[There’s such a thing as “autism camouflaging” and it might explain why some people are diagnosed so late](https://digest.bps.org.uk/2017/02/24/theres-such-a-thing-as-autism-camouflaging-and-it-might-explain-why-some-people-are-diagnosed-so-late/)

*By guest blogger* [Helge Hasselmann](https://psychiatrie.charite.de/fileadmin/user_upload/microsites/m_cc15/psychiatrie/Mitarbeiter/cvs/Hasselmann/CV_Hasselmann.pdf)

While autism is usually diagnosed in childhood, some people remain “off the radar” for a long time and only receive a diagnosis much later. One possible reason is that they have learned socially appropriate behaviours, effectively camouflaging their social difficulties, including maintaining eye contact during conversations, memorising jokes or imitating facial expressions.

This pattern of behaviour could have serious consequences for the lives of some people with autism. It is easy to imagine that camouflaging demands significant cognitive effort, leading to mental exhaustion over time, and in extreme cases perhaps also contributing to anxiety and depression.

If there are gender differences in camouflaging, this could also help explain the well-known male preponderance in autism spectrum disorders. At least part of the gender imbalance may, in fact, stem from an under-diagnosis of autism in girls because they are better at “masking” symptoms.

Before now, autism camouflaging has not been studied in a systematic and standardised manner: [a recent open-access study](http://journals.sagepub.com/doi/abs/10.1177/1362361316671012?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%3dpubmed) in the journal *Autism*, by Meng-Chuan Lai and his colleagues, is the first to offer an operationalisation of camouflaging, which they define as the discrepancy between internal and external states in social-interpersonal contexts. For instance, if an autistic person maintains eye contact during a conversation because they have learnt that this is socially appropriate, even though this clashes with how they really want to behave, this would be an example of camouflaging.

Lai and his colleagues used clinical instruments that are well established in autism research to measure the contrast between internal and external signs of autism among 30 women and 30 men with an established diagnosis of autism. Both gender groups were matched on age (average age: males 27.2 years and females 27.8 years) and intelligence and were free from intellectual disability.

The researchers used the Autism Diagnostic Observation Schedule (ADOS), which includes several tasks requiring social interaction with an experimenter, to measure overt behaviour (external state). And they used the Autism Spectrum Quotient (ASQ; a questionnaire assessing autistic traits) and the “Reading the Mind in the Eyes” test (a computerised task that measures social cognitive ability, e.g. inferring how people feel based on their facial expression) to provide information about internal states. Relatively low scores on the ADOS (i.e. few signs of autism), combined with poor performance on the ASQ and the Reading the Mind in The Eyes, was taken as a sign of camouflaging.

Because camouflaging likely comes at considerable cognitive and emotional costs, the researchers also studied their participants’ levels of anxiety and depression, as well as their executive function. Finally, they also used magnetic resonance imaging to scan the structure of their participants’ brains.

As the researchers expected, women with autism had significantly higher camouflaging scores than their male counterparts, although there was considerable variability in both groups. Across the whole sample, higher camouflaging scores were associated with higher levels of depression, but not anxiety. When looking at gender differences, the association between camouflaging and depression remained significant only in the men (so it could be speculated that men are more susceptible to the negative consequences of camouflaging). Conversely, verbal intelligence was not associated with camouflaging in either the whole sample or genders separately. Interestingly, camouflaging correlated with executive function in females, but not males. This indicated that women who camouflaged more tended to have better executive function.

The extent to which individuals with autism engaged in camouflaging was not related to their age. This indicates that camouflaging may not necessarily increase with greater learning experience, as might be expected with older age.

Neuroanatomical findings differed between sexes, with links between brain structure and camouflaging generally more pronounced in the women. For instance, higher camouflaging was associated with smaller volume in temporal, cerebellar and occipital brain regions in women, but not in men. While there is no easy explanation for this sex difference, it could be speculated that the involved brain areas have a different function in camouflaging for women compared with men. These brain regions are associated with emotional processing, so perhaps they are involved in an emotional component of camouflaging that is more relevant to women. However, this needs to be rigorously examined in future studies.

This study is the first to offer systematic, methodologically sound evidence in support of higher camouflaging in women than men with autism. As such, these results support reports from parents or clinicians that hint at better social skills in girls with autism as compared with boys. However, as the study found evidence of men who engaged in camouflaging and women who did not, camouflaging is unlikely to constitute a uniquely female presentation of autism.

There are several points that limit the scope of this study. First, the sample size was modest and only included individuals with an established diagnosis of autism who were free from intellectual disability. To study the “real world” implications of camouflaging, it would have been interesting to study people with sub-threshold autistic scores because camouflaging might be one of the reasons why they have remained below diagnostic threshold in the first place. This information might also be relevant for healthcare professionals in terms of both diagnosis and treatment.

Finally, the operationalization of camouflaging may be vulnerable to subjective bias: For example, ADOS raters may be guided by implicit gender stereotypes, leading them to give inappropriately high autism scores to girls who behave in more “boyish” ways.

To conclude, this study provides the first systematic definition of camouflaging in individuals with autism and shows that this behaviour is more common in women than men. These clear-cut gender differences highlight the need to consider camouflaging in clinical contexts in the future.

—[Quantifying and exploring camouflaging in men and women with autism](http://journals.sagepub.com/doi/abs/10.1177/1362361316671012?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%3dpubmed)

P**ost written for**[**BPS Research Digest**](http://digest.bps.org.uk/)**by**[**Helge Hasselmann**](https://psychiatrie.charite.de/fileadmin/user_upload/microsites/m_cc15/psychiatrie/Mitarbeiter/cvs/Hasselmann/CV_Hasselmann.pdf). Helge studied psychology and clinical neurosciences. Since 2014, he is a PhD student in medical neurosciences at Charité University Hospital in Berlin, Germany, with a focus on understanding the role of the immune system in major depression.

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