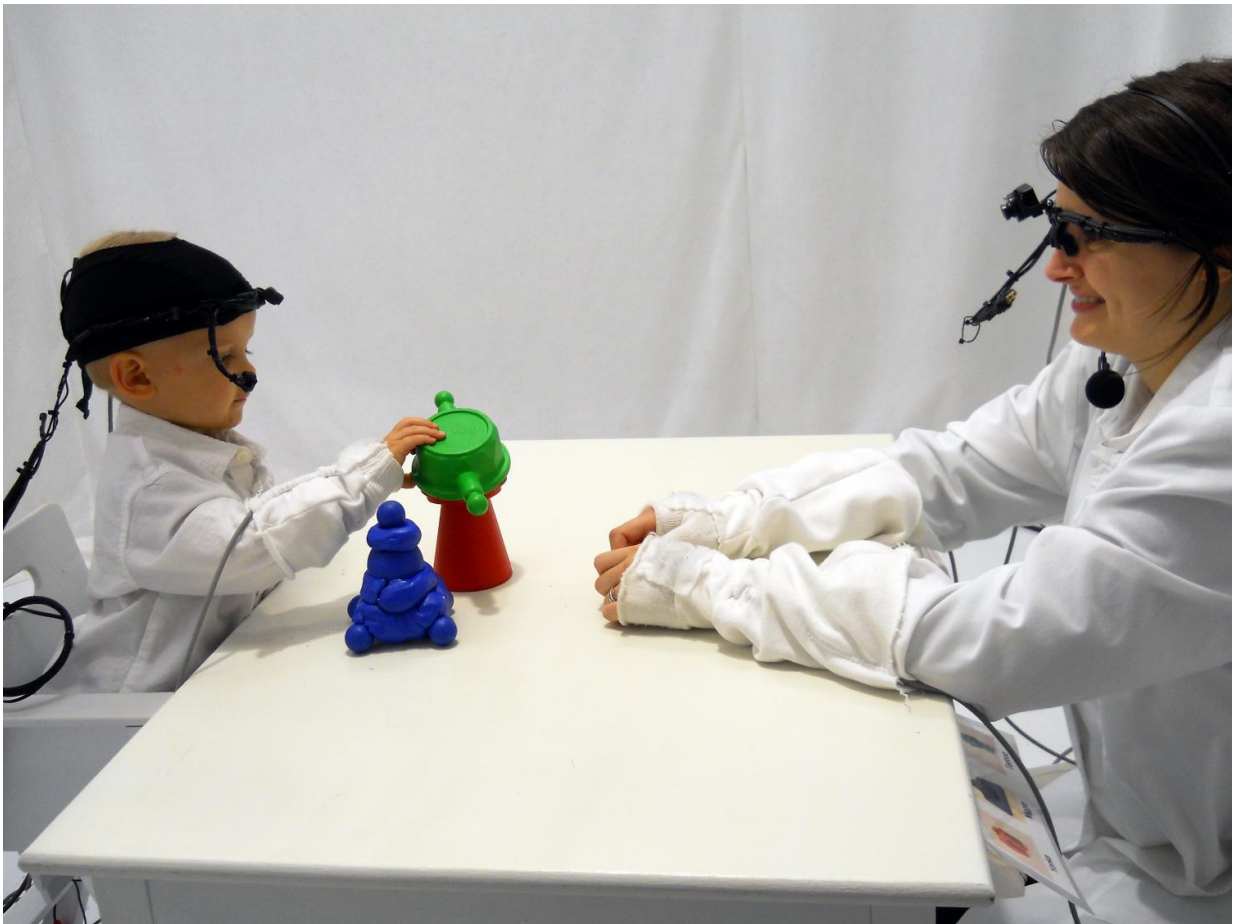


Infant attention span suffers when parents' eyes wander during playtime, study finds

April 28 2016



Head-mounted cameras enabled psychologists to track how the movement of caregivers' eyes affected infants' attention. Credit: Indiana University

Caregivers whose eyes wander during playtime—due to distractions such as smartphones or other technology, for example—may raise children with shorter attention spans, according to a new study by psychologists at Indiana University.

