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## Invited Editorial

# Auditory hallucinations in the population: what do they mean and what should we do about them?

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There has been a dramatic surge in research on auditory hallucinations over the past 15 years. Of the more than 100 papers identified in a recent meta-analysis of studies on definition, description and causes of auditory hallucinations (1), greater than 90% were published since the year 2000. This glut of publications points to an upheaval that has taken place in psychiatry. Simply put, there has been a paradigm shift: a movement away from the Schneiderian view of auditory hallucinations as (predominantly) symptoms of psychotic disorder, towards an increasingly accepted view that these are experiences that occur in the full range of mental disorders and, indeed, none.

Research on auditory hallucinations was galvanised in 2000 by the results of the Dunedin study, which showed that 11 year olds who reported psychotic symptoms (predominantly auditory hallucinations) were at increased risk of psychotic disorder at age 26 (2). As a result of this and subsequent research, individuals in the community with psychotic symptoms came to be perceived as an epidemiological complement to the clinic-based 'ultra high risk' approach to psychosis (3). Extensive epidemiological research since that time has hugely broadened this focus to show that individuals who report hallucinations are at high risk for a wide range of poor outcomes across the whole spectrum of mental disorders, but in particular multimorbid (non-

psychotic) mental disorders, suicidality, poor socio-occupational functioning and neurocognitive deficits (4, 5).

The findings that auditory hallucinations in the population are far more predictive of affective, anxiety and behavioural disorders (and indeed of no specific mental disorder) than psychotic disorders, has caused a conundrum for clinicians. If these symptoms are so non-specific, what (if anything) can we, or should we, do about them? In one of the longest follow up studies to date Bartels-Velthuis et al found that only 18% of children and adolescents with auditory hallucinations continued to experience these 6 years later, and only 6% a decade later (6). This demonstrates that hallucinations become a chronic problem for only a minority of children when followed to adulthood.

Notwithstanding the low persistence rate of hallucinations over time, we know that a report of auditory hallucinations even at one point in adolescence is associated with poor mental health outcomes in a substantial proportion of individuals. This presents an important opportunity to identify a vulnerable group for early intervention. The question, then, is how do we improve our identification of the specific individuals who are likely to have poor

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outcomes and how do we differentiate them from auditory hallucinations that will take a benign course?

Many clinicians suspect that specific aspects of the hallucinations are likely to identify those who are truly at risk of poor outcomes, including (but not limited to) pathways to psychosis. Just as there are clinical features of headache that point to risk of a non-benign course (e.g., nuchal rigidity and photophobia), so too might there be clinical features of hallucinatory experiences that would predict a non-benign course—be it, for example, phenomenological aspects of the experience, degrees of reality testing, associated distress or functional impact. Both in research and in the clinic, however, characterisation of these aspects of hallucinatory experiences is typically poor and, without doubt, is poorly standardised from one site to the next. That is despite the fact that we have, in psychiatry, a rich descriptive system for hallucinatory experiences.

As highlighted by Upthegrove et al. in their recent meta-analysis, even when specific psychosis interview instruments are used, they take a rather atheoretical approach in determining what aspects of hallucinations to assess, “without clear evidence that these are either the aspects research should be focusing on or those which define clinically significant experiences from ‘normal’ voice hearing” (1). At present, we are ill-equipped to determine the aspects of hallucinations on which we should focus. Progress on this front is dependent on adopting more standardised approaches to assessment (and, crucially, clinical documentation) of hallucinations, which will facilitate research on the prognostic significance of these features. The basis of this must be a consistent clinical approach to assessing hallucinatory experiences from one site to the next.

It was with the above in mind that we formulated the SOCRATES assessment as a means of providing a

straightforward structure for assessing hallucinations and unusual thought content in routine clinical settings (7), the idea being to promote a consistent assessment across multiple phenomenological and clinical/functional domains each time a patient reports hallucinations (or unusual thought content). The SOCRATES mnemonic prompts the assessor to note details on (i) Source or location of hallucinations (internal or external space); (ii) Onset, duration and frequency of hallucinations, (iii) Character (e.g., shouting/whispering, emotional valence) and content of the hallucination (e.g., whether in 1<sup>st</sup>/2<sup>nd</sup>/3<sup>rd</sup> person, specific examples/themes spoken about etc); (iv) Reality testing and Attribution; (iv) Timing (e.g. only in the context of drug /alcohol use; only hypnopompic/hypnagogic); (v) Effects on functioning (including degree of control) and (vi) Severity of distress (rated 1-10). See Table 1 for an example. The idea is that any clinical assessment of hallucinations or unusual thought content should include the above details as standard. By taking standardised approaches to the assessment of hallucinations, this will facilitate research on prognostic significance of specific aspects of psychotic experiences both within and between services – something sorely lacking from clinical research at this point in time. This descriptive approach would also help us to move away from the simplistic documentation of hallucinations for some cases and ‘pseudohallucinations’ for others, a term used far too flexibly and which is often chosen primarily based on the diagnosis within which the symptom arises, rather than any substantive difference from perceptual abnormalities experienced in schizophrenia.

