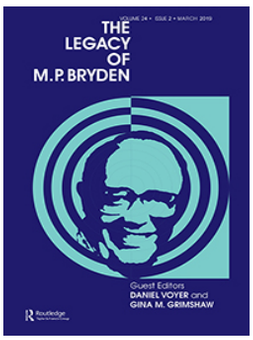

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Brain lateralization and developmental disorders – A new approach to unified research

Sebastian Ocklenburg

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BOOK REVIEWS

Brain lateralization and developmental disorders – A new approach to unified research, by Ivanka V. Asenova, London & New York, Routledge, 2018, 180 pp., €115.99 (hardback), ISBN 1138551481

In the conclusion of her classic book "Handedness and developmental disorder," Bishop (1990) noted that:

> There is almost no pattern of cerebral lateralization or handedness that has not at some time been mooted as the cause or correlate of one kind of developmental disorder.

Almost three decades later, the question what is the role of atypical lateralization in the genesis of neurodevelopmental disorder remains one of the core questions of clinical laterality research. However, in the last 30 years, significant advances have been made in the methodology that is used to investigate the relationship of brain lateralization and developmental disorders, allowing for new perspectives on this relationship. For example, functional magnetic resonance imaging is widely used to investigate laterality in brain activation in clinical samples and there has been some very exciting research regarding the overlap of dyslexia and asymmetry candidate genes that allows for a better understanding of the molecular links between laterality and pathology (Paracchini, Diaz, & Stein, 2016). Moreover, the decades-old assumption that atypical lateralization might be one of the causes of disorders like dyslexia has recently been questioned. Bishop (2013) came to the conclusion that atypical lateralization may not be a cause but a consequence of dyslexia. Thus, there certainly seems to be a market for an up-to-date reference book on laterality and developmental disorders.

"Brain Lateralization and Developmental Disorders – A new Approach to Unified Research," authored by Ivanka V. Asenova from the South-West University "Neofit Rilski" in Blagoevgrad, Bulgaria, and published by Routledge, aims to fill this gap. So what does Asenova's book cover? With 180 pages including extensive reference lists after each chapter, the book is rather short. Basically, it is comprised of five different parts. It starts with a general introduction on hemispheric lateralization, which is followed by one chapter each on developmental stuttering, developmental dyslexia, intellectual disability and autism spectrum disorder. Each of these four clinical chapters starts out with a short review of laterality in the respective disorder and then goes on to describe personal research data by the author. For example, for developmental stuttering the author compared dichotic listening performance in 87 Bulgarian children who stutter with 78 non-stuttering controls. While she found hardly any difference in dichotic listening between stutterers and controls for the whole group of stutterers, specifically children with an organic cause for their stuttering differed from controls, with greater asymmetries in the patients. Similar dichotic listening studies were also performed for developmental dyslexia and intellectual disability. For autism spectrum disorders, eyedness, earedness and footedness

were investigated in addition to handedness in a fairly small sample of 17 patients and 17 controls. Essentially, all four studies reveal that children with one of the neurodevelopmental disorders or at least some specific subtype of the investigated disorder show altered hemispheric asymmetries compared to healthy controls.

Overall, the book reads like a loose collection of non-peer-reviewed papers by the author, altering between the mini reviews on lateralization in the respective disorder and the empirical works. As such, it reads a bit like a PhD thesis (although it does not seem to be the PhD thesis of the author). While I found the mini reviews of stuttering and autism spectrum disorders fairly informative, the one on the developmental dyslexia contains pages and pages about the origin of dyslexia with little to no reference to laterality and the one on intellectual disability is extremely short (only 5.5 pages). In general, the author covers classic behavioural studies, as well as some newer electrophysiological and neuroimaging works. Unfortunately, some of the latest and most interesting developments in the fields, such as the overlap of asymmetry and dyslexia genes are not covered at all. What is also missing is a critical discussion of whether or not atypical asymmetry is a cause or consequence of the neurodevelopmental disorders. Including the unpublished and non-peer-reviewed empirical work by the author in between the mini reviews on lateralization in the disorders is also somewhat disruptive to the reading flow and gives these empirical studies a disproportionately large amount of space in the book that does not reflect their relevance in the field. Also, in 2018, it is highly unusual to publish experimental psychology studies directly in a book, without any peer review ensuring that these studies are up to scientific quality standards.

In summary, "Brain Lateralization and Developmental Disorders – A new Approach to Unified Research" certainly covers an interesting and important topic within laterality research that deserves an up-to-date reference book. Asenova's book offers a short introduction on altered hemispheric asymmetries in stuttering, dyslexia, autism and intellectual disability that could be interesting for all researchers seeking an introduction into altered lateralization in these disorders. However, I wish the author had given more space to review recent developments in the field instead of focusing on her own non-peer-reviewed works.

References

Bishop, D. V. (1990). *Handedness and developmental disorder*. Oxford: Blackwell Scientific Publishing.

Bishop, D. V. (2013). Cerebral asymmetry and language development: Cause, correlate, or consequence? *Science*, *340*(6138), 1230531.

Paracchini, S., Diaz, R., & Stein, J. (2016). Advances in dyslexia genetics-new insights into the role of brain asymmetries. *Advances in Genetics*, *96*, 53–97.

Sebastian Ocklenburg
Institute of Cognitive Neuroscience, Biopsychology, Department of Psychology, Ruhr-University Bochum, Germany
sebastian.ocklenburg@rub.de

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