The work, which appears online today in the journal *Current Biology*, is the first to show a direct connection between how long a caregiver looks at an object and how long an infant's attention remains focused on that same object.

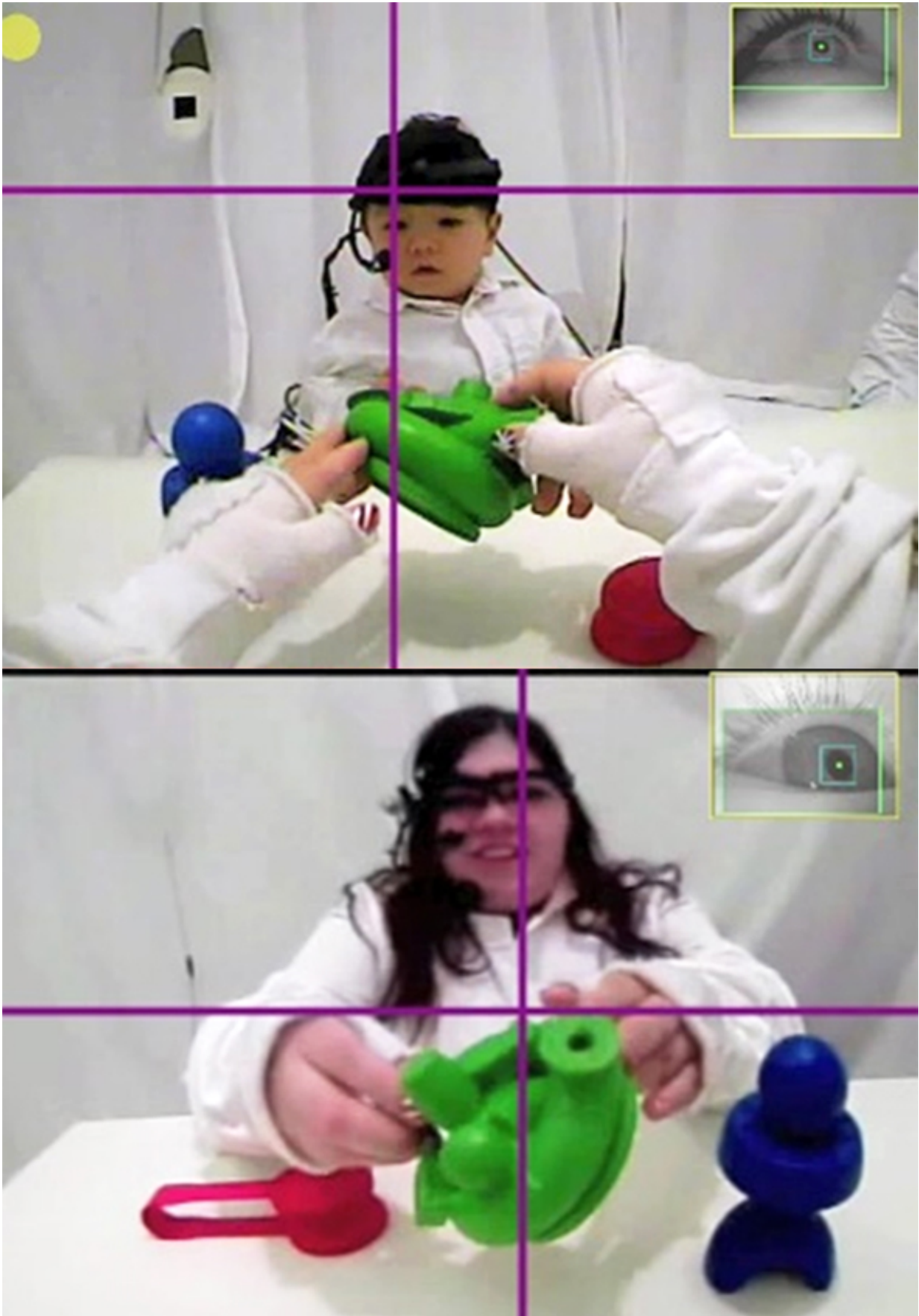
"The ability of children to sustain attention is known as a strong indicator for later success in areas such as language acquisition, problem-solving and other key cognitive development milestones," said Chen Yu, who led the study. "Caregivers who appear distracted or whose eyes wander a lot while their children play appear to negatively impact infants' burgeoning attention spans during a key stage of development."