### What to do about auditory hallucinations?

This all begs the question: what should we do about hallucinations when they are reported. Regardless of the relatively low rate of persistence over time, for many individuals hallucinations are associated with distress and/or dysfunction. Although there is a lack of clear guidance to direct clinicians, research findings to

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Table 1: Clinical documentation of auditory hallucination using SOCRATES formulation – a practical example

<b>Source</b>	External space.
<b>Onset</b>	2 months ago.
<b>Duration</b>	Average 15mins (range 10mins – 1hour).
<b>Frequency</b>	2-3 times per day, 4-5 days per week. No change in frequency since onset.
<b>Character</b>	One voice only. Sounds like a man in his 20s, similar to own accent, but distinct from own voice. Normal volume, rate and tone of voice. Emotional valence: negative (“He’s bad”).
<b>Content</b>	2 <sup>nd</sup> person critical comments, e.g., “Why are you doing it <i>that</i> way; you’re so stupid”. No 1 <sup>st</sup> person, 3 <sup>rd</sup> person, running commentary, commands.
<b>Reality testing and Attribution</b>	“I think it’s someone watching me”. No clear idea of who this might be. Reality testing intact when directly challenged: 70% ‘someone watching me’ vs 30% ‘my imagination playing tricks on me’.
<b>Timing</b>	Mainly hears voice when he is alone. Not hypnagogic/hypnopompic. No alcohol, substances, febrile illness.
<b>Effects on functioning</b>	Has locked himself in his bedroom to try to ‘escape’ the voice. Has responded to the voice out loud (“Shut up!”). Does not feel the voice has any control over him.
<b>Severity of distress</b>	9/10

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date point to a number of approaches that can benefit help seekers.

1. Demystify and destigmatise. Individuals are typically well aware that their experiences are socially unacceptable and that to disclose them would invite scorn or fear. This adds greatly to the burden of coping with these experiences; indeed, in many cases, much of the distress relates to anxiety that these symptoms are harbingers of doom – ‘I’m going mad!’ – as opposed to distress around the experience itself (to quote Hermione in *Harry Potter and the Chamber of Secrets*, “Even in the wizarding world, hearing voices isn’t a good sign”). In this context, it is not surprising that the clinician who directly asks about perceptual abnormalities is often the very first person to be told about them. An unflappable reaction to such a disclosure can prove therapeutic in and of itself. Psychoeducation helps to decatastrophise the experiences by highlighting how prevalent these experiences are (5-7% of the general adult population report them), especially given that the patient’s perception of an individual who ‘hears voices’ is often based on sensational portrayals of schizophrenia in film. “It does not mean you’re going mad” can prove a very therapeutic phrase.

2. Assess for and treat all mental disorders. Hallucinations are associated with a wide range of mental disorders but are especially predictive of multimorbid psychopathology – that is, having more than one mental disorder (4). It is important to identify and treat *all* disorders. In many cases, as any co-occurring mental disorders improve, so too do hallucinations.

3. Identify ongoing traumatic experiences. We previously demonstrated that individuals who experienced physical assaults had a high risk of auditory hallucinations. However, individuals for whom these assaultive experiences ceased demonstrated a marked decline in prevalence of hallucinations at follow up assessment. Individuals for whom assaultive experiences persisted, on the

other hand, maintained or increased their prevalence of hallucinations (8). The same effect was demonstrated for cessation of bullying. There is often a lot of shame for individuals with abusive experiences, which hinders their willingness to report them. Therefore, the clinician has an important role to play in eliciting traumatic experiences and, wherever possible, acting to prevent further occurrences. Just as respiratory physicians address the importance of smoking cessation to prevent lung disease, so too should psychiatrists be ready to acknowledge and address trauma as a major environmental risk for mental ill health.

4. Advise patients on other modifiable risk factors, most notably drug use. Patients should be advised of the psychogenic risks associated with cannabis (and other substances), including the risk of transient hallucinations becoming a chronic condition. It is likely that individuals who experience hallucinations are at particular risk from substances and, therefore, unambiguous advice on abstinence from drugs is an important clinical message.

### Where to from here?

There has been an upheaval in our understanding of hallucinations in modern psychiatry. Far from being predominantly symptoms of psychosis, these are experiences that occur in the full range of mental disorders and, indeed, none. In light of extensive research over the past 15 years, the very idea of terming these experiences ‘psychotic’ is questionable, occurring, as they do, much more frequently in the context of ‘neurotic’ (or even no) disorder. A greater emphasis on clinical research (using core psychiatric skills, such as phenomenological investigation) will help to determine if clinical features of these experiences predict pathways to psychosis and other poor outcomes, as opposed to cases where these experiences run a relatively benign course. Greater standardisation of assessments from one clinical site to the next is needed if we are to succeed in this work.

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