



PRESENTATION ABSTRACT

Frontal Lobe Functioning and Cognitive Development during Infancy

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Abstract

Frontal lobe development can be assessed during the first postnatal year by examining developmental progression in performance on classic infant tasks. This presentation will focus on a neuropsychological model of performance on the classic Piagetian A-not-B task, which incorporates the development of skills associated with working memory, inhibition, and attention. Evidence for individual differences in this developmental progression will be presented by focusing on infant performance on the classic reaching version of the task as well as a looking version of the task that allows for recordings of brain electrical activity during task performance.

References

1. Bell, M.A. (2012). A psychobiological perspective on working memory performance at 8 months of age. *Child Development, 83*, 251-265. doi:10.1111/j.1467-8624.2011.01684.x
2. Bell, M.A., & Adams, S.E. (1999). Comparable performance on looking and reaching versions of the A-not-B task at 8 months of age. *Infant Behavior and Development, 22*, 221-235. doi:10.1016/S-163-6383(99)00010-7
3. Cuevas, K.C., & Bell, M.A. (2010). Developmental progression of looking and reaching performance on the A-not-B task. *Developmental Psychology, 46*, 1363-1371. doi:10.1037/a0020185
4. Cuevas, K., Swingler, M.M., Bell, M.A., Marcovitch, S., & Calkins, S.D. (2012). Measures of frontal functioning and the emergence of inhibitory control processes at 10 months of age. *Developmental Cognitive Neuroscience, 2*, 235-243. doi:10.1016/j.dcn.2012.01.002
5. Diamond, A. (1990). The development and neural bases of memory functions as indexed by the AB and delayed response tasks in human infants and infant monkeys. In A. Diamond (Ed.). *The development and neural bases of higher cognitive functions. Annals of the New York Academy of Sciences, 608*, 267-317. doi:10.1111/j.1749-6632.1990.tb48900.x