Definitions
Hallucinations are perceptions that have all the attributes of reality but can’t be shared. They occur in the absence of an external stimulus and are usually beyond the control of the person experiencing them (Slade & Bentall, 1988). They occur in as many 'modalities' as we have senses, such as

- visual (visions and patterns) (Manford & Andermann, 1998)
- audio (voices, music and other sounds)
- olfactory (smells), gustatory (tastes)
- tactile (surface ‘touching’)
- somatic (in body feelings)

Hallucinations sometimes occur in several modalities concurrently (Chesterman & Boast, 1994).

Distribution/Occurrence
Hallucinations are related to a large number of illnesses as well as reactions to trauma, drugs and prescribed medications. Audio hallucinations (usually as ‘voices’) are by far the most common and the presence of visual hallucinations might indicate an increased severity of pathology (Mueser, Bellack, & Brady, 1990).

There have been calls to redefine the concept of hallucinations within the Diagnostic and Statistical Manual since it fails to distinguish pathological from nonpathological experiences, and it fails to consider cultural beliefs in determining whether an experience is hallucinatory (Liester, 1998).

Hallucinations have a gender (significantly more ‘voices’ in women) (Rector & Seeman, 1992) and cultural aspect to their phenomenology (McGlashan & Bardenstein, 1990).

The actual form of the voice is also gendered and is more often male than female, with explanations ranging from males being more likely to be the abuser, to male voices being more likely to be misattributed from a thought to a voice (because male voices have a less complex form and are more easily misunderstood as a voice rather than as a thought). Cultural attitudes toward hallucinations tend to affect the emotional reaction to and the degree of control of these experiences. In western culture, hearing voices is understood to be symptomatic of psychiatric illness. In another culture they might be seen as a gift from another higher world (al-Issa, 1995) (Klemperer, 1995).

One of the earliest complete descriptions of hallucinations in modern psychiatry was from Haslam, an enlightened physician at that time working at
the Bethlem hospital (Haslam, 1810). Both Haslam and the great French psychiatrist, Esquirol, believed hallucinations were extra activity in the brain rather than spiritual or devilish influences. Esquirol may have been the first to use the word hallucination, a word derived from the Latin to mean a wandering in the mind, in the context of voices.

In previous centuries hallucinations had a largely religious explanation, if they were benevolent in nature they were interpreted as angelic or godly but if malevolent they were interpreted as work of the devil.

A more generalized account of hallucinations appeared in several editions at the middle of the nineteenth century (Briere de Boismont, 1853).

Hallucinations were not considered of primary importance in the diagnosis of schizophrenia compared to the decline in cognitive abilities. This emphasis changed with the work of Kurt Schneider who described audio hallucinations, especially those that were commenting on the person, as being part of the 'first rank' symptoms (Schneider, 1952).

However, around the same time investigators were finding hallucinations appearing in 'normal' persons subjected to sensory deprivation, despite having no such experience prior to the experimental situation (Hauty, 1964).

Other investigators did not find clear differences in the way hallucinations are perceived by persons with schizophrenia or affective disorders and that objective assessors were not able to differentiate them. See also (Andrade, Srinath, & Andrade, 1989).

Those who were hallucinating were unreliable in their reporting of the hallucinations especially the extent of 'realness' (Junginger & Frame, 1985). However, other investigators propose that hallucinations in both affective disorders and schizophrenia are both due to information processing errors. Different mechanisms seem to be at work, gating errors being suggested as a problem in affective disorders, and a failure in source inhibition in schizophrenia (Carr & Wale, 1986).

Similar proposals are discussed in another study that linked different coping strategies with different pre-morbid cognitive styles (Heilbrun, Diller, Fleming, & Slade, 1986). See also (Bullen & Hemsley, 1987).

Psychological explanations concentrate on the 'self generated' nature of voices (Bentall, Baker, & Havers, 1991), which is an explanation that baffles some voice hearers because their 'voices' often have semantic consistency (same content etc) that makes them seem to be distinct and separate entities (Hoffman, Oates, Hafner, Hustig, & McGlashan, 1994).
Further evidence for the language error basis of 'voices' is postulated by Hoffmann and others (Hoffman & Satel, 1993) and evidence from differences in brain functioning when imagining an external voice (McGuire et al., 1995).

