Letter to the Editor

Is there a unique relation between a deficit of deviance detection and schizophrenia?

To the Editors:

The assumption of a deficit of deviance detection as the key problem in schizophrenia is definitely an interesting one; moreover, we highly agree with the multilevel approach. However, first, we are wondering whether Strelnikov (2010) could give some additional information about the question: How specific is a deficit of deviance detection for schizophrenia? In other words, is it something unique that can only be found in patients with schizophrenia (Leitman et al., 2010), or is it less specific and can it be found in various other (psychiatric) disorders (Brønnick et al., 2010) as well? From a theoretical point of view, this is a very important question to answer, and we are of the opinion that it did not receive enough attention in the review; particularly since a deficit of deviance detection plays the key part of Strelnikov’s schizophrenia theory.

Secondly, we fully agree with Strelnikov (2010) that there seems to be a deficit of interaction between hemispheres in patients with schizophrenia. Strelnikov describes the evidence found in functional magnetic resonance imaging (fMRI) studies that brain activity in “language-specific” temporal and frontal areas is more lateralized to the right in patients with schizophrenia and that there seems to be a relation with the severity of the hallucinations. We are wondering, however, why Strelnikov does not mention the role of the corpus callosum at all? In our view, according to Strelnikov’s theory, one would expect the corpus callosum, which is the largest commissure of the human brain, to play a key role. Moreover, in line with this, one would expect abnormalities particularly in this structure in patients with schizophrenia. Interestingly, note that in recent structural magnetic resonance imaging (sMRI) studies, that is also what has been found (e.g., Kubicki et al., 2008; Rotarska-Jagiela et al., 2008).

One important aspect in recent literature that might shed more light on this subject is the research on the language disorder of patients with schizophrenia, illustrating the deviations of these illnesses compared with language use in healthy adults (Goldfarb and Bekker, 2009).

Finally, Strelnikov (2010) explains in a model of normal continuous speech processing that each hemisphere houses both the sequential and the parallel stream of processing; however, each hemisphere dominates another stream. The parallel stream is dominant for the right and the sequential stream for the left hemisphere. However, we are wondering how Strelnikov’s model explains the functioning by patients who are not left hemispheric language dominant? Note that previous research showed that at least 5% of right handers, a higher percentage of non-dextrals, and even up to 20–27% of left-handed healthy participants exhibited atypical (symmetric or right-hemispheric) language dominance (Szaflarski et al., 2006). Moreover, even more important, how can Strelnikov’s model relate to and explain the accumulating evidence, obtained with both sMRI and fMRI, suggesting that schizophrenia is associated with reduced lateralization of language to the left hemisphere, with some studies reporting a reversal of lateralization, to the right hemisphere (Mitchell and Crow, 2005)?

References


Maurits van den Noort
Research Group of Pain and Neuroscience, Kyung Hee University,
1 Hoegi-dong, Dongdaemun-gu, Seoul 130–701,
Republic of Korea

Department of Linguistics, Free University of Brussels,
Pleinlaan 2, Brussels 1050, Belgium
Corresponding author. Tel.: +49 16096868801;
fax: +82 29617831.
E-mail address: info@mauritsvandennoort.com.

Peggy Bosch
Donders Institute for Brain, Cognition and Behaviour,
Radboud University Nijmegen, Montessorilaan 3,
Nijmegen 6500, The Netherlands

LVR-Klinik Bedburg-Hau, Bahnhstrasse 6,
Bedburg-Hau 47511, Germany
E-mail address: p.bosch@donders.ru.nl.

Eslí Struys
Piet van de Craen
Department of Linguistics, Free University of Brussels,
Pleinlaan 2, Brussels 1050, Belgium

E-mail addresses: estruys@ubu.ac.be (E. Struys),
pvdcran@vub.ac.be (P. van de Craen).

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