Testing the developmental foundations of cinematic continuity
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Introduction
All TV and film, even those aimed at babies, communicate visual narratives using an edited series of shots adhering to the rules of continuity [1]. We have previously shown that adults who are inexperienced movie viewers fail to comprehend some of these rules [2]. In this study we investigated the developmental origins of movie perception by examining whether 12- and 18-month-old infants’ ability to follow a gaze cue to an in-view object [3,4] extends to the situation when the gaze cue occurs across an edited sequence, i.e. Gaze match cut [1,2].

Method
12-month-old infants (n=35), 18-month-old infants (n=26) and adults (n=23) were shown 8 film clips depicting a model looking at one of the two objects in single medium shot or in multiple shots (see Fig. 1). Direction of gaze cue was counterbalanced. Eye movements were recorded with a Tobii TX300. Data were included in the analysis if subjects fixated the model’s face during gazing. Infant’s first target look was categorized as a “correct look,” when it aligned with the adult’s target (+1), or an “incorrect look,” when it aligned with the opposite target (-1). A look at neither target, received a score of 0.

Looking score (LS) = mean (correct looks + incorrect looks + non-looks).

Results
Fig. 1: Sample frames from the stimuli. Each video started with a baseline phase (1) followed by a gazing phase (2). In the single shot condition (SS) the agent looked at the object in the same shot as 1 (2A). In the multiple shot (MS) condition the agent looked at the object in a close-up shot (2B). Each video ended with a testing phase showing the whole scene again (3).

Conclusions
- Babies can follow gaze across a cut but not as well as they can do without a cut and adults.
- Whether this is due to less TV exposure or increased cognitive demands of edited sequences must be tested in future work.