In studies of brain functioning, there seems to be differences in the areas of activity in those who are hallucinating, compared to "normals", especially in regions associated with language, such as Broca's area (Cleghorn et al., 1990) and reduced activity in Wernicke's area (Cleghorn et al., 1992) and in some hallucinators, there is an enlargement of the third ventricle, which the author suggests is an organic marker for poorer outcome for psychotherapy (Cullberg & Nyback, 1992). These differences are present in those with or without medication (Silbersweig et al., 1995).

'Auditory hallucinatory state' is also associated with reduced activity in temporal cortical regions that overlap with those that normally process external speech, possibly because of competition for common neurophysiological resources (Woodruff et al., 1997).

Honig et al examined the similarities and differences in hallucinations between different groups in the summary below:

The form and the content of chronic auditory hallucinations were compared in three cohorts, namely patients with schizophrenia, patients with a dissociative disorder, and nonpatient voice-hearers.

The form of the hallucinatory experiences was not significantly different between the three groups. The subjects in the nonpatient group, unlike those in the patient groups, perceived their voices as predominantly positive: they were not alarmed or upset by their voices and felt in control of the experience.

In most patients, the onset of auditory hallucinations was preceded by either a traumatic event or an event that activated the memory of earlier trauma.

The significance of this study is that it presents evidence that the form of the hallucinations experienced by both patient and nonpatient groups is similar, irrespective of diagnosis. Differences between groups were predominantly related to the content, emotional quality, and locus of control of the voices.

In this study the disability incurred by hearing voices is associated with (the reactivation of) previous trauma and abuse (Honig et al., 1998).

In the summary below by Wiersma et al:
Wiersma et al examined a total of 40 patients with therapy-refractory auditory hallucinations who received standard care plus cognitive therapy with coping training. In a retrospective, descriptive study, multiple assessments of outcome were measured.

The experimental therapy seems to improve both overall symptomatology and quality of life, and is acceptable to both patients and relatives. Generalization to daily functioning and continuation over time was observed. Improvements with regard to the occurrence of hallucinations, fear, disturbance of thought, social interactions and daily activities were significant. Complete disappearance of hallucinations occurred in 20% of participants, and in 40% of those who were regularly discharged from treatment.

The level of satisfaction with therapy was high (78%), and the drop-out rate was low (9%). Improvement was not significantly correlated with psychiatric diagnosis (schizophrenia vs. other diagnoses), and was sustained at follow-up after 1 year.

A later study investigated the durability of positive effects of cognitive behaviour therapy (CBT) with coping training on psychotic symptoms and social functioning. Method: Forty patients with schizophrenia or related psychotic disorders and refractory auditory hallucinations were given CBT and coping training in an integrated single family treatment programme. In a naturalistic study patients were followed after 2 and 4 years since the start of treatment. RESULTS: The treatment improved overall burden of ‘hearing voices’, with a generalization into daily functioning. Improvement with regard to fear, loss of control, disturbance of thought and interference with thinking was sustained by 60% of the patients while one-third improved further. Complete disappearance of hallucinations occurred in 18% of the patients.

CONCLUSION: CBT with coping training can improve both overall symptomatology and quality of life, even over longer periods of time, but a status of persistent disablement indicates a continuing need for mental health care (Wiersma, Jenner, van de Willige, Spakman, & Nienhuis, 2001).

The theme that is consistent in the early literature is that audio hallucinations are not unique to a diagnosis of schizophrenia but are found in a vast array of conditions from strokes to drug use (Asaad & Shapiro, 1986). Romme and Escher also discovered hearing voices to be present in persons with no clear pathological origin (M. A. Romme & Escher, 1989) which was confirmed by large scale study of the prevalence and distribution of hallucination at more than 2% for voices (Tien, 1991). This occur-
rence in 'normal' populations has allowed a 'normalising' approach to be used in therapy. This normalising helps a person to understand the connection between voices and their experiences (Kingdon & Turkington, 1991).

Romme and others carried out a further study to find who could cope with voices and found four coping strategies were apparent: distraction, ignoring the voices, selective listening to them, and setting limits on their influence (M. A. Romme, Honig, Noorthoorn, & Escher, 1992). Tarrier et al reinforced coping abilities and found improved short term outcomes (Tarrier et al., 1993).

