

Auditory Hallucinations: Debunking the Myth of Language Supremacy

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Over the past 3 decades, there has been increasing focus on the role of language in auditory hallucinations (AH). A current belief is that AH are fundamentally rooted in language processes, and that these experiences essentially comprise inner speech that is misattributed. Consequently, AH are now often used interchangeably with terms such as “voices” and “auditory verbal hallucinations (AVH).” A Medline search with the term “auditory verbal hallucinations” shows that this term was rarely used up to 1995, but now comprises one quarter of all publications on AH, with percentages effectively doubling every 5 years (figure 1). The language focus is clearly important for research and clinical applications, but “auditory processes” and “language” are not synonymous terms. We argue here that this selective emphasis has down-graded attention to other forms of AH and has contributed to a misinterpretation of findings. We propose that this language focus is an epiphenomenon of schizophrenia research, and that researchers need to amend their practice to reinstate non-verbal hallucinations on the research and clinical agenda.

Kraepelin observed that hallucinated voices have “greater convincing power than all other sense deceptions (...) because of the fundamental significance of language in our psychic life” (p.11).¹ Note here the selective emphasis apportioned to the important social communicative role of language, rather than to a phonological structure composed of words and morphemes. The critical shift in emphasis to “verbal” hallucinations can be precisely dated to the emergence of 2 influential theoretical frameworks in the 1990s.

First, was the seminal work by Romme and Escher² which showed that the restructuring of AH in the form of voices, and as personally meaningful, could have strong therapeutic effects. It was said that the content of the “voice is directly responsible for the person’s behavioural and affective response” (p. 293),³ and that the personalization of hallucinations in

the form of a significant individual in the person’s life could be used as a way to increase coping and reduce distress. This approach rapidly gained prominence and led the way for a new generation of psychological therapies.⁴

Second, Timothy Crow’s⁵ neurobiological model of schizophrenia suggested that lateralization pathology was a key determinant of schizophrenia, and by extension AH. Crow claimed that schizophrenia should be seen as a condition which can be understood in terms of deviations in cerebral lateralization and particularly in the neural control of language⁵ Language is a heavily lateralized function, so that reductions in lateralization and in left hemispheric dominance have been interpreted as reflecting a fundamental role of language deficit in psychosis. One consequence is that, AH are now often defined “a dysfunction in language processes” despite an increasing body of work showing that AH are common in a range of medical conditions and in persons without mental illness in which language or lateralization deviations are not implicated. In further support, a recent study using functional Magnetic Resonance Imaging compared the language lateralization and brain activation of psychotic, and non-clinical individuals with and without AVH, on a paced verbal fluency task. The results showed reductions in language lateralization only in the psychotic group, but not in the non-clinical groups regardless of AH status.⁶ The selective focus on language processes in AH is thus an epiphenomenon of schizophrenia research, and which has led to a misinterpretation of decreased lateralization findings in schizophrenia as a basis for AH.

More recently, the influential Hearing Voices Movement (HVM) set the final casting of AH into its iron verbal mold. Voices are a preferred term, as it makes a connection to a meaningful human experience rather than “an arbitrary content induced by disease.”⁷ This HVM approach is immensely valuable for its promotion of personal narratives, qualitative approaches and consumer involvement, although voice hearers themselves agree that the term

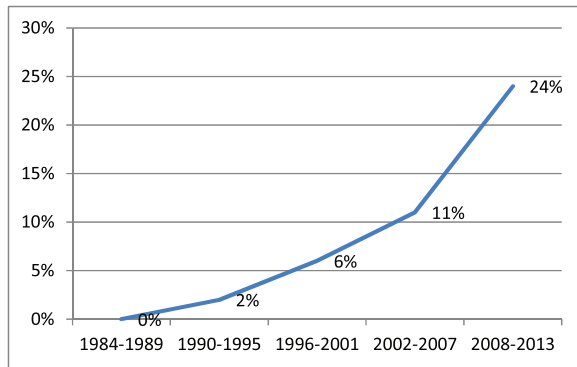


Fig. 1. Rise of articles on auditory hallucinations with the term “auditory verbal hallucinations” in the title or keyword since 1984 (in 5 year increments).

voices does not fully capture the entire range of AH experiences (*personal communications*). A very broad range of sounds can be heard in addition to (and sometimes instead of) voices. Musical hallucinations are extremely common, as are hallucinatory percepts of music, buzzing, rattling, whistling, bangs, animal calls, water falling, engines, and ringing. Often, there is complete absence of verbal material although a message or meaning is communicated without being heard (“soundless voices”).⁸ The clarity of hallucinated speech is indeed often low or fuzzy although the message is always clear to the patient.

Language and speech processing are clearly important, however underlying mechanisms of AH extend beyond those processes. For instance, a recent meta-analysis of functional brain imaging studies which explored the brain correlates of AH states in schizophrenia pointed to the activation of association sensory cortices, but not of the primary auditory cortex as might be expected given its intimate role with language.⁹ Looking more precisely at individual papers in that report, the primary auditory cortex was only described in some¹⁰ but not all studies, with differences possibly due to variations in phenomenological features not directly related to voices.¹¹

Assessment methods have also certainly contributed to this selective bias. Screening questions and clinical interviews specifically ask patients about “voices in your head.” Clinical interviews also force patients to articulate into words experiences that are largely experiential, and any ambiguity is often reworded by the eager interviewer to meet the scoring criteria of their clinical instruments. Given that experimental studies specifically ask about, and select participants, on the basis of verbal hallucinations, it is so surprising, then, to find a pattern of performance that involves “voice-selective brain areas?”

Important mechanisms of AH that exist beyond speech processing include the mental operations responsible for sensory processing,¹² self-recognition^{13,14} as well as those related to cognitive control.^{15,16} Thus a closer examination of other salient features of AH may be potentially

productive areas of research and clinical development in both psychiatric and non-psychiatric populations.

In conclusion, AH include a broad range of auditory percepts in addition to speech. The recent focus on language has been productive but it is over-simplification and over-rationalization of a complex phenomenon. This has limited the acquisition of new knowledge on other forms of AH, and contributed to the misinterpretations of findings. Results and conclusions are essentially predetermined by basic assumptions, so that reduced language lateralization as a premise for AH research is certain to lead us astray in our cross diagnostic investigations. We need to seriously re-evaluate our focus in research and keep our clinical evaluation and assessments free of any systematic biases.

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