Reviewer’s report

Title: Reduced Duration Mismatch Negativity in Adolescents with Psychotic Symptoms: further evidence for Mismatch Negativity as a possible biomarker for vulnerability to psychosis

Version: 2 Date: 24 October 2012

Reviewer: Patrik Roser

Reviewers report:

Murphy and colleagues present a study on the mismatch negativity (MMN) in adolescents with psychotic disorders. The authors found reduced duration MMN amplitudes at frontal and temporal electrode positions in subjects that have reported psychotic experiences compared to controls, thereby assuming that MMN deficits might serve as a possible biomarker for vulnerability to psychosis. The results are of high interest as, to the best of my knowledge, there are no other MMN studies in this very early stage of risk towards psychosis.

The aim of this work is clearly defined, the introduction is well written, the results are sound and presented in sufficient detail and the overall discussion and conclusions are well balanced and adequately supported by the data. Moreover, the title and the abstract are appropriate, the limitations of the study are clearly stated, the acknowledgements appear to be complete, and the writing is acceptable.

However, I have some major comments and questions, particularly regarding the methodology, that should be addressed prior to publication.

p. 4, l. 24: The abbreviation “PLE” should be preceded by its full name.

p. 6, l. 15: Interestingly, the participants had no family history of psychotic illness. Was this an exclusion criterion? (Subjects with positive family history and psychotic-like experiences would represent a sample at an even higher risk of psychosis and might possibly demonstrate more pronounced MMN deficits.)

p. 6, l. 20: A more detailed introduction into the K-SADS-PL would be helpful for those readers that are not familiar with this measure of psychotic symptoms. How were the statements of the participants and their parents handled in the case of any discrepancy?

p. 7, l. 2: The authors state that the participants’ psychotic symptoms have been assessed with regard to hallucinations and delusions. These are quite severe positive symptoms. Some more information on the psychotic symptomatology would be helpful to interpret the results. Have the authors also assessed more subtle psychotic as well as affective and neurocognitive symptoms? How have psychotic symptoms been defined? How was their appearance in terms of severity, duration and frequency?
The auditory stimuli were presented through the computer speakers at 80 dB. What was the rationale for not using headphones in order to reduce ambient noise and to keep the experimental stimulation set-ups and the SPL at a constant level?

Table 1: Just a small comment on the footnote: the authors presumably mean “microvolts” instead of “millivolts”.

Table 2: The authors included right- and left-handed participants in the study. Could they give a short statement on this aspect as they included laterality as a within-group factor to their ANOVA?

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.