autism show self-awareness and social orienting deficits (e.g., Dawson, Meltzoff, Osterling, Rinaldi, & Brown, 1998; Gergely, 2001). Self-perception and social orienting develop in infancy, partly from detecting contingent relations between visual and proprioceptive feedback from self-produced body motion (Bahrack, 1995). By the age of five months, infants have made a transition from self to social orienting. They demonstrate social orienting by preferentially viewing the noncontingent video display of a peer's leg motions over the perfectly contingent display of their own leg motions (Bahrack & Watson, 1985).

Objective

We assessed self-perception and social orienting in young children with autism (ASD) and typically developing (TD) children.

Methods

Nine ASD ($M = 3.60$ yrs) and nine TD children ($M = 2.55$ yrs), matched for functional age on the ABAS (ASD: $M = 2.23$ yrs, $SD = .84$; TD: $M = 2.30$ yrs, $SD = .54$), participated in a task identical to Bahrack & Watson's (1985) visual paired-comparison procedure. A perfectly contingent, live video of the child's own leg motions was shown alongside a pre-recorded noncontingent video of a peer's leg motions, both wearing white socks (see Figure 1). Participants received eight 15-s trials, with the right/left positioning of the contingent and noncontingent displays switched after four trials and counterbalanced across children.



Figure 1: Images of live, contingent and pre-recorded, noncontingent videos of children's leg motions.



Results

Both TD and ASD children spent a majority of available time viewing the side-by-side displays (ASD: $M = .67$, $SD = .14$; TD: $M = .58$, $SD = .16$). Despite similar exposure times, TD, but not ASD, children discriminated between the contingent display of their own leg motions and the noncontingent display of a peer's leg motions. TD children showed social orienting by looking preferentially to the noncontingent peer display ($M = .59$, $SD = .10$; $t(8) = 2.82$, $p < .05$). ASD children showed no preference ($M = .47$, $SD = .13$; $p > .05$) and their looking to the peer was significantly lower than that of TD children, $t(16) = 2.35$, $p < .05$ (see Figure 2).

Conclusions

In contrast with TD infants and children, ASD children showed no evidence of detecting the intermodal proprioceptive-visual contingency generated by self motion, and no discrimination of contingent self motion from noncontingent peer motion. Future research will assess whether these findings are attributable to impaired social orienting, impaired detection of intermodal proprioceptive-visual contingency, or both.

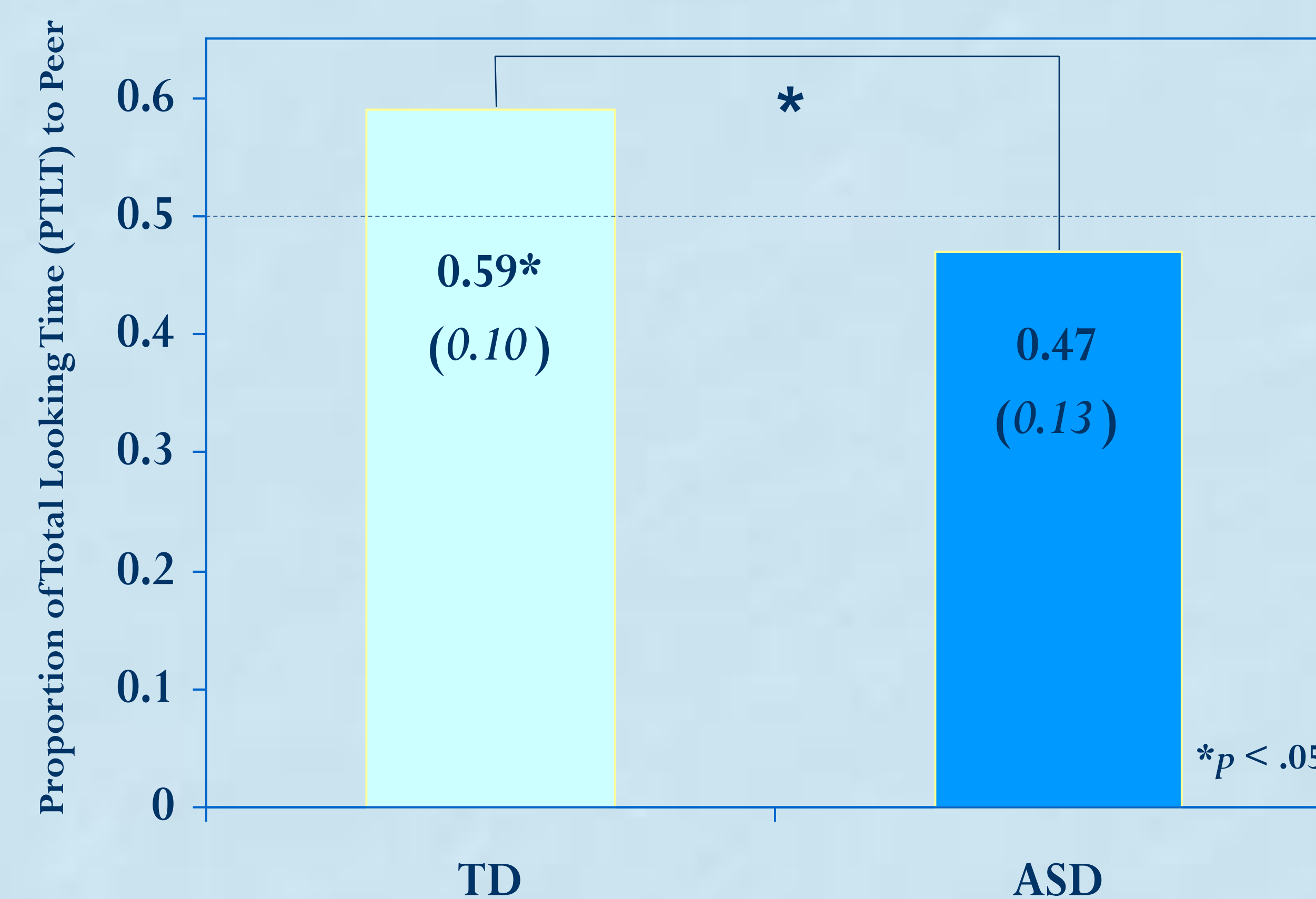


Figure 2: Mean (and SD) Proportion of Total Looking Time (PTLT) to the peer for typically developing (TD) children and those with Autism Spectrum Disorder (ASD).

References

- Bahrack, L. E. (1995). Intermodal origins of self-perception. In P. Rochat (Ed.), *The self in infancy: Theory and research. Advances in Psychology Series* (pp. 349-373). Amsterdam, Netherlands: North Holland/Elsevier Science Publishers.
- Bahrack, L. E., & Watson, J. S. (1985). Detection of intermodal proprioceptive-visual contingency as a potential basis of self-perception in infancy. *Developmental Psychology*, 21, 963-973.
- Dawson, G., Meltzoff, A. N., Osterling, J., Rinaldi, J., & Brown, E. (1998). Children with autism fail to orient to naturally occurring social stimuli. *Journal of Autism and Developmental Disorders*, 28, 479-485.
- Gergely, G. (2001). The obscure object of desire: 'Nearly, but clearly not, like me': Contingency preference in normal children versus children with autism. *Bulletin of the Menninger Clinic*, 65, 411-426.