

**Command Hallucinations and the Risk of Violence and Self-Harm: What distinguishes
compliers from non-compliers?**

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Abstract

The main aim of this study was to explore and identify the factors associated with compliance with command hallucinations to harm self or others. The theoretical foundations lie in psychological models of auditory hallucinations in general and command hallucinations in particular, and in social models of compliance. Previous research in this area has highlighted the importance of beliefs about self and beliefs about voices in understanding the relationship between the command and the associated behaviour. Seventy four individuals who reported hearing voices were recruited into the study, 76% of these reported currently hearing command hallucinations (CH); 88% of whom reported hearing dangerous commands to either harm others, or harm or kill themselves. CHs were followed up at two intervals over a six month period. In terms of compliance, a good deal of support emerged for the beliefs aspect of the cognitive behavioural model of command hallucinations. All compliers, regardless of the content of the command were more distressed than non-compliers and reported stronger beliefs about malevolence and omnipotence. The findings with regard to beliefs about benevolence were more inconsistent. In addition to beliefs about voices, there were factors that appeared to be specific to compliance with each respective content: those who complied with harm-other commands were significantly more compliant by nature, reported significantly higher levels of guilt, rated their voices as louder and more real, and were significantly more resistant towards the voices; those who complied with suicide commands appeared to do so because they believed themselves to be inferior to others and felt that they didn't belong, and because the commands were congruent with their mood and beliefs; those that complied with commands to self-harm appeared to do so because they felt physically and emotionally overwhelmed by the commands. The thesis concludes with a discussion of the current findings and the implications for future research into this area and the clinical treatment and management of command hallucinations.

List of Tables

<u>Table 3.1: Number of sample reporting each command content (n = 10)</u>	76
<u>Table 3.2: Matrix of reliability coefficients for content</u>	79
<u>Table 3.3: Matrix of reliability coefficients for past behavioural response</u>	80
<u>Table 3.4: Matrix of reliability coefficients for current behavioural response</u>	80
<u>Table 3.5: Matrix of reliability coefficients for function of the behavioural response</u>	81
<u>Table 3.6: Matrix of reliability coefficients for coping strategies</u>	82
<u>Table 4.1: Frequency of diagnoses in CH and GH groups</u>	91
<u>Table 5.1: Demographic details of the four groups.</u>	109
<u>Table 5.2: Results for between group comparison of never heard vs ever heard a dangerous command</u>	115
<u>Table 5.3: Means for length of time hearing voices and trauma variables for the three voice hearing groups</u>	117
<u>Table 5.4: Results of the between group analysis comparing general hallucinators with command hallucinators</u>	125
<u>Table 5.5: PSYRATS data</u>	127
<u>Table 5.6: Between group analysis of the BAVQ-R</u>	128
<u>Table 5.7: Between group comparison of trauma variables</u>	129
<u>Table 5.8: Results from correlational analysis of trauma, beliefs about voices and distress</u>	131
<u>Table 5.9: Between group analysis comparing the general mental state of those with and without command hallucinations to harm others</u>	137
<u>Table 5.10: Between group analysis comparing voice characteristics of those with and without command hallucinations to harm others</u>	139
<u>Table 5.11: Between group analysis comparing beliefs about voices of those with and without command hallucinations to harm others</u>	140

<u>Table 5.12: Between group analysis comparing scores on the social comparison scale of those with and without command hallucinations to harm others</u>	141
<u>Table 5.13: Between group analysis comparing general mental state of those with and without command hallucinations to commit suicide</u>	142
<u>Table 5.14: Between group analysis comparing voice characteristics of those with and without command hallucinations to commit suicide</u>	143
<u>Table 5.15: Between group analysis comparing beliefs about voices of those with and without command hallucinations to commit suicide</u>	144
<u>Table 5.16: Between group analysis comparing scores on the social comparison scale of those with and without command hallucinations to commit suicide</u>	145
<u>Table 5.17: Between group analysis comparing general mental state of those with and without command hallucinations to harm self</u>	146
<u>Table 5.18: Between group analysis comparing voice characteristics of those with and without command hallucinations to harm self</u>	147
<u>Table 5.19: Between group analysis comparing beliefs about voices of those with and without command hallucinations to harm self</u>	148
<u>Table 5.20: Between group analysis comparing scores on the social comparison scale of those with and without command hallucinations to commit suicide</u>	149
<u>Table 5.21: Between Group comparison of all variables based on predominant content</u>	151
<u>Table 5.22: Between Group Analysis Continued</u>	152
<u>Table 5.23: Frequency data for behavioural responses to each type of dangerous command</u>	159
<u>Table 5.24: Comparison of voice variables of compliers and non-compliers with a lifetime history of harm-other commands</u>	162
<u>Table 5.25: Comparison of Beliefs about Self and Interpersonal Behaviour of compliers and non-compliers with a lifetime history of harm-other commands</u>	164

<u>Table 5.26: Comparison of Mental State of compliers and non-compliers with a lifetime history of harm-other commands</u>	165
<u>Table 5.27: Comparison of Voice Variables of compliers and non-compliers with current harm-other commands</u>	167
<u>Table 5.28: Comparison of Beliefs about Self and Interpersonal Behaviour of compliers and non-compliers with current harm-other commands</u>	168
<u>Table 5.29: Comparison of General Mental State of compliers and non-compliers with current harm-other commands</u>	169
<u>Table 5.30: Comparison of Voice Variables of compliers and non-compliers with a lifetime history of suicide commands</u>	171
<u>Table 5.31: Comparison of Beliefs about Self and Interpersonal Behaviour of compliers and non-compliers with a lifetime history of suicide commands</u>	172
<u>Table 5.32: Comparison of General Mental State of compliers and non-compliers with a lifetime history of suicide commands</u>	173
<u>Table 5.33: Comparison of Voice Variables of compliers and non-compliers with current command hallucinations to commit suicide</u>	175
<u>Table 5.34: Comparison of Beliefs about Self and Interpersonal Behaviour of compliers and non-compliers with current command hallucinations to commit suicide</u>	176
<u>Table 5.35: Comparison of General Mental State of compliers and non-compliers with current command hallucinations to commit suicide</u>	177
<u>Table 5.36: Comparison of Voice Variables of compliers and non-compliers with current command hallucinations to self-harm</u>	179
<u>Table 5.37: Comparison of Beliefs about Self and Interpersonal Behaviour of compliers and non-compliers with current command hallucinations to self-harm</u>	180

<u>Table 5.38: Comparison of General Mental State of compliers and non-compliers with current command hallucinations to self-harm</u>	181
<u>Table 5.39: Behaviour associated with command hallucinations over time.</u>	191
<u>Table 5.40: Individual Predictors of Behavioural Response to Suicide Commands at one-month follow-up</u>	195
<u>Table 5.41: Individual predictors of behaviour associated with suicide commands at one month (using attractiveness)</u>	197
<u>Table 5.42: Individual predictors of compliance with command hallucinations to harm self at six month follow-up</u>	199

Contents

Declarations	i
Acknowledgements	ii
Abstract	iii
List of Tables	iv
Contents	1
Appendices	233
Chapter 1 - Introduction to Auditory Hallucinations	1
1.1 Overview	1
1.2 Definition of Hallucinations	1
1.3 Auditory Hallucinations	2
1.4 Why study auditory hallucinations?	3
1.5 Accounts of Auditory Hallucinations	3
1.5.1 Historical accounts of hearing voices	3
1.5.2 Hallucinations as a spiritual experience	4
1.5.3 Hallucinations as a sign of mental illness	5
1.5.4 Hallucinations as a first rank symptom of schizophrenia	5
1.6 What is schizophrenia?	6
1.6.1 Validity of schizophrenia as a single disease	6
1.7 Auditory hallucinations in the general population	9
1.7.1 Epidemiological Studies	9
1.7.2 Selective populations - college students	10
1.7.3 Coping with hearing voices	11
1.8 Psychological understandings of auditory hallucinations	14
1.8.1 The occurrence of auditory hallucinations – neurocognitive models	15

- Introduction to Auditory Hallucinations	
1.8.2 The personal meaning of voices	16
1.8.3 Cognitive-behavioural accounts of voices	17
Chapter 2 - Command Hallucinations	25
2.1 Risk Assessment	25
2.2 Definitions - What are Command Hallucinations?	26
2.3 What distinguishes those that hear commands from those that don't?	28
2.4 Prevalence of Command Hallucinations	31
2.5 Content of commands	33
2.6 Are command hallucinations associated with risk behaviour?	35
2.6.1 Case Study Data	36
2.6.2 Studies on State Recordings	36
2.6.3 Larger Studies using Clinical Populations	38
2.7 Distinguishing Compliers from Non-Compliers – Mediating Variables	47
2.7.1 Characteristics of the Voice and Topographical Variables	47
2.7.2 Beliefs About Voices	50
2.7.3 The relationship between voice and voice hearer	52
2.7.4 Additional Variables	53
2.7.5 Comment	54
2.8 Cognitive Behavioural Model of Command Hallucinations	55
2.9 Summary and Introduction to the Current Study	60
Chapter 3 - The Command Hallucinations Rating and Interview Schedule (CHRIS)	63
3.1 Introduction	63
3.2 Methodology	69
3.2.1 Design	69
3.2.2 Participants	69
3.2.3 Measures	70
Belief About Voices Questionnaire – Revised (BAVQ-R, Chadwick, Lees & Birchwood, 2000).	73
3.3 Procedure	74
3.4 Results	75
3.4.1 Voice Characteristics	75

- Introduction to Auditory Hallucinations

3.4.2	General Mental State	76
3.4.3	Reliability analysis	77
3.4.3.1	Content	77
3.4.3.2	Behavioural Response	79
3.4.3.3	Function of behaviour	80
3.4.3.4	Coping	82
3.5	Discussion	83
Chapter 4 - Methodology		88
4.1	Design	88
4.2	Participants	88
4.3	Measures	92
4.3.1	Current Mental State	92
4.3.2	Assessment of Voices	95
4.3.3	Trauma	99
4.3.4	Interpersonal factors	101
4.3.5	Cognitive Abilities	104
4.4	Procedure	104
4.4.1	Ethical Approval	104
4.4.2	Recruitment	104
4.4.3	Interview	105
4.4.4	Follow-Up	106
4.5	Analysis	107
Chapter 5 Results		109
5.1	Introduction to chapter	109
5.2	What distinguishes those that hear commands from those that don't?	111
5.2.1	Introduction to hypotheses	111
5.2.2	Participants	113
5.2.3	Results	114
5.2.4	Interim Discussion	119
5.3	What distinguishes those that currently hear commands from those that do not currently hear commands?	121

- Introduction to Auditory Hallucinations

5.3.1	Introduction to hypotheses	121
5.3.2	Participants	123
5.3.3	Results	124
5.3.4	Mental State	124
5.3.5	Topography of Voices	126
5.3.6	Trauma	129
5.3.7	The relationship between trauma, beliefs about voices and distress associated with voices	130
5.3.8	Interim Discussion	132
5.4	Distinguishing harm-self from harm-other	134
5.4.1	Introduction to hypotheses	134
5.4.2	Participants	135
5.4.3	Measures	136
5.4.4	Results	136
5.4.5	Harm-Other Commands	137
5.4.5.1	Suicide Commands	142
5.4.5.2	Self-Harm	146
5.4.6	Comparison based on predominant content	150
5.4.7	Interim discussion	154
5.5	What distinguishes compliers from non-compliers?	157
5.5.1	Introduction to hypotheses	157
5.5.2	Participants	159
5.5.3	Comparing compliers and non-compliers based on lifetime history of command hallucinations	161
5.5.3.1	Harm Other: Approach One (lifetime history of commands)	161
5.5.3.2	Harm Other: Approach Two (current voice-hearing experience)	166
5.5.3.3	Suicide: Approach One (lifetime history of commands)	170
5.5.3.4	Suicide: Approach Two (current command hallucinations)	174
5.5.3.5	Harm-Self: Approach One (lifetime history of commands)	178
5.5.4	Interim Discussion	182
5.5.4.1	Harm-Other	184
5.5.4.2	Suicide	186
5.5.4.3	Self-Harm	187

