

Comment on Schecklmann et al.: a call to consider both “negative” and “positive” results in brain research on tinnitus

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Dear Editors,

I write to comment on the manuscript by Schecklmann et al. “Auditory cortex is implicated in tinnitus distress: a voxel-based morphometry study” (online, 24 Feb 2013). In addition to presenting new voxel-based morphometry (VBM) data on tinnitus, it gives the impression of providing a comprehensive summary and discussion of the pre-existing literature, as any scientific manuscript should (see Table 1). I say “impression” because it includes many (but discordant) reported differences in brain structure between tinnitus subjects and non-tinnitus controls, but omits any mention of a highly controlled VBM study in which we found no such differences (Melcher et al., *Hear Res* 295:79–86, 2013). Specifically, we compared cohorts of tinnitus and control subjects that were pair-wise and mean-matched in important variables: hearing threshold, sex, and age. Our results were “negative” with respect to tinnitus in that no significant differences were found between tinnitus subjects and controls. But importantly, the result was “negative” presumably because of the close matching between groups. Also, we did not simply report a lack of difference between groups, but delved into our data to understand why previous studies seemed to show differences. We determined that hearing threshold, particularly at frequencies higher than those typically tested, correlated significantly with VBM measures in multiple areas, including one of the main areas previously reported to show tinnitus-related effects with VBM. We proposed that some of the previously reported differences in brain

structure were not, in fact, related to tinnitus and were instead related to hearing threshold over a frequency range not considered in the previous work. The bottom line is that our study was solid and is very much part of the VBM/tinnitus story.

While it is possible our manuscript was simply overlooked, it seems unlikely given the publication dates of manuscripts cited by Schecklmann et al. One manuscript went online only 3 weeks before ours and appeared in the same special journal issue on tinnitus. Another referenced manuscript appeared online 6 weeks after ours. Submission of the Schecklmann et al. manuscript followed a month later.

So why was our manuscript omitted? The title of Table 1 (“Grey matter findings in tinnitus as elicited by group contrasts”) may offer a clue. It promises to summarize reported “findings”, perhaps meaning “differences” related to tinnitus whereas our result was a lack thereof. Whether intentional or not, the Schecklmann et al. manuscript exemplifies a concerning trend in tinnitus research and in science at large—to focus on “positive” results while neglecting “negative” ones.

The reason for writing this letter is not that Schecklmann et al. failed to cite us *per se*, but that in omitting our study, they omitted one entire—perhaps inconvenient—aspect of the literature. As a result, their paper presents a distorted, rather than clarifying, view of the VBM/tinnitus literature that has potential for slowing progress toward a true understanding of the condition at hand—tinnitus. In order to speed progress, it is crucial that all of us investigating the neural bases of tinnitus, or any other neurological or psychiatric condition for that matter, thoughtfully weigh and discuss all the most relevant facts at hand. We owe it to the millions of people suffering from the conditions we study and who eagerly await a cure.

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