

Link with synesthesia offers new insight into autism

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Credit: Radboud University

People with autism often have enhanced sensory sensitivity. They are, for example, much more likely to be affected by bright light and loud noises. They also have a better eye for detail. In a new paper, which was published earlier this week in the journal *Philosophical Transactions of the Royal Society B*, researchers at Radboud University show that synesthetes also often have enhanced sensory sensitivity and that they have similar social skills to individuals with autism.

Around 2 to 4 percent of people have a condition called synesthesia; this means they mix their senses. For example, a synesthete can see a color

while looking at a letter or experience a taste while listening to music.

Synesthesia and autism

Synesthesia is more prevalent in people with autism: 20 percent also have synesthesia, a much higher figure than average. "We therefore asked ourselves whether there are perhaps commonalities between synesthesia and autism," says cognitive neuroscientist Tessa van Leeuwen, first author of the publication.

Visual tests showed that synesthetes, just like individuals with autism, pay more attention to details. In one of the tests the synesthetes had to find a small figure embedded in pictures with a complex background. If you pay a lot of attention to details, you can pick out these small figures more easily against the background. On average the synesthetes made fewer mistakes in this test, just like people with autism, but only when the test became very difficult.

Previous [studies](#) in England [showed](#) that synesthetes score higher in questionnaires about autistic characteristics, but only for the questions that relate to the senses. This was a first indication that the link between synesthesia and autism may possibly be found on the sensory level.

What this new publication demonstrates is that synesthetes and individuals with autism also have similar social skills: the synesthetes also scored higher than average on this aspect in an autism questionnaire. In this questionnaire people report themselves on how easy and pleasant social contacts are for them: such as doing things with someone else or going to the library.

Van Leeuwen intends to carry out a follow-up study into the link between synesthesia and autism. "The commonalities between synesthesia and autism can help us obtain a better understanding of

autism. If the senses of individuals with synesthesia and individuals with autism work the same, this could, for example, tell us something about how autism works in the brain and how [synesthesia](#) with autism is related to other problems that people with autism come up against." Synesthesia may also help us to define subtypes of people with [autism](#), for example with regard to sensory sensitivity and oversensitivity.

More information: Tessa M. van Leeuwen et al. Autistic traits in synaesthesia: atypical sensory sensitivity and enhanced perception of details, *Philosophical Transactions of the Royal Society B: Biological Sciences* (2019). [DOI: 10.1098/rstb.2019.0024](https://doi.org/10.1098/rstb.2019.0024)

Provided by Radboud University

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