- Introduction to Auditory Hallucinations

5.6	Question Five: Predicting Future Compliance	190
5.6.1	Introduction	190
5.6.2	Participants	190
5.6.3	Results	191
5.6.4	Regression Analyses	194
5.6.4.1	Predicting Compliance with Harm-Other Commands	194
5.6.4.2	Predicting Compliance with Suicide Commands	194
5.6.4.3	Predicting Compliance with Command Hallucinations to Harm Self	198
5.6.5	Interim Discussion	200
5.7	Summary	201
	Chapter 6 Overview and Discussion	202
6.1	Overview	202
6.2	What distinguishes Compliers from Non-Compliers?	203
6.2.1	Harm-Other	207
6.2.2	Suicide	209
6.2.3	Harm-Self	210
6.2.4	Methodological Issues	212
6.3	What predicts future compliance?	215
6.4	The Development of Command Hallucinations	216
6.5	Clinical Implications	220
6.6	Theoretical Implications	223
6.7	Limitations	225
6.8	Future Research	229
6.9	Conclusion	231

Chapter 1 - INTRODUCTION TO AUDITORY HALLUCINATIONS

1.1 Overview

The purpose of this chapter is to orient the reader to the general experience of auditory hallucinations. The chapter will provide a theoretical, conceptual and empirical framework for the importance of biopsychosocial models of auditory hallucinations.

The chapter examines both historical and contemporary understandings of auditory hallucinations and presents evidence to support the view that 'hearing voices' is not an experience linked intrinsically and exclusively to mental illness, but is an experience also reported by a significant minority of the general population.

The chapter looks at the way in which the experiences of 'non-psychiatric' and 'psychiatric' voice hearers differ and how such differences have informed psychological accounts of hearing voices.

1.2 Definition of Hallucinations

Hallucinations can occur in any of the five senses: sight, smell, taste, touch and hearing. Respectively, these are referred to as visual, olfactory, gustatory, tactile and auditory hallucinations.

- Introduction to Auditory Hallucinations

Whilst, in clinical populations, hallucinations are not specific to the auditory modality, auditory hallucinations are perhaps the most commonly reported (Miller, O'Connor and DiPasquale, 1993). Furthermore, the preponderance of research and subsequent theoretical models (e.g. Chadwick and Birchwood, 1994; Chadwick, Birchwood, and Trower 1996; Garety, Kuipers, Fowler, Freeman and Bebbington, 2001) is conducted with individuals reporting auditory hallucinations. Many of the concepts that are discussed in this chapter may apply to hallucinatory experiences in other modalities, however, the focus of attention for the current study is auditory hallucinations.

1.3 Auditory Hallucinations

The concept and definition of auditory hallucinations has been the subject of debate for many years. In the revised third edition of the Diagnostic and Statistical Manual (DSM-III-R, APA, 1987) hallucinations are defined as a “sensory perception without external stimulation of the relevant sensory organ”. The DSM-IV does not provide a definition of hallucinations.

Clinical and experimental findings fail to support the above definition and have suggested that hallucinations may occur when a stimulus – either internal or external – is present but the stimulus is misattributed (Bentall, 1990; Fowler, Garety and Kuipers, 1995). It has also been argued that the above definition fails to account for the subjective experience of auditory hallucinations.

With this borne in mind, Slade and Bentall (1988) provide a more comprehensive definition of hallucinatory experiences defining hallucinations as “any percept like experience which a. occurs in the absence of an appropriate stimulus, b. has the full force of the corresponding actual (real) perception, and c. is not amenable to direct and voluntary control. Bentall (1990) argues that this definition accounts for some of the psychological factors associated with

- Introduction to Auditory Hallucinations

hallucinations such as the misattribution of stimuli, the impact of this experience on the individual and the subjective perception of control over the experience.

Auditory hallucinations vary in nature and content and can consist of music, and general noise (see Johns, Nazroo, Bebbington and Kuipers, 2002). However, the majority of auditory hallucinations are described as voices. The term 'hearing voices' will be used interchangeably with auditory hallucinations throughout this thesis.

1.4 Why study auditory hallucinations?

Auditory hallucinations are commonly associated with mental ill health, in particular with schizophrenia (see Bentall, 1990). Whilst the validity of this association has been questioned (a point that will be examined in more detail later in this chapter) there is little doubt that for a cohort of individuals in contact with psychiatric services, auditory hallucinations are associated with considerable distress (Garety & Hemsley, 1987). Moreover, almost a third of psychiatric voice hearers experience auditory hallucinations that are resistant to antipsychotic medication (Curson, Patel and Liddle, 1988). Theoretical developments that will be examined in this chapter have facilitated a move away from a unimodal formulation of auditory hallucinations which views the hallucinatory experience as a consequence of an underlying pathology towards a greater biopsychosocial understanding of the experience of hearing voices.

1.5 Accounts of Auditory Hallucinations

1.5.1 Historical accounts of hearing voices

Throughout ancient history there have been reports of individuals 'hearing voices'. The way in which these unusual experiences have been responded to is generally dependent on the culture of the time (Clark, 2001). For instance, Socrates, a great philosopher in ancient

- Introduction to Auditory Hallucinations

Greece, was said to have heard inspiring voices at times (Zilboorg and Henry, 1941). He referred to his voices as 'daemons' (children of the Gods) and did not hesitate to follow their advice. Moreover, his peers would also follow the advice of Socrates' 'daemons'. In the bible, Ezekiel is described as having a sudden experience of a message and visions from God. He was honoured for his experiences and the consequences associated with them. The voices heard by Joan of Arc were considered, at the time, to be the result of a benevolent spiritual experience. She was hailed as a heroine when the 'voices' led the French army to victory only to be condemned as a witch when she was later captured by English victims (see Leudar and Thomas, 2000). These cases exemplify how the individual and societal response to unusual experiences such as hearing voices is often wholly dependent on the frame of reference for such experiences (e.g. religious beliefs) and the consequences associated with the experience (e.g. a 'message' from God leads to the evacuation of a town that is subsequently destroyed by floods).

1.5.2 Hallucinations as a spiritual experience

Currently, in western culture, hearing voices is seen as a symptom of mental illness, often linked intrinsically to 'schizophrenia'. However, there are a number of alternative explanations of 'hearing voices'. A spiritual or mystical explanation posits that all humans have the ability to expand their consciousness by developing spirituality. Hearing voices is viewed as part of such an expansion (Roberts, 1979). Those who work in the realms of parapsychology believe that hearing voices is the result of a special gift or sensitivity that permits communication with the 'spirit world'. Others suggest that the voices belong to individuals who have died and whose 'spirits' continue to wander. Such 'spirits' attach themselves to individuals resulting in an apparent hallucinatory experience (see for example, Sanderson, 1997).

1.5.3 Hallucinations as a sign of mental illness

Even in ancient times, hearing voices was an unusual – albeit more culturally sanctioned - experience. With the demise of the church and religious beliefs in general and the ever-growing influence of science, the renaissance saw the introduction of medicine and the notion of pathology. For hundreds of years, medicine has attempted to explain the occurrence of auditory hallucinations. As early as 1798, the English Physician, Crichton, described hallucinations as ‘diseased perceptions’. However, it was the psychiatrist Henry Maudsley who was most influential in forming medicine’s view of auditory hallucinations (see Leudar and Thomas, 2000). A staunch agnostic and a “devout materialist”, Maudsley developed rational and materialist explanations for a range of supernatural or spiritual phenomena, including hearing voices. He posited that the religious experiences of individuals such as Mohammed and St. Paul were better explained in terms of epilepsy, and that hallucinations could also be explained in this way. Maudsley wrote fluently and profusely on such topics. His work placed the experience of hearing voices firmly within the realm of psychiatry and mental illness.

1.5.4 Hallucinations as a first rank symptom of schizophrenia

In the mid 1950’s, the notion that auditory hallucinations were pathognomonic to schizophrenia was introduced. According to Schneider (1957), there were three types of auditory hallucinations: hearing voices speaking your own thoughts out loud, hearing two or more voices talking about you, and voices providing a running commentary on your actions. Schneider termed these experiences (and others) first rank symptoms and stated that the presence of one or more such symptom in the absence of any evidence to suggest organic brain disease, indicated a diagnosis of schizophrenia. First rank symptoms formed the basis of the diagnostic systems that continue to be employed by psychiatrists today.

1.6 What is schizophrenia?

As auditory hallucinations are intrinsically linked by the medical model, to schizophrenia it may be important to consider the notion and validity of the concept of schizophrenia.

Schizophrenia is one of the psychotic disorders characterised by major disturbances in thought, emotion and behaviour (Davison and Neale, 1998). The range of symptoms associated with schizophrenia is extensive and can include: delusions, disordered thought processes and speech, hallucinations, altered affect, motor abnormalities, and cognitive deficits (DSM-IV, APA, 1994).

However, the way in which schizophrenia is viewed has changed dramatically in the last two decades.

Once viewed as a progressively deteriorating condition (Kraepelin 1898), schizophrenia has long been conceptualised by many as a single disease entity that can be diagnosed and defined by its symptomatology. Indeed, the presence of just one first rank syndrome (e.g. auditory hallucinations) is sufficient for a diagnosis of schizophrenia, although current diagnostic criteria (DSM-IV) require that the individual has also experienced deterioration in functioning. There are a number of difficulties with such a view. These will be addressed below.

1.6.1 Validity of schizophrenia as a single disease

The phenomenological approach forms the basis of many psychiatric diagnostic tools (e.g. DSM-IV, APA, 1994; ICD-10, WHO, 1992). Schizophrenia is diagnosed primarily by the presence of first rank symptoms and a deterioration of function. Whilst the reliability of diagnosis has been supported by large-scale research studies (Farmer and McGuffin, 1988), it is the validity of the diagnosis that causes concern.

- Introduction to Auditory Hallucinations

The first consternations regarding the validity of schizophrenia began in the 1960's with the advent of the anti-psychiatry movement (e.g. Laing, 1965). It was noted that 'schizophrenia' was a heterogeneous disorder and it was often the differences between individuals that explained their presentation. It was suggested that to group these people together in one diagnostic category was counterproductive.

Bentall (2003) presents an exceptionally comprehensive deconstruction of the concept of schizophrenia and other forms of psychosis but, in brief, he suggests that there are three ways of assessing the validity of schizophrenia. He argues firstly that the symptoms of the syndrome should go together, that is if an individual has one symptom there should be a high likelihood that they have another symptom; secondly that the diagnosis should predict onset, outcome and response to treatment; and thirdly, that diagnosis should be related to aetiology.

Regarding the first point, the symptoms associated with schizophrenia are not exclusive to that diagnosis. For example, auditory hallucinations are found in a number of organic and functional disorders such as depression and grief reactions (Kindon and Turkington, 1994).

