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Probing attentive and preattentive emergent meter in adult listeners without extensive music training

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ERRATUM

Ladinig, O., Honing, H., Háden, G., & Winkler, I. (2009). Probing attentive and pre-attentive emergent meter in adult listeners without extensive music training. *Music Perception*, 26, 377–386.

Due to the authors' error, data analysis was not performed as stated in the published article. Here we present the corrected analysis (as stated in the Method section of the paper). The results are similar to those published with a few exceptions. These are noted and corresponding interpretations are provided. The error affected the MMN amplitudes entered into the Attention (Unattended vs. Passive) \times Position (Strong vs. Weak) \times Frontality (Frontal vs. Central electrode line) \times Laterality (Left vs. Middle vs. Right) ANOVA. MMN amplitudes were, in contrast to the published text and the figure (which are correct), incorrectly measured using the standard as opposed to the control data. MMN amplitudes have been remeasured using 30 ms wide time windows centered on the difference peaks (in contrast to the 60 ms window stated in the published text). This shorter time windows better fit the peaks on the deviant-minus-control difference waveforms. Table 1 with corrected measurements is included below. ANOVAs for these amplitude measures yielded the following results: significant main effects were obtained for Frontality, $F(1, 10) = 19.96$, $p < .01$, $\eta^2 = 0.67$, and Laterality, $F(2, 20) = 4.14$, $p < .05$, $\eta^2 = 0.29$; significant interactions between Attention \times Frontality, $F(1, 10) = 15.30$, $p < .01$, $\eta^2 = 0.60$, Frontality \times Laterality, $F(2, 20) = 5.00$, $p < .05$, $\eta^2 = 0.33$, and Attention \times Position \times Laterality,

$F(1, 10) = 7.32$, $p < .05$, $\eta^2 = 0.42$. A posthoc Tukey HSD test revealed that the Attention \times Frontality interaction was due to significantly higher central MMN amplitudes in the Unattended condition than in any other combination of the two factors ($df = 10$, $p < .01$ for all comparisons).

The lack of a significant Position effect on the deviant-minus-control difference amplitudes somewhat weakens the argument for representing the hierarchical metrical structure in the MMN system. However, the latency effect remains (it was correctly reported in the published work) and MMN peak latency rather than amplitude is the stronger indicator of the perceived magnitude of change (Schröger & Winkler, 1995). Please note that the behavioral results also indicate processing differences for omission of beats of different metrically based salience. The interactions involving the Attention factor probably reflect a partial overlap between the N2b and the MMN components: the more central than frontal scalp distribution of N2b interacting with the more frontal than central scalp distribution of MMN as a function of the attention condition. This result casts some doubt on whether the extraction of the metrical hierarchy is fully automatic. Further experiments are needed to clarify this issue.

References:

- SCHRÖGER, E., & WINKLER, I. (1995). Presentation rate and magnitude of stimulus deviance effects on human pre-attentive change detection. *Neuroscience Letters*, 193, 185–188.

TABLE 1. (corrected). Group-Averaged MMN Amplitudes in \leftrightarrow V with Standard Errors of the Mean (SEM) in Parentheses.

Attention Electrode/ Position	Passive		Unattended	
	Strong	Weak	Strong	Weak
F3	-1.07 (0.28)	-0.47 (0.35)	-0.82 (0.28)	-0.92 (0.28)
Fz	-1.08 (0.31)	-0.73 (0.50)	-1.01 (0.34)	-1.24 (0.29)
F4	-0.82 (0.24)	-0.49 (0.51)	-0.23 (0.13)	-1.14 (0.25)
C3	-0.89 (0.22)	-0.61 (0.33)	-1.44 (0.38)	-1.30 (0.31)
Cz	-1.03 (0.30)	-0.65 (0.42)	-1.57 (0.38)	-1.61 (0.32)
C4	-0.85 (0.24)	-0.63 (0.38)	-1.44 (0.33)	-1.59 (0.32)