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Data Article

Reactive and anticipatory looking in 6-month-old infants during a visual expectation paradigm



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ARTICLE INFO

Article history:

Received 9 May 2017

Received in revised form

25 July 2017

Accepted 31 August 2017

Available online 4 September 2017

ABSTRACT

This article presents data from 278 six-month-old infants who completed a visual expectation paradigm in which audiovisual stimuli were first presented randomly (random phase), and then in a spatial pattern (pattern phase). Infants' eye gaze behaviour was tracked with a 60 Hz Tobii eye-tracker in order to measure two types of looking behaviour: reactive looking (i.e., latency to shift eye gaze in reaction to the appearance of stimuli) and anticipatory looking (i.e., percentage of time spent looking at the location where the next stimulus is about to appear during the inter-stimulus interval). Data pertaining to missing data and task order effects are presented. Further analyses show that infants' reactive looking was faster in the pattern phase, compared to the random phase, and their anticipatory looking increased from random to pattern phases. Within the pattern phase, infants' reactive looking showed a quadratic trend, with reactive looking time latencies peaking in the middle portion of the phase. Similarly, within the pattern phase, infants' anticipatory looking also showed a quadratic trend, with anticipatory looking peaking during the middle portion of the phase.

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DOI of original article: <http://dx.doi.org/10.1016/j.bandc.2017.05.002>

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<http://dx.doi.org/10.1016/j.dib.2017.08.049>

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Specifications Table

Subject area	<i>Psychology</i>
More specific subject area	<i>Cognitive developmental psychology</i>
Type of data	<i>Descriptive statistics, figures</i>
How data was acquired	<i>Tobii eye-tracker, 60 Hz</i>
Data format	<i>Analyzed</i>
Experimental factors	<i>n/a</i>
Experimental features	<i>Behavioral analysis of 6-month-old infants who completed a visual expectation paradigm</i>
Data source location	<i>Singapore Institute for Clinical Sciences, Singapore</i>
Data accessibility	<i>Data is presented in the article</i>

Value of the data

- The data demonstrate how 6-month-old infants' looking behaviours are influenced by the presentation of spatially patterned stimuli (compared to randomly presented stimuli)
- The data show temporal shifts in reactive and anticipatory looking behaviour as audiovisual stimuli are presented in a spatial pattern
- The data can serve as a reference point against which reactive and anticipatory looking from other time points in development can be compared

1. Data

Among the 439 infants to whom a visual expectation task was administered, 150 cases were excluded due to missing eye-tracker data resulting from either E-Prime video loading difficulties or E-Prime-Tobii interface difficulties, and 11 cases were lost due to human error. Thus, in total, 278 provided data for any portion of the task, and the data presented below describes measures of looking behaviour for this sample of infants.

1.1. Task order

The visual expectation paradigm was administered in counter-balanced order with two other eye-tracking tasks; however, the order in which the visual expectation task was administered was not significantly associated with any of the three looking behaviours measured. That is, task order was not related to reactive looking to random stimuli [$F(2,256)=2.06, p=.130$], reactive looking to patterned stimuli [$F(2,251)=0.84, p=.432$], nor anticipatory looking [$F(2,269)=2.30, p=.102$]. Likewise, task order was not significantly associated with the number of missing trials (either due to the infant looking away or due to the eye-tracker's inability to detect the infant's gaze) for reactive looking to random stimuli [$F(2,275)=0.07, p=.931$], nor reactive looking to patterned stimuli [$F(2,275)=2.12, p=.122$]. It was, however, marginally associated with the number of missing trials for anticipatory looking [$F(2,275)=2.87, p=.059$], with those who were administered the task first having marginally fewer missing trials ($M=10.6, SD=8.2$) than those administered the task second [$M=13.4, SD=10.3; t(180)=-1.96, p=.051$] and significantly fewer missing trials than those administered the task last [$M=13.6, SD=9.8; t(185)=-2.18, p=.030$].

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