Secondly, the diagnosis of schizophrenia appears to have little predictive validity. The course and outcome of schizophrenia is particularly heterogeneous. A large-scale study (n = 280) performed by Ciompi (1980) demonstrated this variability. The author examined the medical notes of almost three hundred individuals whose histories were documented until the age of 65. The average follow-up period was 37 years. Ciompi detected significant variability in outcome with almost half of the sample presenting with acute onset and the other half with insidious onset. Furthermore, equal numbers had an episodic and continuous course. Half were left with a moderate or severe disability but a quarter showed a full recovery. Ciompi's use of Bleuler's diagnostic criteria (which are very broad) attracted a good deal of criticism. Psychiatrists argued that individuals that would not have met stricter diagnostic criteria for

- Introduction to Auditory Hallucinations

schizophrenia (e.g. DSM or ICD criteria) would have been included in the study thereby increasing the probability of a more favourable outcome.

Nevertheless, later studies employing stricter criteria (Present State Examination) also found that the diagnostic label of 'schizophrenia' was of little use in determining an individual's prognosis. A group of researchers involved in the International Pilot Study of Schizophrenia examined the extent to which individual symptoms, regardless of their role in diagnosis, predicted outcome. Carpenter, Bartko and Strauss (1979) followed up 130 individuals over a five-year period examining symptomatology, details of social functioning and duration of hospitalisation. Participants were split into two groups according to their outcome (best and worst outcome). Only one symptom (restricted or blunted affect) discriminated between the groups. Individual symptoms have also been shown to be better predictors of the response to medication than syndromes (Johnstone, Crow, Johnson and Macmillan, 1986). The authors concluded that diagnosis was of little assistance in predicting outcome.

Finally, scientists have been in pursuit of the mechanisms governing the manifestation of psychosis since Kraepelin first classified it a century ago. However, an unequivocal aetiological account has remained elusive. Although significant developments have been made in various areas of psychological research from biological to social no clear 'cause' either psychological or physical has been discovered. Furthermore, there is a good deal of inconsistency within the existing research. Given the heterogeneous nature of 'schizophrenia' (see points above) this is of little surprise.

Given the points discussed above, it is difficult to accept that schizophrenia, as a single entity, is a valid concept. Bentall and others (e.g. Bannister, 1968; Slade and Cooper, 1979) suggest that what is called "schizophrenia" could be a range of different disorders grouped together under an umbrella term. They have recommended abandoning investigations into the

- Introduction to Auditory Hallucinations

syndrome of schizophrenia and adopting a symptom approach. The current study will adopt this approach and will therefore avoid, where possible, using the term schizophrenia. The term 'psychosis' will be used throughout this work (where appropriate) to indicate any psychotic disorder of which hearing voices is a symptom. However, it should also be noted that the experience of hearing voices is not exclusively related to the diagnostic category of schizophrenia and has also been associated with severe depression, personality disorder, and post-traumatic stress disorder.

The licence to examine and intervene with individual symptoms has opened many doors for psychological approaches to psychotic symptoms such as auditory hallucinations. This was further inspired by the 'discovery' and exploration of voice hearers in the general population.

1.7 Auditory hallucinations in the general population

A number of researchers have reported that a significant minority of the general population experience 'auditory hallucinations'. These studies fall into two categories: epidemiological studies and studies on specific populations such as students. A brief selection of these studies will be presented below.

1.7.1 Epidemiological Studies

Several large-scale epidemiological studies have been conducted in various countries. For example, in the Netherlands, Tien (1991) drew upon a vast epidemiological database ($n > 18,500$) and noted that the lifetime prevalence of hallucinations not related to organic causes was 10% for men and 15% for women. Two per cent of these cases reported hearing voices. Data from an American study, the Eastern Baltimore Mental Health Survey, suggested that 5% of the general population reported hallucinations (Eaton, Romananoski, Anthony, and Nestadt 1991). Whilst, Sidgwick (1984) collected data from over 17, 000 individuals in 10

- Introduction to Auditory Hallucinations

countries and found that 9.9% experienced a hallucination as part of normal consciousness (that is not related to physical or mental illness, drug use or sleep deprivation). Others have detected similar prevalence rates (e.g. Van Os, Hanssen, Bijl, & Ravelli, 2000). It has been reported that these experiences are close to or identical to those that would attract a psychiatric diagnosis.

It would appear, however, that there is a degree of cross-cultural variation in the experience of auditory hallucinations. In the UK, 9.8 % of individuals from a Caribbean origin reported an auditory hallucinatory experience in the previous year compared to just 4% of a white population (Johns *et al*, 2002). The authors did not hypothesise as to the reason for this finding, however, it is conceivable that a white population were wary of reporting such unusual experiences. Johns *et al* noted that there was a greater religious affiliation within the Caribbean population. Among religious populations, hearing voices can be a culturally sanctioned experience and individuals may therefore have fewer worries about reporting such experiences.

1.7.2 Selective populations - college students

Posey & Losch, (1983) administered a questionnaire containing 14 examples of hallucinatory experiences (example of experiences) to 375 students. Seventy one per cent reported lifetime prevalence of at least one experience, 39% said they heard their own voice speaking their thoughts out loud, and 5% reported having a conversation with a hallucinated voice. In an extension of this study, Barrett and Etheridge (1992) found that a significant minority of students reported having hallucinatory experiences at least once a month (the figures for each of the 14 experiences ranged from 2.3% - 26.6% reporting the experience at least once a month). Whilst neither set of researchers appear to have measured how many of these individuals had sought psychiatric help, Posey and Losch (1983) did interview a small sample

- Introduction to Auditory Hallucinations

of voice hearers and, according to the Minnesota Multiphasic Personality Inventory, these individuals did not meet the criteria for a psychiatric diagnosis.

1.7.3 Coping with hearing voices

It is clear then, that there may be individuals in the general population who hear voices but do not experience significant distress associated with their experiences and do not have contact with psychiatric services (e.g. Romme, Honig, Noorthoorn, and Escher 1992).

Distinguishing those that cope with the unusual experience of hearing voices from those that do not cope is not a new concept. Leudar and Thomas (2000) provide a comprehensive account of some of the earliest attempts to search for the factors that distinguish these two groups. They describe how, in the nineteenth century, the French Societe Medico-Psychologique met to discuss hallucinations. Whilst some members claimed that the hallucinations of 'visionaries' such as Socrates could not be distinguished from those of the 'inmates' in French asylums (Maury, 1855) others argued that there were a number of features that distinguished 'pathological' from 'non-pathological' or 'physiological' experiences. For example, Buchez – a French Psychiatrist – suggested that all humans are endowed with physiological functions of internal vision and internal audition. He believed that these functions were more developed in artists (musicians, painters etc.) and that in such individuals, visions and auditory images are prepared and voluntary. In pathological conditions, on the other hand, internal images are spontaneous and involuntary; that is the individual does not feel they have control over the experience. A similar view is said to have been held by Peisse (see Leudar and Thomas, 2000) but he added that 'insane hallucinators' did not distinguish their spontaneous and involuntary perceptions from normal perceptions, that is the hallucination was perceived as being real. Brierre de Boismont also resisted the notion that hallucinations were inextricably linked to 'madness' and suggested that it was not

- Introduction to Auditory Hallucinations

hallucinating *per se* that was pathological but it was the involuntariness, delirious content and “childish terrors” of the hallucinator that was associated with insanity. It would appear that early attempts at distinguishing voice hearing experiences focussed on a number of factors: the degree of control over the experience, the sense of the hallucination being real, and the distress associated with the experience. These factors can be recognised in current definitions and psychological understandings of auditory hallucinations. Furthermore, modern day research into the relationship between the voice hearer and the voices, has supported the role that these factors play in the development and maintenance of auditory hallucinations and associated distress. This is discussed in greater detail later in the chapter.

In recent years, a number of researchers have begun to specifically seek out voice hearers in the general population in order to investigate the differences between the experiences of the two groups.

Romme and Escher’s (1989) seminal study examined a group of individuals from the general population who reported hearing and coping with voices. Four hundred and fifty people responded to a television appeal for ‘voice hearers’. All of these individuals were sent a questionnaire consisting of thirty open-ended questions about the experience of hearing voices. Of the final number available for analysis ($n = 186$), 66% reported an inability to cope with the experience. Clearly then, there was a significant proportion of people in the general population who heard voices and were coping with the experience.

In the second phase of the study, twenty individuals who had said that they were able to cope with the experience of hearing voices were interviewed in more detail. Ten of these had never had any contact with psychiatric services and did not meet criteria for a psychiatric diagnosis. The remaining ten were known to have a psychiatric history including four with a diagnosis

- Introduction to Auditory Hallucinations

of schizophrenia. However, these individuals still reported being able to cope with their voices.

In their interviews with this group of individuals, the authors noted a number of themes that helped to differentiate those that coped with hearing voices and those that could not manage the experience. 'Copers' appeared to progress through a number of phases before reaching a state of acceptance of the voices. Following a period of panic, anger and helplessness regarding the experience of hearing voices, 'copers' reported structuring their experiences in what Romme and Escher refer to as the 'organisation phase'. Individuals described accepting that they were hearing voices but choosing to only listen to the positive voices, or setting limits for the length of time they would listen to the voices. Furthermore, individuals that learned to cope with the voices appeared to reach a stage of stabilisation where the voices became an integrated part of the self.

There appeared to be a difference in the content of the voices with 'copers' reporting positive, friendly voices, and 'non-copers' reporting hostile and aggressive voices. This finding is somewhat intuitive, however, the direction of causality for this factor is not clear. It could be that a positive attribution (e.g. "this is a positive spiritual experience") influences the interpretation of the content.

'Copers' also described having a frame of reference in which to understand their experiences. These ranged from psychological understandings to spiritual and mystical explanations (mediumistic tendencies, voices as a result of transcendental meditation).

Similar findings were reported from a qualitative study conducted by Jackson and Fulford (1997). Again, the authors noted strong phenomenological parallels between the experiences described by two groups: a non-psychiatric group reporting spiritual experiences and a group of individuals with a diagnosed psychiatric condition reporting spiritual experiences. These

- Introduction to Auditory Hallucinations

experiences included hearing voices. Spiritual experiences were defined as “special for the individual in their degree of subjective profundity and meaning and which seem in some way to go beyond ‘mundane’ consensual reality”. Individuals assigned to the spiritual group had to have reported a significant period of anomalous experience explained in spiritual terms, apparently involving psychotic-like phenomenology. They had no psychiatric history and had indications of a positive adjustment. The ‘diagnosed group’ had to have a diagnosed and treated psychotic disorder. All had experienced significant recovery at the time of the interview.

Whilst there were phenomenological similarities, a number of differences between psychiatric and spiritual experiences were also noted, including the emotional tone and reaction to the experiences. The difference between the groups was most apparent on the effect the experiences had on the individuals’ life. The non-psychiatric group reported feeling empowered and helped by their experiences whereas a diagnosed group reported feeling overwhelmed and isolated.

Jackson (1997) was particularly interested in how the different outcomes occurred; why one group perceives their experiences as spiritual and the other as psychotic. He suggests that there may be a number of psychological factors that determine the path of these experiences: Preparation (the spiritual participants had a background in which the experiences made some sense such as strong religious/spiritual beliefs); guidance (the individuals had consulted ‘professionals’ such as priest or a seer that had helped them to understand their experiences); and “giftedness” or the sufficient ego strength to succeed.

1.8 Psychological understandings of auditory hallucinations

The notion that auditory hallucinations are not necessarily pathological and may be based on a continuum facilitated the development of psychological models of auditory hallucinations.

- Introduction to Auditory Hallucinations

Such models are able to account for the occurrence of 'psychotic phenomena' in the general population and the way in which these apparently benevolent experiences differ from the distressing and persistent hallucinations experienced by a psychiatric population. There are a number of models of auditory hallucinations, a brief selection will be presented below.

