

Young children respond better to pointing fingers than common symbols

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The old adage that 'it's rude to point' might need a rethink after new research showed that young children struggle to make sense of common symbols like arrows, and respond best to a pointing finger to direct their gaze.

Psychologists from the University of Lincoln, UK, found that the attention of pre-school and early school year [children](#) is strongly influenced by the direction of a pointing finger – but other visual directional cues such as arrows or pictures of peeking eyes are often ineffective.

The new findings challenge previous theories that the ability to direct [visual attention](#) to where others are looking relies on an innate brain module. The findings indicate that this cognitive ability must develop with age.

Researchers asked 137 children aged between three and ten years to play a specially-designed computer game. In the game, the children were asked to keep their eyes on a cartoon character, Buzzy Bee, which repeatedly jumped unpredictably from the middle to the left or right of the computer

screen.

The researchers used [eye-tracking](#) technology to study the children's responses. The children were instructed to follow the character with their eyes, but not to pay attention to pictures of eyes, arrows and pointing fingers which also flashed up on screen. These 'directional cues' could be pointing in either the same direction as the bee or in another direction. The bee would then jump around the screen, and the researchers monitored where the child's gaze followed, as well as how quickly and accurately they followed the bee when it was displayed with the [visual cues](#).

The findings showed that the youngest age group – three to five year-olds – were only influenced by the pointing fingers and tended to look in the direction it was pointing. Older children demonstrated a stronger ability to follow the bee correctly despite the directional cues.

Researcher Professor Tim Hodgson, neuroscientist and Head of the University of Lincoln's School of Psychology, said: "In infancy a child develops brain circuits in the frontal cortex of the brain, an area which allows us to control our eyes and attention.

"Children have to learn to link what they see in the world around them with the direction of interesting information and events. One of the first 'cues' to attention that [young children](#) learn may be the [direction](#) of an adult's pointing index finger."

The experiment was carried out at the University of Lincoln's annual Summer Scientist event, in which hundreds of children and their parents participate in a range of fun games, quizzes and challenges which inform real psychology research.

The study is published in the Springer academic journal *Experimental Brain Research* today.

More information: Nicola Jean Gregory et al. The

developmental trajectory of attentional orienting to
socio-biological cues, *Experimental Brain Research*
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