

Research examines relationship between autism and creativity

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Quinn, an autistic boy, and the line of toys he made before falling asleep. Repeatedly stacking or lining up objects is a behavior commonly associated with autism. Credit: Wikipedia.

New research has found that people with high levels of autistic traits are more likely to produce unusually creative ideas.

Psychologists from the University of East Anglia (UEA) and University of Stirling examined the relationship between autistic-like traits and creativity. While they found that people with high autistic traits produced fewer responses when generating alternative solutions to a problem - known as 'divergent thinking' - the responses they did produce were more original and creative. It is the first study to find a link between autistic traits and the creative thinking processes.

The research, published today in the *Journal of Autism and Developmental Disorders*, looked at people who may not have a diagnosis of autism but who have high levels of behaviours and thought processes typically associated with the

condition. This builds on previous research suggesting there may be advantages to having some traits associated with autism without necessarily meeting criteria for diagnosis.

Co-author of the study Dr Martin Doherty, from UEA's School of Psychology, said: "People with high autistic traits could be said to have less quantity but greater quality of creative ideas. They are typically considered to be more rigid in their thinking, so the fact that the ideas they have are more unusual or rare is surprising. This difference may have positive implications for creative problem solving."

Previous studies using the same tasks have found most people use simple undemanding strategies, for example word association, to produce the obvious answers first. Then, they move on to more cognitively demanding strategies and their answers become more creative. The new research suggests that people with high autistic traits go straight to these more difficult strategies.

"People with autistic traits may approach creativity problems in a different way," said Dr Doherty. "They might not run through things in the same way as someone without these traits would to get the typical ideas, but go directly to less common ones. In other words, the associative or memory-based route to being able to think of different ideas is impaired, whereas the specific ability to produce unusual responses is relatively unimpaired or superior."

Dr Doherty said the finding addressed an apparent paradox - that in a condition characterised by restricted behaviour and interests, some of the best known people with autism, such as British architectural artist Stephen Wiltshire and American author and activist Temple Grandin, seem to be unusually creative. The British Channel 4 television series the *Autistic Gardener* also illustrates the unique contribution someone with autism can make

to a creative activity such as garden design.

The finding could help researchers understand more about the relationship between autistic traits and how the brain adapts to problem solving in the general population.

Dr Catherine Best, Health Researcher at the University of Stirling, said: "This is the first study to find a link between autistic traits and the creative thinking processes. It goes a little way towards explaining how it is that some people with what is often characterised as a 'disability' exhibit superior creative talents in some domains.

"It should be noted that there is a lot of variation among people with autism. There can be people whose ability to function independently is greatly impaired and other people who are much less affected. Similarly not all individuals with the disorder, or the traits associated with it, will exhibit strengths in creative problem solving. Trying to understand this variation will be a key part of understanding autism and the impact it has on people's lives."

The researchers analysed data from 312 people who completed an anonymous online questionnaire to measure their autistic traits and took part in a series of creativity tests. Participants were recruited through social media and websites aimed at people with Autistic Spectrum Disorder and their relatives. Seventy-five of the participants said they had received a diagnosis of an Autistic Spectrum Disorder.

To test their divergent thinking participants were asked to provide as many alternative uses as they could for a brick or a paper clip. Their responses were then rated for quantity, elaborateness and unusualness. People who generated four or more unusual responses in the task were found to have higher levels of autistic traits.

Some of the more creative uses given for a paper clip were: as a weight on a paper airplane; as wire to support cut flowers; counter/token for game/gambling; as a light duty spring. Common ones included: hook; pin; to clean small grooves; make jewellery.

Participants were also shown four abstract drawings and asked to provide as many interpretations as they could for each figure in one minute. The higher the number of ideas produced, the lower the participant's level of [autistic traits](#) tended to be.

More information: 'The relationship between subthreshold autistic traits, ambiguous figure perception and divergent thinking' is published in the *Journal of Autism and Developmental Disorders* on August 14 2015.

Provided by University of East Anglia

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