1.8.1 The occurrence of auditory hallucinations – neurocognitive models

Frith (1979) proposes that a deficit in the mechanism that controls the contents of consciousness may underpin auditory hallucinations. Frith distinguishes between conscious and preconscious processes. He explains that there are two levels of consciousness: the preconscious and consciousness. Preconscious processes occur below the levels of consciousness and are concerned with the selection of appropriate interpretation of and response to stimuli. Auditory hallucinations are said to occur when these preconscious processes are actually conscious resulting in the misinterpretation of auditory stimuli, for example, noises outside of the door may be interpreted as people talking about you outside the door. Frith's model received a good deal of empirical support. However, it has been criticised for being reductionist and also for failing to account for a number of clinical phenomenon such as the observation that hallucinations decrease when the individual attends to what others say (Slade, 1974). Frith later produced another model of the positive symptoms of psychosis. In this model it is suggested that difficulties with the self-monitoring of actions and intentions leads to the individuals own intentions to act not being recognised and being experienced as alien (Frith, 1992). Hemsley (1993) has developed a similar neurocognitive model that focuses on the breakdown of 'willed intention activity'. His model suggests that a cognitive deficit leads to a 'weakening of the influence of stored memories of regularities of previous input on current perception', which leads to ambiguous, unstructured sensory input and the subsequent intrusion into consciousness of unintended material from

- Introduction to Auditory Hallucinations

memory. The 'unintendedness' of this action leads to material being interpreted as alien; as voices.

Slade and Bentall (1985) and Bentall (1990b) have suggested that auditory hallucinations may result from a deficit in reality testing that leads to the misattribution of internal cognitive events (i.e. thoughts) as external real stimuli (i.e. voices), and the misinterpretation of external stimuli (for example, ambiguous noise interpreted as voices) (Bentall and Slade, 1985). There is a host of experimental data supporting the notion of misattribution of stimuli. For example, in order to investigate the ability to discriminate internally and externally generated stimuli, Morrison and Haddock (1997) asked three groups of individuals to participate in a word association task: a group that experienced auditory hallucinations, a group that experienced delusions but not hallucinations, and a control group. They found that the first group were significantly more likely to attribute their own thoughts in a word association task to the investigator.

Neurocognitive models are useful in considering the processes underlying the occurrence of anomalous experiences such as auditory hallucinations. However, they do not provide an aetiological account of voices, that is they do not explain why certain individuals develop these difficulties. They also fail to explain why some individuals are able to cope with the resulting experience (hearing voices) and others are not. Finally, they do not explain how voice activity is maintained over time.

1.8.2 The personal meaning of voices

It has been argued that, similarly to the medical understanding of hearing voices, neurocognitive accounts of auditory hallucinations fail to capture the subjective experience of hearing voices and the personal significance of voice content.

- Introduction to Auditory Hallucinations

Whilst most people who hear voices report hearing both positive and negative voices (e.g. Close and Garety, 1998), psychiatric voice hearers consistently rate the negative voices as predominant (e.g. Jackson and Fulford, 1997; Falloon and Talbot, 1981; Romme and Escher, 1989). They also report feeling afraid of their voices (Romme and Escher, 1989). This is a direct contrast to non-psychiatric voice hearers who report predominantly positive voices that they believe enrich their lives.

It has been shown on numerous occasions that the content of and beliefs about voices can be associated with an individual's life history (Romme and Escher, 1989, 1993; Bentall, 1990; Chadwick *et al*, 1994), and the way that they feel about themselves (Close and Garety, 1998). It has even been demonstrated that individuals can rate their relationship with the voice as though it were a real person and that this relationship often mirrors relationships in the individual's childhood (Benjamin, 1989).

1.8.3 Cognitive-behavioural accounts of voices

In response to findings such as those described above (e.g. Romme and Escher, 1989), which describe individuals who hear voices but do not experience any significant distress, a group of researchers (Chadwick and Birchwood, 1994) developed a model which attempts to incorporate the subjective experience of the individual voice hearer, their relationship with the voice/voices that they hear, and any associated coping strategies.

The model is based upon existing cognitive behavioural accounts of psychological disturbance (e.g. depression, anxiety etc.). It draws heavily upon both Beck's model of cognitive therapy (Beck, Rush, Shaw and Emery, 1979) and Ellis' Rational Emotive Therapy (Ellis, 1962, 1994). Central to both of these models is the notion that the response to any given event is mediated by thoughts, images and beliefs. This is often described as the ABC model where **A** is the activating event (a noise), **B** is the belief ("that's a burglar") and **C** is

- Introduction to Auditory Hallucinations

the emotional, physiological and behavioural consequence (feel frightened, experience a quickened pulse rate, ring police or hide under duvet). This is often misrepresented as a linear model. However, it is not suggested that thoughts cause behaviours rather that both responses occur as one unified process, that is that 'anxiety' is an emotional, cognitive and behavioural experience. The model proposes that proximal beliefs such as those exemplified above are related to core beliefs about the self, others and the world. It is thought that these core beliefs may have their origin in childhood. Early relationships and life events are thought to have a profound impact on an individual's propensity towards negative self-evaluation and low self-esteem.

The cognitive model of voices (Chadwick and Birchwood, 1994) views the occurrence of the voice as the triggering event (A) to which the individual gives a meaning (B) and experiences associated emotional, behavioural and physiological consequences (C). The model therefore suggests it is not the occurrence of voices *per se* that causes distress rather that it is the beliefs about the voice that elicit the emotional and behavioural consequences.

Birchwood and Chadwick found that they were able to classify certain beliefs that were felt to be central to the experience of the voice hearer. These include beliefs regarding the identity of the voice (e.g. the devil), beliefs about the purpose of the voice (malevolent or benevolent), the power of the voice (omnipotence) and beliefs about the effect of compliance or resistance (engagement and resistance). They were also able to classify coping behaviours as either resistance (resistant and combative behaviour, arguing and negative affect) or engagement (co-operative behaviour and positive affect).

The authors have argued that whether a voice is construed as malevolent or benevolent, powerful or benign is influenced by core cognitive schemata which are likely to be autobiographical in nature in that they are believed to be related to the individual's past and

- Introduction to Auditory Hallucinations

current life experiences and interpersonal relationships. Since the original development of a cognitive behavioural model of voices, Birchwood and others have found empirical support for this hypothesis. Specifically, that those who report a lower degree of social rank (that is how they view themselves in relation to others) are more likely to feel entrapped by the voices that they hear and are more likely to experience significant levels of distress in relation to the voices that they hear (Birchwood and Gilbert, 2004). Birchwood, Meaden, Trower, Gilbert, and Plaistow (2000) describe how early life events and relationships may lead to a sense of subordination and that those who experience such events are more likely to perceive themselves as being unable to control the voices and therefore perceive their voices as being more omnipotent (powerful). Such early life events are likely to influence the development of core beliefs about self as subordinate to others, and therefore of lower social rank. Chapter two will present the way in which the role of social rank has been specifically applied to command hallucinations.

The two main hypotheses generated by the cognitive behavioural model have received a good deal of empirical support. The first of these hypotheses is that coping (emotional, behavioural and cognitive responses) is sometimes better understood in relation to beliefs about the voices than in relation to the content of the voices and that beliefs are not a direct interpretation of voice content (otherwise coping could be predicted from content analysis alone). The second hypothesis posits that by modifying the individual's beliefs about the voices it would be possible to reduce the associated distress.

The content of voices differs from one individual to another (see Chadwick, Birchwood and Trower, 1996). A voice may occur in the first, second or third person. It may provide a running commentary of the person's actions, and can also include comments ("well done"), suggestions ("watch the curb"), insults ("you are a slut"), criticisms ("you did that wrong

- Introduction to Auditory Hallucinations

again”), and commands (“cut yourself”). The interpretation of the content is a very subjective experience and may depend on qualitative differences in the pitch, intonation, context and beliefs about the voice.

Whilst there is a link between voice content and the individual’s associated feelings and behaviours, sometimes the class of belief is not understandable in light of content alone. Chadwick *et al* (1996) give an example of an apparently innocuous voice (the voice made comments such as “take care”, “mind your step”) that is interpreted as malevolent by the voice hearer who believed the voice to be that of evil witches intent on driving them mad. The voices elicited a good deal of distress and an avoidant coping response. Whilst this individual’s coping responses were not understandable in relation to the content of the voices, they were understandable in the context of the individual’s belief about the voices.

Chadwick *et al* (1996) found that for a third of their sample ($n = 26$) there appeared to be little congruence between voice content and beliefs about the voices. It would appear that individuals often formed beliefs by collating other pieces of ‘evidence’. For example, all participants believed their voices to be omnipotent. Seventy per cent of the sample cited concurrent symptoms such as visual hallucinations as evidence for their belief. It should be noted, however, that this degree of incongruence between content and belief has not been detected in other studies. For example, Close and Garety (1998), in their attempt to replicate Chadwick and Birchwood’s study, found that all those that reported negative content believed their voices to be malevolent, and those with positive content believed their voices to be benevolent.

Using a semi-structured questionnaire with a small sample of voice hearers ($n = 26$), Chadwick and Birchwood (1994) examined the relationship between beliefs about voices, coping behaviours and affect. They consistently found that malevolent voices were resisted

- Introduction to Auditory Hallucinations

whilst voices believed to be of a benevolent nature were engaged with. Almost fifty per cent of a psychiatric sample believed their voices to be malevolent. These individuals were found to be significantly more likely to be depressed than those reporting benevolent voices and significantly more likely to report severe depression. Believing the voice to be more omnipotent (powerful) was also found to be associated with more severe depressive symptomatology. Although Chadwick and Birchwood's original findings were based on a relatively small sample of psychiatric voice hearers, their results have now been replicated several times (Chadwick and Birchwood, 1995; Beck-Sander, Birchwood and Chadwick, 1997; Close and Garety, 1998; Chadwick, Birchwood and Lees, 2000; Vidgen, 2001; Andrew, Gray and Snowden, 2008).

There are other important findings implicit in Chadwick *et al's* model. Most importantly, their findings may explain why some individuals experience persistent voices. The findings suggest that if a voice is believed to be malevolent and omnipotent it is resisted. Findings from other research involving voice hearers suggests that this may result in a paradoxical increase in voice activity and is therefore a counterproductive strategy which is likely to lead to the individual feeling more out of control of the experience and further increasing the voices 'power' (Falloon and Talbot, 1981; Romme *et al*, 1992).

The cognitive-behavioural model of voices provides a conceptual and empirical paradigm for the relationship between voice content, beliefs and emotional and behavioural consequences. The model has provided a much-needed impetus for therapeutic interventions for voice hearers. Indeed, interventions based on the cognitive behavioural model that attempt to modify beliefs about voices have enjoyed some success (Chadwick and Birchwood, 1994, 1996). However, it should be borne in mind that such approaches are rarely used in isolation and are often administered in a group context - an intervention in itself.

Vulnerability-Stress Models

The vulnerability-stress model (Zubin and Spring, 1977; Nuechterlein and Dawson, 1984a) represents a biopsychosocial approach to understanding the development of auditory hallucinations and other psychotic phenomena. It suggests that an individual may have a longstanding liability to developing auditory hallucinations (schizotypy). The vulnerability is likely to be biological in nature (either genetic, biochemical, or structural), although it has also been argued that the vulnerability may equally be psychological (Andrew *et al*, 2008) and may lead to a disorder in automatic cognitive processes. Susceptibility may be further increased by psychosocial factors such as family conflict, adverse environments or traumatic life experiences (see Garety *et al*, 2001). The symptoms of psychosis are then likely to be precipitated by stressful or traumatic life events.

