

Copying is social phenomenon, not just learning, say scientists

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Credit: *Current Biology*, Marsh et al.

Mimicking the behaviour of mum and dad has long been considered a vital way in which children learn about the world around them. Now psychologists at The University of Nottingham have shown that copying unnecessary behaviour is more likely to be a social phenomenon than part of the practical process of acquiring new skills.

In their study, published today in the journal *Current Biology*, the [scientists](#) found that autistic children, who have profound difficulty in engaging in [social situations](#), were less likely to copy unnecessary behaviour when learning a new task.

The research could offer a new approach to examining social

development in children and adults with disorders on the autistic spectrum.

Dr Antonia Hamilton, who led the research in the University's School of Psychology, said: "Our study showed that typically developing children copy everything an adult does, even when they know that some of the actions are 'silly'.

"In contrast, the children with autism only copied the useful actions – in a way, they are getting the job done more efficiently than the typical children.

"These results show us that copying unnecessary actions is a [social phenomenon](#), it is not just about learning how to use objects."

The scientists tested 31 children on the autistic spectrum and 30 typically developing children with the same level of [language skills](#) and a further 30 typically developing children who were matched by age.

In the study, children were asked to watch carefully as an adult showed them how to retrieve a toy from a box or to build a simple object. Critically, the demonstration included two vital actions such as unclipping and removing the lid and one superfluous action such as tapping the top of the box twice.

The child was then asked to get or make the toy as fast as they could—without mentioning the need to copy all of the actions of the adult exactly as they had seen them.



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Over 97% of the children were able to complete the tasks of fetching or making the toy. Typical children also copied 43-57% of the unnecessary actions, while the autistic children copied only 22%.

After doing the actions, the children were asked to watch the demonstration again, and judge if each action was 'sensible' or 'silly'. All children could do this task, but typical children found it easier. This means that typical children copied the unnecessary actions even though they know the actions are silly.

These results show a found a striking difference between autistic and typical children in both whether they copied the unnecessary actions and how they discriminated between the rationality of each action.

The scientists argue that typical children copy everything an adult does because they are more eager to please and to 'fit in'.

The children with autism showed significantly less over imitation but this was not linked to weak motor skills as all the unnecessary actions were simple and familiar and less complex than others in the sequence.

It was also not driven by superior reasoning skills because the autistic children performed worse on the task to accurately judge the rationality of each task.

Dr Hamilton added: "In our task, children are asked to make or get the toy, and all are able to do so. Children with autism do not spontaneously copy unnecessary actions, and this can best be explained by reduced social motivation. The [autistic children](#) are not interested in being like other people or in conforming to social norms."

Previous studies have examined social interactivity in autism with eye-tracking tasks and used brain-imaging to study social skills in high functioning adults on the autistic spectrum. However, simple tasks for measuring this social incentive in children did not previously exist.

This simple copying test could be used to assess the social motivation of both [children](#) and [adults](#) with autism.

More information: *Current Biology*, Marsh et al.: "Children with autism do not overimitate" [dx.doi.org/10.1016/j.cub.2013.02.036](https://doi.org/10.1016/j.cub.2013.02.036)

Provided by University of Nottingham

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