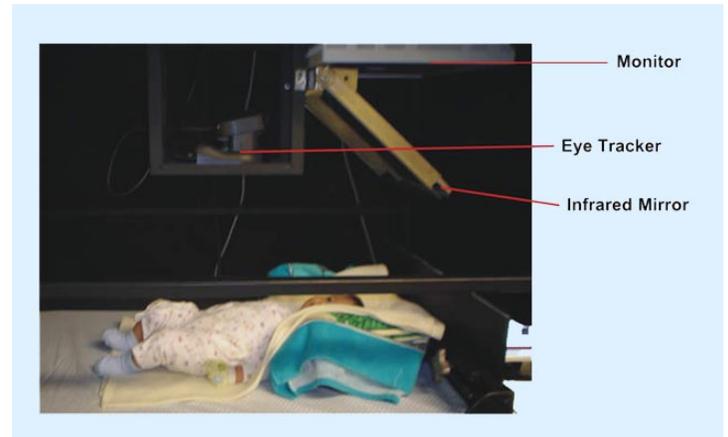


Visual and Cognitive Development Project

Centre for Vision Research



A number of important developmental problems are related to the ability to allocate attention. Yet, little is known about the nature of attention in infancy. This research group, using eyetracker equipment and assessing eye movements, investigates how infants develop the ability to selectively allocate their attention to different events in their chaotic world thereby enabling them to make sense of their world and how that attention is affected by experiential factors.

Current studies have been investigating how infants allocate attention to an objects when multiple other objects are simultaneously available; how being born by cesarean section versus vaginally affects the development attention; the roles that monolingual versus bilingual environments have on attentional capacities; and how attention is allocated to early language structures and musical notes.

The research conducted by the Project has been supported by grants from Natural Sciences and Engineering Research Council and from the National Institutes of Health. In addition, the Project and its research has been featured on television and radio news programs.

The research being undertaken by the Project will improve our understanding of normal development, as well as our understanding of disparate developmental trajectories that occur in disorders such as Autistic Spectrum Disorders, Attention Deficit Disorder, and learning disabilities.

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Development of Selective Attention in Infancy

A question of fundamental importance for cognitive development is how infants, with limited cognitive resources, are able to selectively filter the overabundance of information in their environment to allow for coherent learning about their world. To answer this, we rely on the construct of selective attention, generally described as the process with which the mind takes hold of one out of a multitude of possible objects while ignoring the others. Attentional selection is necessary for efficient cognitive functioning because we have limited resources with which to process the immense amount of information in the visual world. Developmentally, for infants to learn about their world and to construct an organized representation of their world, mechanisms of selective attention would seem to be even more critical. The particular objective of this research program, therefore, is to begin to delineate the mechanisms of selective attention in early development by use of a new methodology of assessing infants' and adults' eye movements. This research also has the potential to enable a better understanding of what goes wrong in attentional development when infants and children have trouble selectively filtering the information in their worlds, such as in Attention Deficit Disorder and Autism. Further, this research will begin to examine how unique early experiences, such as monolingualism versus bilingualism and being vaginally delivered versus being delivered by cesarean section impacts the development of selective attention.

Infants will be laid down on their backs in a specialized crib and view colourful pictures, such as checkerboards, bullseyes, cartoon faces, letters, etc., on a monitor situated 48 cm overhead. As the infant views the pictures, their eye movements to the pictures are recorded. Each session consists anywhere from 30 to 100 pictures, lasting from 2 to 5 minutes depending on conditions and timing of the components of each trial. In each study, any given participant only completes a single session.

What kind of participants are required (age, gender, etc.)?

We are looking for any baby whose age falls anywhere between 2 and 6 months of age.

The time commitment involved for participants?

Almost all studies are a single session in which parent and baby spend approximately 30 minutes at the Project. During this time, more information is provided to the participants, the baby views the pictures, and any questions the parent has are answered.

Where and when the study will take place?

The studies take place at the Visual and Cognitive Development Project at York University. Free dedicated parent parking is provided near the building. The studies are continuous and on-going, so we are always looking for new participants.

Is there any compensation for participants?

To thank the parents for their time and effort in bringing their baby and participating in the studies at the Project, we provide a coupon for a free Sears' family portrait (a value of \$19.99).

Contact information for participants to sign up or get more information

More information can be found at <http://babylab.cvr.yorku.ca>. To sign up, participants can contact us at (416) 736 -2100, ext. 20036, or by email – babylab@yorku.ca. Additionally, participants can sign up through our secure website, <http://babylab.cvr.yorku.ca/baby-information-form/>.