Garety *et al* (2001) have developed a model that is based on the principle of the vulnerability-stress hypothesis but that also incorporates the cognitive and psychological factors discussed in the previous two sections. The model suggests that there are two proximal routes to the development of the positive symptoms of psychosis (including hearing voices). It is argued that, in a predisposed individual, a triggering event elicits a disruption in cognitive processes (Garety and Hemsley, 1994). The resulting cognitive disturbance can be conceptualised in two ways. First, that a cognitive deficit results in the unintended emergence in consciousness of material from memory (Hemsley, 1993) or secondly, a difficulty with the self monitoring of intentions that leads to the individuals intentions and willed action being experienced as involuntary and alien (Frith, 1992). Either of these cognitive disturbances is said to lead to anomalous conscious experiences (e.g thoughts experienced as voices). The emotional changes that occur as a direct and indirect result of the triggering event are said to feed into the anomalous experiences, for example an event can lead to anxiety and depression, further

- Introduction to Auditory Hallucinations

anxiety may be elicited by the anomalous experiences all of which may influence the content and personal meaning of the voices (beliefs about voices). It is also suggested that in the context of all of these experiences, the individual searches for an explanation, and that biased conscious appraisal processes (e.g. Garety and Freeman, 1999) result in the individual making external attributions for their experiences. Pre-existing negative schema developed perhaps as a result of childhood adversity or trauma that facilitate negative emotions, low self-esteem and a tendency to make external attributions not only contribute to the transformation of an anomalous experience to a 'psychotic' experience but they may also serve as a maintaining factor in voice activity, (Birchwood *et al*, 2000) voice content and the associated distress (Garety *et al*, 2001).

The second route is a direct affective route where triggering events lead to a disturbance in affect without cognitive disruptions which leads directly to the type of attributional biases outlined above.

The model assumes that all voice hearing experiences – psychiatric or non-psychiatric- have the same aetiology but that there are a number of points at which it is hypothesised that an anomalous experience (hearing voices) can be transformed into a distressing and disrupting experience. Garety *et al* (2001) suggest that the externalising attributional style is at the core of the 'psychotic' experience and it is the tendency to externalise that distinguishes psychiatric from non-psychiatric voice hearers. However, there are a number of other observations within the model where there could be hypothesised differences. For example, it may be that non-psychiatric voice hearers do not experience the social adversity (Bhugra, Leff, Mallett, Der, Corridan, and Rudge 1997), social marginalisation, childhood loss (Agid, Shapira, Zislin, Ritsner, Hamin, Murad, Troudart, Bloch, Heresco-Levy, and Lerer, 1999) and

- Introduction to Auditory Hallucinations

trauma (Romme and Escher, 1992) that has been noted in psychiatric voice hearers, and thus the content and personal meaning of the voices do not result in any associated distress.

Garety's model helps to understand the development of auditory hallucinations and other positive symptoms (delusions). However, whilst it describes factors that may contribute to the maintenance of auditory hallucinations, it does not specify the mechanisms by which such factors operate. The model is, however, entirely consistent with cognitive behavioural accounts of auditory hallucinations (Chadwick, Birchwood and Trower, 1996).

The previous section provided an account of the concept of auditory hallucinations and how the concept has changed over time from being an unusual but culturally sanctioned experience, to being an indication, in modern day Western Society, of severe mental illness. Importantly, the section reviewed the evidence for the continuum hypothesis which posits that the tendency towards anomalous experiences, such as hearing voices, is distributed on a continuum and that a significant proportion of the general population report such experiences. The continuum hypothesis facilitated the development of psychological models of auditory hallucinations, some of which were reviewed in this chapter. Perhaps the most influential model in terms of the development of psychological interventions is the cognitive behavioural model. This model has also been applied specifically to the distressing experience of command hallucinations and will be outlined further in the next chapter.

Chapter 2 - COMMAND HALLUCINATIONS

2.1 Risk Assessment

The assessment of risk (e.g. violence, self-harm, suicide and re-offending) forms a central part of the task of multidisciplinary teams working within services for mentally disordered offenders and for those working within the community. The outcomes of such risk assessments have considerable implications for both the future placement of the individual and for the safety of society. To date, the best measures of clinical and criminal risk have been actuarial measures (e.g. age, gender, age at first conviction, see Gray, Snowden, MacCulloch, Phillips, Taylor, and MacCulloch, 2004) and classifications of illness (e.g. Psychopathy; Schizophrenia – see Gray, McGleish, MacCulloch, Hill, Timmons and Snowden, 2003). Unfortunately, most of these measures of risk are static and unchangeable rather than dynamic. Consequently, once an individual is categorised as high risk it is difficult to alter that categorisation. The implications are that those categorised as high risk may be detained in secure conditions far longer than is necessary at both a high human and financial cost.

Buchanan (1997) suggests that many studies of risk have limited designs: *'coding for diagnosis is not sufficient. We should be examining individual elements of phenomenology which we have reason to think may be related to violence. Such elements include persecutory beliefs, passivity phenomena and command hallucinations.'* This phenomenological position was supported by Junginger (1996) who suggested that: *'Unlike studies of associations between violence and broad categories of subject*

- Command Hallucinations

characteristics (e.g. mental illness), an analysis of the association between violence and the content and themes of psychotic symptoms could be much more informative’.

Until recently analysis of risk has been confined to the above two forms of analysis (actuarial and phenomenological classification). However, it may be that both actuarial and phenomenological levels of classification cannot provide comprehensive and reliable assays of risk because they will ultimately fail to describe the contribution of more fine-grained controlling factors in determining risk. Furthermore, they provide limited information as to how to tailor clinical interventions and improve prognosis. Therefore, a more detailed analysis through the identification and appraisal of extra-phenomenological (e. g. characteristics of the phenomena and other variables e.g. cognitive factors, interpersonal dynamics) is necessary.

This chapter will provide an overview of the current literature pertaining to risk associated with command hallucinations. The nature and prevalence of command hallucinations will be presented before providing an overview of the literature relating to the association between command hallucinations and risk. A discussion of the current psychological models for understanding the relationship between command hallucinations and compliance behaviour will set the context for an introduction to the current study.

2.2 Definitions - What are Command Hallucinations?

Command hallucinations are not specifically mentioned or defined in the current diagnostic and statistical manual for mental illness (DSM-IV, APA, 1994). However, the symptom has been acknowledged at a phenomenological level since Bleuler’s original

- Command Hallucinations

writings where he referred to command hallucinations as having a compulsive power making them difficult to ignore (Bleuler, 1924: p62). Many have since attempted to provide a definition of what constitutes a command hallucination.

Hellerstein, Frosch, and Koenigsberg (1987) suggest that command hallucinations "*Order particular acts, often violent or destructive ones and instruct a patient to act in a certain manner - ranging from making a gesture or grimace to committing suicidal or homicidal acts*" (pg 219). Thompson, Stuart and Holden (1992) have also acknowledge the range of commands and the presence of innocuous commands explaining that "*hallucinated instructions can include self-injurious or suicidal acts, other-directed violence, common day-to-day behaviours and nonsensical activity*". More recently, Byrne, Birchwood, Trower and Meaden (2006) have emphasised the voice hearer's perception of the content in stating that what distinguishes commands from ordinary hallucinations is that "phenomenologically the voice is experienced or interpreted as commanding rather than commenting". In their research sample, they included individuals who interpreted that a command was implied even if the voice was not explicitly commanding.

What is clear is that the experience of hearing commands is associated with considerable distress for the voice hearer. Previous research has found that command hallucinations are associated with a sense of hopelessness, helplessness (Rogers, Gillis, Turner, and Frise-Smith, 1990) and depression (Soppitt and Birchwood, 1997) perhaps beyond that experienced by individuals with general auditory hallucinations (Mackinnon, Copolov, and Trauer, 2004).

- Command Hallucinations

As Hersh and Borum (1998, p353) state “Clinical lore suggests that people are prone to obey their commands and that ‘dangerous’ commands increase the likelihood that a person will engage in violent behaviour”. There is little doubt that command hallucinations are perceived by many to be a ‘high risk’ symptom. This perception, coupled with the observation that command hallucinations have been found to be one of the more difficult to treat symptoms of mental illness, often results in individuals that report hearing commands receiving more aggressive pharmacological treatment (Mackinnon *et al*, 2004). Data from randomised controlled trials suggest that individuals who report command hallucinations are treated with significantly higher doses of antipsychotic medication with a propensity to increase the dose over time despite the absence of a link between drug dose and compliance behaviour (Shawyer, 2003; Trower *et al*, 2004).

2.3 What distinguishes those that hear commands from those that don’t?

Few studies have explicitly compared those that hear commands with those that hear voices that are more generic in content (that is, that do not issue commands).

Mackinnon *et al* (2004) screened all voice hearers for commands and were therefore able to obtain a comparison group of individuals that reported hearing voices without commands. Using the Mental Health Research Institute Unusual Perceptions Scale (MUPS), they found that a greater proportion of those who reported commands heard the voices more frequently, interpreted them more negatively and felt more controlled by the voices. Command hallucinators also reported that their voices were significantly more

- Command Hallucinations

intrusive than those described by the general auditory hallucinations group, and that the voice was more likely to repeat the same phrase over and over again “as if stuck”.

In terms of general psychopathology, command hallucinators have not been found to be necessarily more unwell (although they were on significantly higher doses of medication and this does not appear to have been controlled for), although have been shown to have significantly more negative symptoms (Mackinnon *et al*, 2004). This latter finding is in contrast to Erkwow, Willmes, Erming-Erdmann and Kunert (2002) who found no significant differences in negative symptomatology.

Although not specifically designed to examine differences between the two groups (auditory versus command hallucinations), previous research has noted that individuals with trauma histories, in particular those with a history of childhood sexual abuse and childhood physical abuse are significantly more likely to experience command hallucinations to harm or kill themselves than a group of individuals that do not report such abuse (Read, Agar, Argyle and Volkmar, 2003). Although this finding was detected amongst a large sample ($n = 200$), the data was obtained from case notes, thus the extent to which it can be generalised is limited. It is likely that the design may have resulted in an underestimate of the presence of commands and the occurrence of trauma as clinicians have been shown to be limited in their enquiry into the two subjects (Rogers *et al*, 1990; Read and Fraser, 1998a).

It is difficult to determine the way in which traumatic life events might be linked with command hallucinations. There is now a growing body of evidence to link lifetime experience of trauma, and childhood trauma in particular, with auditory hallucinations in

- Command Hallucinations

both clinical and non clinical populations (Honig, Romme, Ensink, Escher, Pennings, and Devries, 1998; Andrew, Gray and Snowden, 2008). It has also been demonstrated that there is a degree of congruence between the nature of the trauma and the content of the voice (Close and Garety, 1998), and the way that the voice is interpreted by the voice hearer (Andrew *et al*, 2008). Furthermore, Andrew *et al* found that there appears to be a relationship between the persistent psychological effects of trauma and beliefs about voices. It may be then that trauma increases the individual's propensity for experiencing auditory hallucinations, and the nature of the trauma and the degree to which it continues to intrude upon the individual's life may influence the content of the voice (that is commanding or not commanding) and the way in which it is perceived.

