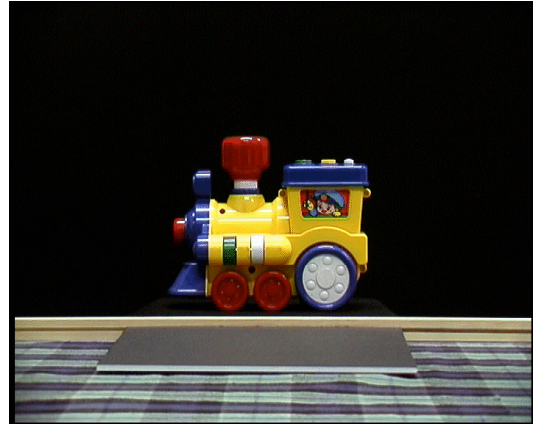
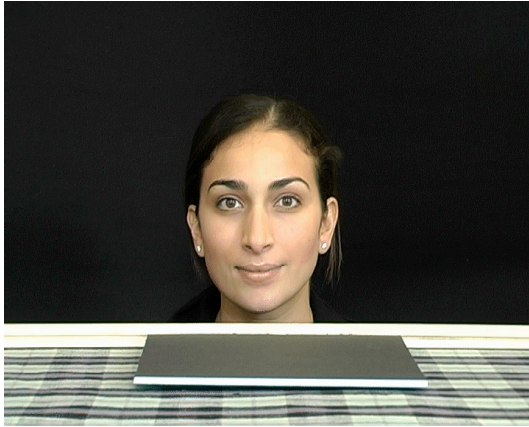


CENTRE FOR BRAIN AND COGNITIVE DEVELOPMENT

ERP Changing Things



When an infant watches a display like those above, what aspects of the display do they pay attention to and remember? Previous research in the Babylab has revealed a type of brain activity (which is referred to as ‘gamma’) that may be linked to the maintenance of object information. When infants watched as a train disappeared into a tunnel, this particular type of activation increased as the train became covered. Interestingly, when the train did not reappear on the other side, and the tunnel was lifted to show nothing underneath, this type of activity increased even more. Gamma activity may reflect the infant’s attempt to maintain a representation of the train when they know it should be there but isn’t.

In this study, we are asking the question “when a screen occludes either a face or an object, do infants maintain a representation of simply ‘a thing’ or do they know specifically what that ‘thing’ was”? We presented infants with either a face or an object that was then occluded by a screen. When the screen came down, infants saw either the same face/object that was occluded, or a different one. If infants encode and maintain the surface feature information about the face or object, they may exhibit increased gamma activity when a different face or object is revealed, as they should expect to see the same face/object revealed as was hidden. We use both faces and objects as stimuli because it is thought that these two types of stimuli may be processed in different parts of the brain. If infants do encode the surface feature properties of both types of stimuli, and gamma activity enables them to maintain this information while the stimuli are hidden, we might see this gamma activation in these different brain areas, depending on whether they are in the ‘object’ group or the ‘face’ group.

Thank you for your participation in this study. You and your child have contributed to our understanding of brain development in infancy!