The following is a copy of an abstract from Haddock et al's approach to working with voices:

*Cognitive-behavioural interventions for patients experiencing neuroleptic resistant auditory hallucinations have fallen into two main categories: those which encourage distraction as a coping strategy, and those which encourage patients to focus on or expose themselves to their hallucinations. A 20-session distraction treatment was compared with an equal length focusing treatment for 19 patients who were experiencing chronic auditory hallucinations. Patients were followed-up for approximately 2 years.*

*No differences were observed between the groups for outcome on symptom severity overall, although the focusers showed a greater belief that their voices were their own thoughts at the final follow-up point. When the two groups were combined, there was a significant reduction in the frequency of hallucinations and the disruption to life caused by them during treatment, although this was not maintained at follow-up.*

*During treatment, there was a significant increase in self-esteem for focusers but a significant decrease for distracters. At 2-year follow-up, both focusers and distracters showed a reduction in self-esteem in comparison to the end of therapy.*

*The results show no overwhelming advantage of one treatment over the other and confirm previous observations of the difficulty of treating hallucinations with cognitive-behaviour therapy (CBT). However, there was some indication that CBT influenced some important clinical variables and further investigation is warranted. (Haddock, Slade, Bentall, Reid, & Faragher, 1998).*

There is consistent evidence of a link between trauma and hallucinations, including childhood abuse (Heins, Gray, & Tennant, 1990) and these are thought by some practitioners to be qualitatively different from schizophrenia (Kaufman, Birmaher, Clayton, Retano, & Wongchaowart, 1997).
Psychosis in itself is traumatizing; for example nasty voices or frightening beliefs are in themselves disturbing, providing a vicious circle for the formation of hallucinations (Shaw, McFarlane, & Bookless, 1997).

Hearing voices and experiencing hallucinations seems to have cultural difference in their origins and cultural difference exist in coping too; for example a Saudi group of voice hearers were much more likely to use religious ideas in coping (Wahass & Kent, 1997).

Psychological help for the distress linked to critical voices included ear plugs, based on the theory by Green that voices in some persons, are linked to sub-vocalising and therefore if the hearing of external audio stimuli was disrupted by using an ear plug the it might be possible to disrupt the 'voice' too. In the single case study his proved very helpful but it seemed to work if the plug was in either ear, which was not consistent with Green's theory of one-sided hemispherical problems in monitoring the sources of 'voices' as internal or external, see also (Done, Frith, & Owens, 1986) and (Bick, 1987). However, other studies failed to replicate a link between sub vocalization and voice hearing (Junginger & Rauscher, 1987). Humming has also been proposed as a way of interrupting hallucinations works by interrupting the subvocalisation (Green & Kinsbourne, 1989).

The concept of the 'phonological loop' has been proposed, where voice hearing occurs because of a failure in feedback to connect thoughts with mind, rather than external sources but counter evidence for the idea is also presented (David & Lucas, 1993). This may be a failure in pre-frontal cortex processing, failing to monitor the source of signals (Frith & Dolan, 1996).

Leuder et all also made a study of voices and what they called the pragmatics of language, concluding that voices are similar to inner speech in that the content was much shorter than normal conversations, with voices frequently being linked to persons the voice hearer knows (Leudar, Thomas, McNally, & Glinski, 1997).

It is possible that voice hearers are biased toward attributing audio hallucinations to external rather than internal processes (A. P. Morrison & Haddock, 1997), confirmed in a later study (Baker & Morrison, 1998).

It is also possible that voice hearers have a more 'passive' approach to new information than non voice hearers. This might mean that thoughts are more easily accepted as voices because the person does not discriminate by interacting with new information.
Another behavioral technique involved practicing coping using a tape-recorded 'voice' (McInnis & Marks, 1990).

Psychological treatment is complicated by the relationship that the person has developed with the voice (Benjamin, 1989) in that the person is likely to resist nasty voices and engage with benevolent ones (Chadwick & Birchwood, 1995). It is possible that there is no single coping method that fits all voice hearers and that a variety may be used (Carter, Mackinnon, & Copolov, 1996) with continued practice giving the greatest chance of success (Buccheri, Trygstad, Kanas, & Dowling, 1997).