There are a number of difficulties that confound an analysis of the differences between those with auditory hallucinations and those with command auditory hallucinations. A simple cross-sectional study comparing the two groups may miss a history of hearing commands. It would seem that the majority of voice hearers have heard a voice telling them what to do on at least one occasion, even if this voice did not persist. Research that simply categorises individuals based on what they report at the time of interview or enquiry is likely to minimise the historical presence of commands and thus confounds any differences that are detected between the groups. All of the studies to date have used different methodologies in terms of defining when the command was heard. Some have asked about the worst or most dangerous command ever heard even if it was some time in the past (Rogers, Watt, Gray, MacCulloch and Gournay, 2002; Fox, Gray and Lewis, 2004; Shawyer, Mackinnon, Farhall, Sims, Blaney, Yardley, Daly, Mullen and Copolov, 2008). Others have defined the command group as those that have heard commands in

- Command Hallucinations

the six months prior to the research interview (e.g. Lee, Chon, Chan and Ganganaran, 2004). Furthermore, prevalence study data suggests that if clinicians do not explicitly ask what the voice says it is likely that a significant proportion of voice hearers do not disclose commands (see Rogers *et al*, 1990) so any comparison based on case note data is likely to miscategorise a significant proportion of voice hearers.

2.4 Prevalence of Command Hallucinations

There are many difficulties associated with estimating the prevalence of command hallucinations. The first is a sampling bias, whereby command hallucinations may be more likely to be found amongst certain groups (that is forensic populations and inpatient groups). The second is that, as discussed above, there is likely to be significant under detection of the phenomenon unless a standardised assessment incorporating a question that enquires specifically about voice content and the presence of commands is utilised (see Rogers *et al*, 1990) and in some populations, patients may be wary of reporting commands for fear that greater restrictions might be placed upon them (cf. Junginger, 1996).

Prevalence rates appear to vary according to the location of recruitment and the means of assessment. The most recent review of command hallucinations (Shawyer, 2003) reported prevalence rates ranging from 18% to 89%. There is an assumption that command hallucinations are more prevalent amongst forensic populations (Thompson *et al*, 1992). The literature, however, suggests that this may not be the case. Rogers *et al*, (1990) report that approximately 40% of psychotic patients consecutively admitted to an inpatient forensic hospital reported command hallucinations within the month prior to

- Command Hallucinations

admission. Whilst it has been reported that amongst community inpatient facilities, 53% of individuals with a diagnosis of schizophrenia reported currently hearing commands (Lee *et al*, 2004). Although it is intuitive to think that the most distressed and 'risky' individuals would be in inpatient settings and therefore there would be an increased prevalence of command hallucinations in such environments, it is likely that commands are underreported in inpatient settings, perhaps as a result of individuals being fearful of increased restrictions being placed on them (see Junginger, 1996). Indeed, when studies have incorporated multiple community settings, (Mackinnon *et al*, 2004), two thirds of a large sample (n = 193) of individuals reporting auditory hallucinations were found to hear commands.

What is clear from these studies is that the prevalence rate of command hallucinations is much higher when participants are explicitly asked about the content of the voices. Prevalence rates based on data gathered from case notes are likely to significantly underestimate the presence of the phenomenon as clinicians have been shown to fail to ask about the content of voices and therefore fail to detect the presence of commands (Rogers *et al*, 1990).

The disparities in prevalence rates may also be underpinned by the time scale in which an individual may have heard the command. Some studies ask whether the individual has ever heard a voice telling them to do something. Such rates cannot be compared with those asking whether someone is currently experiencing commands.

Finally, limiting the research sample to individuals with schizophrenia who report command hallucinations is also likely to underestimate the prevalence of commands

- Command Hallucinations

amongst voice hearers in general. Research suggests that whilst auditory hallucinations are more commonly associated with a diagnosis of schizophrenia (Hellerstein *et al*, 1987) they are not exclusive to this diagnostic category and have also been noted in affective psychosis, mood disorder and borderline personality disorder (Rogers *et al*, 2002; Mackinnon *et al*, 2004; Fox *et al*, 2004) as well as in post-traumatic stress disorder amongst war veterans (Holmes and Tinnin, 2005). Those studies that have adopted a symptom- rather than a syndrome approach have detected higher prevalence rates.

2.5 Content of commands

Whilst certain earlier studies of command hallucinations (e.g. Cheung, Schweitzer, and Crowley, 1997) did not describe or distinguish between the varying content of commands, others have paid greater attention to what the voice is actually instructing (e.g. Hellerstein *et al*, 1987).

In general, studies have categorised content into harming others or harming self with several studies also noting the presence of innocuous commands.

The prevalence of dangerous commands (that is commands to harm self or others) has been shown to range from 7 – 70% with a median of 48% (Shawyer, MacKinnon, Farhall, Trauer and Copolov, 2003) in non-forensic populations. Several studies report violent commands more frequently being reported by females than males (Buccheri, Trygstad and Dowling, 2007; Lee *et al*, 2004). The authors of these papers did not speculate on their findings with regard to gender. It could be hypothesised that women are just more likely to admit to hearing voices to harm others because they see the content

- Command Hallucinations

as ego dystonic. What is clear is that these results need to be replicated in order to better understand the development and maintenance of command hallucinations.

Typically a higher prevalence of 'harm other' content has been found amongst forensic populations than community samples (e.g. Fox *et al*, 2004, Rogers *et al*, 2002). For example, Fox *et al* (2004) in specifically recruiting a group of individuals reporting commands and including a forensic population found a lifetime prevalence of 44% self-harm content and 56% harm-other content with approximately one third reporting multiple content. This is, however, perhaps unsurprising particularly given that Fox and Rogers asked about lifetime experience of commands, some of the sample had not heard harm-other commands for five years or more. Unsurprisingly, the prevalence of 'dangerous' commands is higher in forensic populations with 83% of the population (according to case note data) found to have command hallucinations with criminal content. With regard to community or non-forensic settings, inpatients have been shown to report less dangerous commands than those in outpatient settings (Junginger, 1995) perhaps as a result of fear of reporting, or as a result of optimum treatment and limited exposure to other influential factors such as drugs and alcohol, weapons (the content of psychotic symptoms has been shown to alter depending of accessibility of weapons, see Junginger, 1996).

Citing rates for individual commands may be slightly misleading as the clinical reality is that a significant proportion of voice hearers report multiple types of command. In a sample of individuals attending group therapy for hearing voices (Buccheri *et al*, 2007), 47% reported hearing at least one type of command with 44% reporting commands to harm self and 22% reporting commands to harm others. Sixteen per cent reported

- Command Hallucinations

experiencing multiple commands. The detection of multiple command content has been replicated many times (e.g. Rogers *et al*, 2002; Shawyer *et al*, 2008).

Buccheri *et al* (2007) noted that the majority of those experiencing commands to harm themselves reported having heard such voices “from birth” or “from childhood”. The authors note that commands to harm self are also more likely to be persistent whereas commands to harm others appear to wax and wane. Again, the authors did not offer an interpretation of this finding.

2.6 Are command hallucinations associated with risk behaviour?

This section explores those studies (or the elements of studies) that correlate command hallucinations with subsequent compliance without exploring the factors that mediate compliance.

Historically, clinical lore has suggested that command hallucinations are a probable predictor of dangerousness; of harm to self or others. In 1982, Kolb and Brodie wrote in their general psychiatry textbook that “*hallucinations conveying a command often...lead to direct and dangerous action*”. (p. 101). Kaplan and Saddock (1988, p 261) note that “*individuals with disorders such as schizophrenia can be driven to homicide often for very unpredictable and bizarre reasons based on hallucinations*”. Findings highlighting the aggressive treatment and prolonged detention of individuals with command hallucinations (Trower *et al*, 2004) suggest that perhaps this perception of risk remains prominent, at least for clinicians.

- Command Hallucinations

2.6.1 Case Study Data

One of the earliest studies of command hallucination suggested that those who experienced commands typically ignored them and that none of those that had been interviewed had committed dangerous or destructive acts in response to the symptom (Goodwin, Alderson and Rosenthal, 1971). Others have suggested that complying with dangerous commands is “not an issue” (Talbot and Falloon, 1987). Yet, a plethora of case study data has since suggested a positive relationship between command hallucinations and the risk of: sexual offending (Pam & Rivera, 1995); violence to others (Good, 1997); self amputation of a limb (Hall, Lawson and Wilson, 1981); self amputation of the penis (Hall *et al*, 1981); swallowing objects (Karp, Whitman and Convit, 1991); self mutilation of the eyes (Field & Waldfogel, 1995); self inflicted lacerations (Rowan & Malone, 1997); and suicide (Zisook, Byrd, Kuck and Jeste, 1995).

The findings from a series of larger scale, experimental studies are generally more inconsistent. These studies will be briefly reviewed below.

Earlier studies of the relationship between command hallucinations and risk provided little evidence of a clear association with violence and/or self-harm or suicide.

2.6.2 Studies on State Recordings

The findings from studies that utilise state recordings are equivocal. Two studies have detected a null relationship between command hallucinations and dangerous behaviour. Thompson *et al* (1992) examined the clinical and offence characteristics of a sample of NGRI (not guilty for reasons of insanity) acquittees experiencing command hallucinations (n = 34) at the time of their offences. Their hypothesis that those with commands would

- Command Hallucinations

be more likely to commit violent acts against others was not supported. Whilst they found that 62% of the command hallucinations group reported complying with at least some of their commands around the time of the offense there was a low level of association between the command and the offence. With regard to command hallucinations and suicide, Broer and Astrachan (1984) reported that no schizophrenic patients committing suicide over an 11-year-period in one American state experienced command hallucinations.

On the other hand, Martell and Dietz (1992) reviewed the state records of 20 individuals referred for psychiatric evaluation after pushing strangers onto subway tracks in New York City. All but one was shown to have a history of psychiatric hospitalisation and all but one were psychotic at the time of the offence. Fifteen per cent of the sample, claimed to have committed the offence in response to command hallucinations.

Using state records is a useful methodology but is significantly confounded by a number of factors; not least that the findings are based on various non-standardised data sources and on self-report data only. Whilst Thompson and colleagues excluded those that were felt to be malingering, Martell and Dietz did not and there is undoubtedly a bias in examining those that were facing the American judicial system. These biases have been outlined by others who suggest that court diversion systems, police interviewing skills etc. mean that the narrow sample of individuals claiming NGRI are unlikely to be representative (Walsh, 2002). When multiple sources are employed, the association between command hallucinations and violence appears to be less significant. For instance, Joyal, Putkonen, Paavola and Tiihonen (2004) conducted a well designed study that drew upon multiple sources of information (including state records, witness reports,

- Command Hallucinations

clinical history and clinical interviews) and found that 40% of the homicides committed by individuals with schizophrenia in Finland followed delusions and/or hallucinations, although often the offence was committed under the influence of alcohol (a major confounding factor) and the homicidal behaviour was felt to be more closely linked to delusions than hallucinations.

2.6.3 Larger Studies using Clinical Populations

Studies that are based on current clinical populations are likely to be more informative in terms of identifying a relationship between command hallucinations and risk behaviour. Yet, the findings from early studies into command hallucinations were equivocal at best and the majority of studies focus on violence.

Several studies have detected a null relationship between command hallucinations and violence. Three of these have examined violent behaviour in general amongst individuals with command hallucinations. Hellerstein *et al* (1987) reported that the assaultiveness of a group of inpatients with command hallucinations was not significantly different from individuals without command hallucinations. Zisook *et al* (1995) also noted that amongst a group of outpatients with schizophrenia those with command hallucinations did not have a history of more violent or impulsive acts than a matched group without command hallucinations. Cheung *et al* (1997) classified a group of psychiatric inpatients as either violent or not violent based on staff observations of aggressive incidents and found that exactly the same number of participants in each group reported command hallucinations leading them to conclude that there appeared to be no relationship between the presence of command hallucinations and inpatient violence and aggression. Cheung and

- Command Hallucinations

colleagues acknowledge that the incidence of violence amongst both groups was very low, was infrequent and was most often directed towards staff. This null result may be a reflection of a lack of power or just a reflection of poor classification of experimental groups.

