Left-Handedness and Cognition: New Insights | Psychology Today 2024

Bericht über die Forschung von **Georgina Donati**
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Scientist **Georgina Donati** from the Universities of Oxford and London and her research team tested visitors to The Science Museum in London with two tasks (Donati and co-workers, 2024).
To test whether the museum visitors were more skilled with their left or right hand, the so-called pegboard task was used. In this task, the museum visitors had to move little colored pegs into holes on a board as fast as possible with each hand. By measuring which hand was faster, it could be determined whether someone was left-handed or right-handed.

In addition, a so-called chimeric faces test was conducted. In this task, the museum visitors had to look at pictures of faces that showed emotion on either the left or right half of the face while the half was emotionally neutral. The volunteers had to rate the expressiveness of the emotions that the faces showed. By comparing how expressive they rated the emotion shown on the right or the left half of the faces it could be determined whether people showed a left- or a right-sided bias for emotion recognition.

Finally, the museum visitors performed a test of language fluency and filled out an autism questionnaire on social difficulties. They also gave information on self-reported autism or ADHD diagnosis.

As was to be expected, most people were right-handed. Also, most people found faces with an emotional left half more expressive than those with an emotional right half. This bias for the left half of the face concerning emotion recognition is well recorded in the scientific literature.
The scientists then analyzed how handedness was linked to success in the pegboard task and found that people with moderate handedness were most successful, independent of whether they were left-handed or right-handed. Task success was also linked to language fluency, showing that there may be a cascading effect between handedness, task success, and cognitive ability.
The scientists then further tested whether the laterality profile of an individual volunteer had any effects. Overall, 53 percent of volunteers showed the standard profile (right-handed and left-dominant for visual emotion recognition). Twelve percent of volunteers showed a reversed profile, 13 percent showed a left bias for both tests, and 22 percent of volunteers had a right bias for both tests.
Interestingly a reversed profile was linked to both more self-reported social difficulties and a higher self-reported rate of autism and ADHD. The scientists argued that people with the reversed profile do not align with the average of other people for both handedness and emotional lateralization, which may it make more difficult for them to properly time their reaction to social cues and may thus lead to social difficulties.

Conclusion
This finding shows that it may not be left- or right-handedness itself that is relevant to cognitive abilities but more the profile of different asymmetries. This means that for future projects on left-handedness and other abilities, it would be important for scientists to consider the overall asymmetry profile beyond handedness, too.