

Infant face popout

One of the key research findings that make humans an extraordinary social species is that human faces, above anything else, grab and hold our attention. In adults the power of faces has been widely demonstrated. But already in infancy this interest in faces is apparent. For instance, when six-month-olds see an array of items, their first fixations fall more often than expected by chance on the only face (Gliga, Elsabbagh, Andravizou & Johnson, 2009). This phenomenon is known as the face pop-out – phenomenon.

The current experiment is a shortened version of this face –pop out experiment (Gliga et al, 2009 Exp1; Elsabbagh et al., 2013): it is a free viewing experiment in which children from the Baby&Kind cohort are presented with multiple five-item arrays (always: 1. Human face; 2. Car; 3. Mobile phone; 4. Bird; 5; Face-shaped noise figure). It tests whether children automatically orient to faces and whether they prefer to look at faces (i.e. look disproportionately longer to faces).

Participants:

Participants (age 5-month-olds (0 years; 4 months; 0 days – 0 years; 6 months; 30 days) or 10-month-olds (0 years; 9 months; 0 days – 0 years; 11 months; 31 days) or 3-year-olds (2 years; 0 months; 0 days – 4 years; 11 months; 30 days) came to the Child Research Center for half a day to participate in a battery of tasks. The described task is always the third task in the set of our three-four eyetracking tasks (1. Social gaze; 2. Gap-overlap; 3; face pop-out; 4; looking while listening).

Stimuli:

Visual stimuli: There were 6 arrays (POPOUT01-06.TIF). Each array had the same five categories, but with new exemplars {face, scrambled noise image that matched the shape of the face; a car; a bird; and a mobile phone}. These arrays were counterbalanced with respect to array composition. Auditory stimuli: Each array was accompanied by a different instrumental song (i.e., there was no human singing, so the stimuli are not language-specific). Audio levels are described in "audio-plan.pdf".

Design:

Infants sit in a car seat approximately 65 cm away from the eyetracker. Testing occurs in a bright small room (300-350 Lux, Temperature 18-25 C), which does not have windows.

The Tobii TX300 eye-tracker (Tobii Technology, Stockholm, Sweden) with an integrated 23-inch monitor (1920 by 1080 pixels; 60 Hz refresh rate) was used to record eye movements. The Tobii TX300 ran at 300 Hz and communicated with MATLAB (version R2015b, MathWorks Inc., Natick, MA, USA) and the Psych Toolbox (version 3.0.12; Brainard, 1997) running on a MacBook Pro (OS X 10.9) via the Tobii SDK.

An operator-controlled calibration was run, which consisting of colored expanding and contracting spirals presented at the four corners and the center of the screen. The spirals were accompanied by a sound. A web-cam was used to monitor the participant. When the operator judged the participant to be looking at the spiral, a button was pressed, after which the spiral contracted and was calibrated. Details of the calibration stimuli are given in Hessels et al. (2015). The

operator judged the calibration output from the Tobii SDK, after which a decision was made to accept the calibration or re-calibrate.

Once the child is calibrated, the experimenter closed the curtain that divided the room in two halves, and sat in the other half of the room, behind a desk with the stimulus MAC laptop. The experimenter could also see the child via a closed-circuit camera.

A trial starts with a small central animation (central fixation point). Then in random order, with random pairings between sound & visual, an array appears for 10 seconds, accompanied by an instrumental song. There are six trials in total. (Experimenters could play attention getters when the child's attention started waning). The total duration of the experiment was 1 minute (excluding time required for calibration).

Reference:

Hessels, R. S., Andersson, R., Hooge, I. T. C., Nystro€m, M., & Kemner, C. (2015). Consequences of eye color, positioning, and head movement for eye-tracking data quality in infant research. *Infancy*, 20, 601–633.