Whilst these studies may seem reassuring in that they suggest that individuals with command hallucinations are unlikely to be any more violent or aggressive than individuals without command hallucinations, they cannot feasibly be used as a reliable indicator or whether someone will comply with a command to harm others. The major limitation of all three studies is their failure to control for exposure to violent content commands. For instance, Hellerstein *et al* do not draw upon their finding that, based on the medical records, only 5% of their sample had reported commands to seriously harm others when they interpreted the non-violent nature of their sample. Cheung *et al* also failed to control for content. It may therefore be that the violence that was observed in their study was totally unrelated to the content of the command (which could have, for instance, been instructing suicide). Violence and aggression are not uncommon during the early phases of hospital admission as a result of the early stage of the episode and the requirement of the individual to adjust to the confines of hospital treatment (McNeil, Binder and Greenfield, 1988). It is therefore essential that the content of the commands is carefully considered.

Rogers *et al* (2002) demonstrated the importance of controlling for the content of the command in retrospective study of compliance with command hallucinations in a medium secure unit ($n = 54$). They attempted to address the much cited confound of not controlling for content by examining the content of the commanding voice as reported in

- Command Hallucinations

medical records or legal documents. Individuals with a history of command hallucinations prior to or at admission were included in the study and their behaviour followed up throughout their admission by way of an examination of untoward incident forms detailing any violent or self injurious behaviour. The authors found that there was a significant relationship between self-harm commands and subsequent self-harming behaviour (or attempted behaviour that required staff intervention) but that there was no significant relationship between violent content commands and later violent behaviour. When the content of the command was ignored, the statistical relationship between commands and compliance were substantially weakened. For all of its methodological strengths, the difficulty, of course, with this study is that the individuals themselves were not interviewed so there is an assumption (which the authors acknowledge) that the behaviour was driven by command hallucinations when in fact (particularly with the aggressive treatment and therapy that the authors mention) such symptomatology may have resolved and the self-harming, violent or aggressive behaviour that was observed may have been associated with something else entirely, such as the constraints of residing in a medium-secure unit. There is also the issue of only including a detained sample. It is likely that in a medium secure unit any attempts to comply with a violent command would have been thwarted or prevented in a risk management plan thus limiting the detection of the dependent variable. Nevertheless the study did highlight the importance of controlling for the content of the voices, a finding that Rogers (2004) has since replicated in a secondary analysis of the large-scale MacArthur risk assessment database.

An important finding from the Rogers study was that when a three-month, post-discharge follow-up was conducted two (5.4%) of the individuals that had reported self-harm

- Command Hallucinations

commands had subsequently committed suicide, suggesting that when the safeguarding provided by the secure facility was not present, individuals may well have complied with a command to harm themselves. Rogers did not report how many of those reporting violent content commands went on to commit violent acts or offences.

Other studies have also detailed the content of commands (even if they have not later controlled for them in statistical analyses). Kaspar, Rogers and Adams (1996), conducted a study of hospitalised patients and detected a high rate of compliance with command hallucinations. According to case note data, of those reporting command hallucinations, 60% reported complying with harmless commands in the past month, 92% of these complied with commands to harm self, and 67% with commands to harm others, yet the authors found that the command hallucinations group were no more likely to engage in violent or suicidal behaviour than a group of individuals with general auditory hallucinations. Such high rates of compliance are not necessarily surprising amongst an inpatient sample as risk behaviour is the most likely prompt for admission to an inpatient facility. Studies that have incorporated a community sample typically report lower levels of compliance, for instance Juninger (1990) interviewed 44 individuals from mixed settings found that 40% admitted complying with dangerous commands and a similar proportion reported complying with innocuous commands. Unfortunately, Juninger relied on self-reported violence although does state that the reports were later verified.

It is clear that some of the earlier studies were marred somewhat by their failure to examine the nature of the commands before correlating the symptom with the subsequent behaviour. Further, it would appear from the existing research that there is limited and inconsistent use of standardised measures of determining the outcome variable (i.e.

- Command Hallucinations

violence or self-harm). Relying solely on self-report may over or underestimate the actual occurrence of behaviour depending on the individual's subjective view of what constitutes violence or self-harm.

Those studies that have directly interviewed voice hearers, have utilised standardised measures of violence (McNiel, Eisner, and Binder, 2000) and have also collected collateral information from informants (Monahan, Steadman, Silver, Appelbaum, Robbins, Mulvey, Roth, Grisso, and Banks, 2001) have detected a positive relationship between command hallucinations and violence. McNiel *et al* (2000) adopted a retrospective design and interviewed a sample of inpatients in a "*civil, non-forensic context*" in the United States asking them whether they had ever heard a command hallucination to harm others and, if so, how often they had complied with the command. They found that individuals with command hallucinations were significantly more likely to report a history of violence in the two months before hospital admission and they were twice as likely to be violent than a heterogeneous group of inpatients without command hallucinations. The association between command hallucinations and violence remained significant even when established predictors of violence (male gender, substance abuse and low levels of the need for social desirability) were entered as covariates. However, when the extent of other psychotic symptoms was added into the regression equation, command hallucinations no longer made a significant contribution. McNiel *et al* suggest that although command hallucinations may be associated with violence it is only in the context of other positive psychotic symptoms. Whilst this study did benefit from improved methodological rigour, it was retrospective in nature and it did rely wholly on self-reported violence with no corroborative information sought from informants or

- Command Hallucinations

records. Furthermore, the authors asked participants about the experience of command hallucinations in the past year yet correlated this with violence in the two months preceding admission. The two variables may have been totally unrelated given the different time frames provided. Finally, whilst the initial sample of inpatients was large ($n = 103$), less than one third reported command hallucinations in the last year ($n = 31$). Of these, twenty individuals reported hearing such commands infrequently ('sometimes' to 'almost never') and less than half of those reported commands complied more than 'sometimes'. The findings are therefore based on a very small sample. Given the small number of individuals reporting hearing commands the generalisability of the findings must be questioned, particularly when this group are compared to a clinical sample who, for example, are involved in a randomised controlled trial for command hallucinations the majority of whom report frequent, distressing and disruptive command hallucinations (Trower *et al*, 2004).

The MacArthur risk assessment study, on the other hand was prospective in nature, employed standardised (albeit purpose designed) measures of violence and obtained collateral information about violent behaviour from multiple sources. The study detected a significant association between command hallucinations and violence at 20-week follow-up and one-year follow-up. As with Rogers *et al* (2002) this association was rendered non-significant when the content of the commands was not controlled for.

Rogers (2004) urges caution when interpreting these results suggesting that the use of a chi-square analysis does not make the best use of the available data (as 5 follow-up time periods were available and only two were utilised) and does not permit a detailed analysis of the potential confounder of time or of additional pertinent confounding variables (such

- Command Hallucinations

as gender, substance abuse etc). Whilst the MacArthur study benefited from the largest sample of command hallucinators to date (n = 239 of whom 44% reported violent content commands), the group consisted of individuals with a lifetime history of commands and no distinction was made between those that may not have heard such voices for two years and those that had heard them the day before the assessment. Like the McNiel study this limits the findings to saying that individuals with a lifetime history of command hallucinations appear significantly more prone to violence rather than command hallucinations *per se* cause or significantly contribute towards future violence. The findings could therefore be attributable to diagnosis or treatment effects rather than the phenomenology *per se*.

Rogers (2004) addressed some of the limitations of the original analysis of the MacArthur Risk Assessment database by controlling for a number of important confounders. He found that even when pertinent sociodemographic variables (age, gender, marital status and ethnicity), drug and alcohol abuse, severity of psychopathology, presence of delusions and psychopathy were controlled for the relationship between command hallucinations and violence remains significant. Indeed the results from this secondary analysis suggest that individuals with violent content command hallucinations are 1.39 times more likely to engage in a violent act in the following year than individuals without violent content command hallucinations. Again, however, the results were limited to individuals with a lifetime history of violent content commands rather than current command hallucinations.

It would appear from this review, that if the results of any future examination of the relationship between command hallucinations and risk are to be generalisable, studies

- Command Hallucinations

must pay close attention to the content of commands, must recruit command hallucinators from multiple settings (inpatient and outpatient, community and forensic), and must be prospective in nature. Further, any assessment of the outcome variable must be verified. The design for the current study of the factors underpinning compliance with command hallucinations seeks to incorporate all of these elements.

Regarding decisions about risk, it is difficult to conclude from the above literature whether an individual hearing commands will comply or not. Whilst the issue of controlling for the nature and content of the voice has been identified and addressed in some of the later studies, there remain a number of methodological issues that decrease the generalisability of the findings. There is a good deal of inconsistency amongst the studies in terms of what constitutes compliance and how compliance behaviour is assessed. Whilst some have conceptualised compliance as a dichotomous variable (Rogers *et al*, 2002), others have noted an additional category of partial compliance (Juninger, 1996). Conceptualising those that do not obey the exact instructions of the voice as non-compliers may underestimate or misguide the assessment of risk and fail to capture the complexity of the individual's behavioural response to the command.

Furthermore, it would appear that the preponderance of the existing research has focussed on violence. It is clear from those studies that have been conducted that whilst a minority of individuals obey commands to commit dangerous and violent acts to harm others, a significant proportion obey commands to harm themselves (Beck-Sander *et al*, 1997; Fox *et al*, 2004). If we are to begin to fully understand compliance behaviour, it is essential that we understand voices in the full context. For instance, an individual may be instructed to harm someone else but chooses instead to harm themselves which perhaps

- Command Hallucinations

explains why two individuals in the Zisook *et al* (1995) study committed suicide during the process of the research (see Beck-Sander *et al*, 1997). Categorising one such individual as a non-complier is overly simplistic and almost overlooks the risk that they pose to themselves and perhaps the risk they may pose to others in the future since they are clearly not able to fully resist the voice. Moreover, it has been suggested that commands to self-harm have a different nature and course from violent content commands (Buccheri *et al*, 2007) and the factors that underpin compliance with self-harm commands may differ from those that underpin compliance with commands to harm others (Fox *et al*, 2004) such that the findings from one group of compliers cannot be generalised to another group.

The above review of the available evidence at a phenomenological level demonstrates that study at this level alone is not sufficient in identifying those factors that influence the risk of complying with dangerous commands and supports the need for more detailed study. Whilst it is clear that, when the content of the command is taken into account, there is a significant association between hearing a dangerous command and complying, it is also evident that a significant proportion of individuals do not comply with the voice's instructions. It would seem that hearing a command hallucination (the phenomenon) does not automatically result in obedience on behalf of the voice hearer and that although command hallucinations may be pre-determinants of potential risk, other extra-phenomenological variables may play a mediating role (e.g. belief about the voice). Specifically, some individuals hear command hallucinations instructing them to act violently (either towards themselves or others) and willingly comply, while others

- Command Hallucinations

hear such commands and readily resist or ignore them. It seems timely now to begin to consider what distinguishes those that comply from those that resist.

2.7 Distinguishing Compliers from Non-Compliers – Mediating Variables

Whilst there is some evidence from well controlled studies that there is a relationship between the experience of command hallucinations and compliance when the content of the command is taken into account, there is also a recognition that a significant proportion of individuals with command hallucinations do not comply (see Shawyer, 2003). It is clear, therefore, that there is likely to be a number of mediating factors involved in the relationship between the command hallucination and subsequent compliance.