Yu is a professor in the IU Bloomington College of Arts and Sciences' Department of Psychological and Brain Sciences. Linda Smith, IU Distinguished Professor and Chancellor's Professor of Psychological and Brain Sciences, is co-author on the paper.

"Historically, psychologists regarded attention as an property of individual development," Smith said. "Our study is one of the first to consider attention as impacted by social interaction. It really appears to be an activity performed by two social partners since our study shows one individual's attention significantly influence another's."

Thanks to head-mounted cameras worn by both [caregivers](#) and infants in the study, IU scientists got a first-person point of view on parents and children playing together in an environment that closely resembled a typical play session at home or day care. The technology also allowed the parents and children to play with physical toys. A typical eye-tracking

study of children would involve manipulating objects on a screen.



The top image shows an infant from the caregivers' point of view. The lower image shows a caregiver from the infants' point of view. The crosshairs indicate the focus of the eyes. Credit: Indiana University

Caregivers were given no instructions before engaging with children to ensure the psychologists got an unfiltered view of their interactions.

Generally, Yu said, caregivers fell into two major groups: those who let the infants direct the course of their play and those who attempted to forcefully guide the infants' interest toward specific toys.

"A lot of the parents were really trying too hard," he said. "They were trying to show off their parenting skills, holding out toys for their kids and naming the objects. But when you watch the camera footage, you can actually see the children's eyes wandering to the ceilings or over their parents' shoulders—they're not paying attention at all."

The caregivers who were most successful at sustaining the children's attention were those who "let the child lead." These caregivers waited until they saw the children express interest in a toy and then jumped in to expand that interest by naming the object and encouraging play.

"The responsive parents were sensitive to their children's interests and then supported their attention," Yu said. "We found they didn't even really need to try to redirect where the children were looking."

The gains in attention for children in this group were significant. In cases where infants and caregivers paid attention to the same object for over 3.6 seconds, the infant's attention lingered 2.3 seconds longer on average

on the same object even after the caregiver's gaze turned away. This extra time works out to nearly four times longer compared to infants whose caregivers' attention strayed relatively quickly.

The impact of a few seconds here and there may seem small. But when they are magnified over a play session—and those play sessions occur over months of daily interaction during a critical stage in mental development—the outcomes grow significantly, Yu said. A number of other studies tracking the influence of [sustained attention](#) in children from ages 1 through grade school show consistently that longer [attention spans](#) at an early age are a strong predictor of later achievement.

"Showing that what a parent pays attention to minute by minute and second by second actually influences what a child is paying attention to may seem intuitive, but social influences on attention are potentially very important and ignored by most scientists," said Sam Wass, a research scientist at the University of Cambridge whose commentary on the study appears in the same journal. "Chen Yu and Linda Smith's work in this area in recent years has been hugely influential."

The shortest [attention](#) spans in the study were observed in a third group, in which caregivers displayed extremely low engagement with [children](#) while playing. These distracted caregivers tended to sit back and not play along, or simply look elsewhere during the exercise.

"When you've got a someone who isn't responsive to a child's behavior," Yu said, "it could be a real red flag for future problems."

More information: *Current Biology*, Yu and Smith: "The Social Origins of Sustained Attention in One- Year-Old Human Infants" DOI: 10.1016/j.cub.2016.03.026 , [www.cell.com/current-biology/f...](http://www.cell.com/current-biology/fulltext/S0960-9822(16)30202-0)
[0960-9822\(16\)30202-0](http://www.cell.com/current-biology/fulltext/S0960-9822(16)30202-0)

Provided by Indiana University

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