

CORRESPONDENCE

Understanding Left-Handedness

by Dr. med. Stefan Gutwinski, Anna Löscher, Dr. med. Lieselotte Mahler, Jan Kalbitzer, PhD, Prof. Dr. med. Andreas Heinz, Dr. med. Felix BERPPOHL in volume 50/2011

Imitation Behavior and Subsequent Complications

As a general practitioner working in family medicine I found the article counterproductive as it downplayed the problems of left-handedness, especially the reeducation that is still undertaken in many cases. Old wine in new bottles (for example, do left-handed persons die earlier than others?) does not help to eliminate the taboo associated with the topic of left-handedness and avoid trying to reeducate children to right-handedness, which is still carried out in many cases, because of modeling and imitation behavior, mostly in the form of self training by left-handed children.

Terms such as “reeducation” are euphemisms supporting the “most violent attack on the human brain without bloodshed”, according to Ivo-Kurt Cizek.

However, my main criticism is of a methodological nature: how was genuine handedness verified in the reported meta-analysis? It is not enough to ask subjects whether they are right-handed or left-handed or to define the writing hand as the criterion for handedness. Rather, handedness needs to be diagnosed by using valid testing methods before useful statistical analyses can be presented. The statistical evaluations therefore do not require detailed discussion, even though this is very tempting and enlightening, because none of the included studies had actual confirmation of handedness.

On the other hand, several more recent studies were not cited (for example, those by Klöppel[1], Siebner[2], Sattler or Marquardt[3]).

This article does not provide any new insights but cites some outdated studies whose methods were unsatisfactory even at the time they were conducted and whose results are therefore not valid. Most parents, educators, and doctors these days have accepted the fact that the left and right hands are of equal “value”. However, information is still lacking, and children are still being reeducated by means of modeling and imitation behaviors, with subsequent complications.

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Conflict of interest statement
The authors declare that no conflict of interest exists.

In Reply:

We thank Noll for his additional explanations of converting by modeling and imitation behaviors. Indeed, any attempt to convert to right-handedness on the part of the affected children is definitely a negative step. For this reason we pointed out in our article the stigmatization of left-handed persons, who were discredited even by doctors (see the quote by Braun in *Klinische Wochenschrift*, which dates back to the time of the 1930s’ National Socialism) and the attempts at enforced converting, which we hope are not practiced today.

The studies cited by Noll show that converted left-handers differ from right-handers and non-converted left-handers in relation to the volume of the putamen as well as regarding cerebral activation. These studies pointed out the plasticity of the brain, however, this plasticity per se could not be interpreted as a manifestation of a cerebral injury. We agree with Noll considering the complications associated with converting left-handers.

The central methodological criticism by Noll is that studies of left-handedness were not able to capture this adequately. In actual fact, handedness can be captured very precisely by psychological testing (1). Most studies of handedness collect, in addition to writing, data on a multitude of activities, such as using a toothbrush or using matches; the Edinburgh inventory is often the instrument of choice (2).

Neither left-handedness nor right-handedness are signs of increased vulnerability for certain disorders but variations of the norm, which can be assumed to be a manifestation of cerebral developmental disorders in isolated cases only. Our article aimed to counteract stigmatization. With this in mind we thank Noll et al for their comments.

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