A surprising finding in one study was that active resistance to the voice was not as effective as hoped (Farhall & Gehrke, 1997). However, even chronic voice hearing is amenable to improvement by cognitive behavioural therapy (Jimenez, Todman, Perez, Godoy, & Landon-Jimenez, 1996).

A group of occupational therapists provided interventions linked to the functional deficits of the voice hearer (MacRae, 1997).

The literature is ambivalent about the status of command hallucinations in increasing risk to self and others with early studies suggesting no difference but showing strong links to seriousness of pathology and length of stay (Hellerstein, Frosch, & Koenigsberg, 1987). Commands to complete suicide may put some patients at greater risk (Zisook, Byrd, Kuck, & Jeste, 1995). The likelihood of complying with a command was linked to 'knowing' the voice rather than the seriousness of the consequence of complying (Junginger, 1990) and this was confirmed in a later study (Junginger, 1995). In addition, if the voice was seen as benevolent then there is an increased chance of compliance (Beck-Sander, Birchwood, & Chadwick, 1997).

Recovery may be impeded by consistently nasty and commanding voices (Cullberg, 1991). Trower describes a successful therapy for Cognitive Therapy for Command hallucinations (CTCH):

> In a total of 38 patients with command hallucinations, with which they had recently complied with serious consequences, were allocated randomly to CTCH or treatment as usual and followed up at 6 months and 12 months. Results: Large and significant reductions in compliance behaviour were obtained favouring the cognitive therapy group (effect size = 1.1). Improvements were also observed in the CTCH but not the control group in degree of conviction in the power and superiority of the voices and the need to comply, and in levels of distress and depression. No change in voice topography (frequency, loudness, content) was observed. The differences were maintained at 12 months' follow-up. Conclusions: The results support the efficacy of cognitive therapy for CTCH (Trower et al.,
Groupwork for psychosis has a long evidence base (Wykes et al., 2005) including for older clients (Lee, Hannan, van den Bosch, Williams, & Mouratoglu, 2002). We have provide references for groupwork elsewhere. Groupwork for voices is a widespread intervention by professionals and peer groups (supported by the Hearing Voices Network (Downs, 2001), see James for a summary of the history (James, 2001)).

Many texts have now become available for practitioners (M. A. J. Romme & Escher, 2000) and voice hearers (Watkins, 1998) to help working with voices.

Several novel techniques are being developed to work with voices including forming a dialogue with the voices (Davies, Thomas, & Leudar, 1999) and using drama therapy to understand the structure of the voices in three dimensions. From this understanding new narratives are used to form helpful stories which helps in the healing from the negative effects of voice hearing (Casson, 2001).

General approaches to voices include:

- CBT (Wright, Turkington, Kingdon, & Basco, 2009).
- Narrative approaches (forming a story about the voices) (Rhodes & Jakes, 2009).
- A focus on the origins of many voices hearers experiences in trauma are examined (Larkin & Morrison, 2006).
- Specific texts are written about command hallucinations using a social rank (power) approach, changing the power of the voices from being greater than the voice hearer to being less powerful than the voice hearers (Byrne, 2006).
- There are many biographical accounts of working with voices (Steele & Berman, 2001).

We hope this annotated list of references is helpful but the literature is growing all the time. In addition to the book list elsewhere on the website there are a number of books that have recently been published specifically to deal with voices and hallucinations. These are very specialised texts:

**Hallucinations: A Guide to Treatment and Management [Hardcover]**
Frank Larøi (Editor), André Aleman (Editor)
- Hardcover: 405 pages
- Publisher: OUP Oxford: 1 edition (10 Jun 2010)
- ISBN-10: 0199548595

**A Dictionary of Hallucinations [Hardcover]**
Jan Dirk Blom
References


Haslam, J. (1810). *Illustrations of madness: exhibiting a singular case of insanity, and a no less remarkable difference in medical opinion: developing the nature of assaultment... with a description of the tortures experienced by bomb-bursting, lobster-cracking, and lengthening the brain.* London: Printed by G. Hayden ... ; and sold by Rivingtons ...


Wykes, T., Hayward, P., Thomas, N., Green, N., Surguladze, S., Fannon, D., et al. (2005). What are the effects of group cognitive behaviour