2.7.1 Characteristics of the Voice and Topographical Variables

Several studies have suggested that the nature and content of the voice and how frequently it is heard by the voice hearer are associated with compliance. It has been suggested that compliance with commands appears to decrease depending on the level of dangerousness that compliance with the command poses, with a number of studies stating that the majority of those reporting compliance actually comply with innocuous commands (Junginger, 1995; Beck-Sander *et al*, 1997; Chadwick and Birchwood, 1994). There is no doubt, however, that a significant proportion of individuals do comply with dangerous commands (see Fox *et al*, 2004) and those studies that highlight compliance with innocuous commands appear to overlook those that comply with dangerous commands to harm themselves.

- Command Hallucinations

In a study examining the relationship between general psychopathology, voice characteristics and compliance amongst a small group of individuals with command hallucinations ($n = 31$), Erkwow *et al* (2002) found that there were no significant differences between the groups with regards to general psychopathology and that it was very difficult to detect a clear profile that would distinguish compliers from non-compliers. The authors used a binary matrix methodology to assess the profiles of compliers and non-compliers and found that only three voice variables were more frequently found in the compliers group: believing the voice to be real, perceiving the voice to be familiar, and having a post-hallucinatory affective reaction (which may have consisted of fear, despair, anger or restlessness and occasionally happiness). The authors selected a very narrow range of variables for assessment believing that voice characteristics (such as volume and frequency) would be most likely to account for the behavioural differences between the groups. Like Erkwow *et al*, others have also noted that being able to identify the “owner of the voice” is associated with compliance (Junginger, 1995; Beck-Sander *et al*, 1997).

Whilst Erkwow *et al* (2002) found no significant differences between compliers and non-compliers with regard to the frequency with which voices are heard, it is likely that their use of a binary matrix methodology which forces dichotomies onto the data minimised the differences between the two groups. Those that have utilised more detailed scales have noted a difference in topographical variables. For instance, Shawyer *et al* (2008) found that compliance was associated with the two ends of the spectrum with regards to frequency, with compliance being most likely if the voice was heard either just once or persistently (Shawyer *et al*, 2008).

- Command Hallucinations

These findings do appear to suggest that those that comply feel compelled to because the voice appears familiar or demanding. Perhaps those that hear the voice more frequently feel that compliance is the only way to gain any relief (see Mackinnon *et al*, 2004), whilst those that hear the voice as an infrequent intrusion perceive the voice to be unusual and more 'real' and thus somehow more compelling. Freedman, Wallington, and Bless (1967) suggest that with enough pressure, enough social reward, and enough convincing reasons most people will comply – a thesis which may go some way to explaining the relationship between increased frequency of voices and compliance. Freedman *et al* also suggest that there are ways of inducing compliance without pressure. They suggest that guilt is one means of achieving this, which perhaps explains Erkwow *et al*'s (2002) finding that compliance is also associated with post-hallucinatory affect. Perhaps compliance occurs as a direct result of the emotion (that is the guilt associated with not complying) or compliance occurs as a result of trying to ease the intensity of the emotional response.

The finding at the other end of the frequency spectrum (that is those command hallucinations that are only heard once or infrequently) appears to be in keeping with Mackinnon *et al*'s (2004) suggestion that those voices that are deemed to be intrusive are more likely to elicit compliance. Mackinnon does not explain why this particular feature might be important but perhaps it is that, for some, the absence of an opportunity to become desensitised to the content of the voice results in an exaggerated emotional response thus increasing the likelihood of complying.

Whilst a number of 'topographical' variables have been highlighted as potential mediating factors in the relationship between command hallucinations and compliance, it

- Command Hallucinations

is now well documented that there is a greater contribution of the individual's beliefs about the voice – a variable that is often unrelated to content, volume or frequency.

2.7.2 Beliefs About Voices

The findings with regard to the way in which the individual appraises or interprets the voice have been relatively unequivocal. For instance, it has consistently been found that, regardless of content (that is dangerous or innocuous commands) those voices that are perceived to be benevolent in nature and purpose are more likely to evoke compliance than those that are perceived to be malevolent (e.g. Beck-Sander et al, 1997). It would also appear that the greater the perceived power and omnipotence of the voice the greater the likelihood of compliance (Beck-Sander et al, 1997; Birchwood, Meaden, Trower, Gilbert and Plaistow, 2000; Fox et al, 2004; Shawyer et al, 2008).

Others have found that those that perceive the voice to be malevolent are more likely to resist with resistance increasing if the content of the command is more severe (Birchwood and Chadwick, 1997; Close and Garety, 1998). However, such individuals predicted that the malevolent voice would inflict harm whenever they resisted. Similar findings have been reported by Shawyer et al (2008) who found that those command hallucinators who appraised their experience to be irrelevant, positive (that is of benefit to them) or challenging (of benefit but stressful) rather than threatening were more likely to comply. All of those that characterised the command as positive (approximately one fifth) complied with the command. Fox *et al* (2004) managed to obtain a broader, perhaps more representative sample of command hallucinators by recruiting from both community settings and medium secure units. They found that those who complied with

- Command Hallucinations

dangerous commands to harm themselves or others believed the commanding voice to be significantly more omnipotent and benevolent than those who did not comply with the commanding voice. They also reported a higher degree of engagement with the voice.

Beliefs about power are perhaps partly underpinned by the degree of control that the individual feels they have over the voice. Amongst the findings by Beck-Sander *et al.* (1997) was the observation that those individuals who believed that they had subjective control (e.g. by self distraction) over their voice were less likely to comply with commands. This appears to be consistent with Mackinnon *et al's* (2004) finding that those individuals with more coping strategies were less likely to comply with command hallucinations than those without a repertoire of coping strategies.

Despite some inconsistencies, that are likely to be due to methodological differences, the above findings offer preliminary support for the hypothesis that the beliefs individuals hold about their voices (in particular beliefs about omnipotence and benevolence) are important in determining whether or not they comply with their commands. However, it is difficult to draw conclusions about self-harm from the literature as those studies that have analysed the results according to content (Beck-Sander *et al.*, 1997) detected different findings for self-harm commands. For instance, Beck-Sander *et al.* (1997) interviewed a small sample of individuals (predominantly male) with command hallucinations in a community setting (n = 35). They found that beliefs about benevolence were significantly associated with compliance with innocuous and “dangerous” (illegal and violent) commands only, not self-harming commands. This apparent lack of association might be a result of the small sample size or the limited population from which the sample was drawn (community, non-forensic patients only).

- Command Hallucinations

Furthermore, the study used the first version of the beliefs about voices questionnaire which forced the individual to answer dichotomously (yes/no) in response to the items. It may be that this minimised the detection of more subtle differences in beliefs. Shawyer *et al* (2008) describe the content of the commands of their sample of command hallucinators and include commands to harm self but appear to examine only violence as an outcome variable. Whilst Fox *et al* did pay more attention to those with self-harm commands, they asked individuals to report based just on one voice and categorised individuals as though they heard just one form of command even though 37.5 % of the sample reported experiencing both harm-self and harm-other commands.

2.7.3 The relationship between voice and voice hearer

In light of the finding that the relationship the individual has with the voice mirrors the individual's real life social relationships (Birchwood *et al*, 2000), research has turned towards the relationship the voice hearer has with the voice and the beliefs that they have about themselves and others in general. Fox *et al* (2004) conducted a study examining the factors underpinning compliance with command hallucinations in a sample drawn from forensic and community settings ($n = 32$). Drawing upon social rank theory, the authors detected an important interaction, in that those that had complied with commands to harm others perceived themselves to be significantly more superior than those that either had not complied or those that complied with a command to harm themselves, whereas those that complied with commands to harm themselves reported significantly more inferior self-beliefs. Like others, in order to simplify the study, Fox *et al* asked participants to focus on one voice, the 'principal voice' and the group to which they were assigned (harm self vs harm other) was based on this voice. It may be therefore that this

- Command Hallucinations

finding is confounded by the presence of multiple types of command (as stated above, over a third of participants reported experiencing both harm-self and harm-other commands). More importantly, a significant proportion (22%) had not heard command hallucinations for over a year. Caution must therefore be exercised when interpreting any association between beliefs about a voice heard longer than a year ago and current beliefs about self.

2.7.4 Additional Variables

A number of other factors have been found to be associated with compliance with command hallucinations and harm to self or others. For instance, whilst not necessarily more deluded than individuals without commands, having a congruent delusion appears to increase compliance (Junginger, 1990; 1995; Shawyer *et al*, 2008). Others have suggested that the presence of delusions significantly increases the risk of violence in general (Swanson, Borum, Schwartz *et al*, 1996). Having a history of prior compliance with command hallucinations to harm (Harkavy-Frieman, *et al*, 2003), and having fewer coping strategies (Mackinnon *et al*, 2004) have also been associated with compliance with command hallucinations.

Again the preponderance of the existing research focuses on violence or harm to others rather than self-harm or suicide but it is clearly essential to take account of delusions when exploring the relationship between command hallucinations and compliance.

- Command Hallucinations

2.7.5 Comment

Whilst a number of consistent findings with regard to mediators are now emerging the extent to which these findings can be generalised is limited. Two of the studies described above used lifetime history of commands to identify command hallucinators (Fox *et al*, 2004; Shawyer *et al*, 2008). In the Fox *et al* study, a significant proportion of the sample had not heard voices for over a year. Shawyer *et al* (2008) asked participants to identify the maximal level of compliance they had ever demonstrated with the most serious command since 18 years of age. They referred to this as the index command and the remainder of the research interview pertained to this command only. As with the Fox *et al* study, the mean time elapsed since hearing this voice was substantial (5.2 years) meaning that the participants had to rely considerably on their memory when considering what they thought and felt about the voice at the time. This may explain why a substantial proportion (40%) reported the index command as neutral, positive or at most challenging. This is clearly discrepant from the clinical evidence of command hallucinations (Trower *et al*, 2004) and from previous research evidence (Mackinnon *et al*, 2004). Furthermore, the presence of the historical command could only be verified in 63% of cases, so the validity of the remaining cases must be questioned and the results interpreted with caution.

Other studies have used limited patient groups such as only community, only forensic, or only inpatient. As mentioned above this is likely to limit the spectrum of content of commands and the degree to which individuals have complied with dangerous commands.

- Command Hallucinations

Most importantly, no study to date has utilised a prospective design. Thus while the studies can discuss the association between the mediating variables and compliance behaviour they are unable to comment on the factors that predict future compliance. We hope to address this shortcoming in the existing literature by incorporating both retrospective and prospective elements in the research design.

2.8 Cognitive Behavioural Model of Command Hallucinations

Chapter one outlined the way in which the basic cognitive behavioural model of voices seeks to explain the emotional and behavioural response to auditory hallucinations in general. Within the generic model the voice is conceptualised as the activating event that is interpreted in a certain way by the voice hearer (belief about voices) thereby eliciting emotional and behavioural consequences. The thesis that the degree of distress associated with auditory hallucinations is mediated by the individual's beliefs about the voices they hear has received a great deal of empirical support (Chadwick and Birchwood, 1004; Close and Garety, 1998; Andrew, Snowden and Gray, 2008).

Cognitive-behavioural models have now been applied to the experience of command hallucinations (see Byrne *et al*, 2006). Within this model it is suggested that the behavioural response to voices can be seen as a safety behaviour; that is the individual behaves in such a way that they believe that the threat of the voice has been reduced, at least for some time. Byrne and colleagues suggest that this is part of a cognitive mechanism that serves only to maintain the belief in the power of the voice; that maintains the status quo. For example, an individual hears a voice commanding them to "cut". They believe that if they do not comply the voice could hurt their family or friends

- Command Hallucinations

so they obey and cut their arms. The voice is quiet for a little while and nobody gets hurt that day. The individual has behaved in such a way as there was no opportunity to disconfirm the power of the voice. If they had not acted and nobody had got hurt there would have been a moment where the validity, the 'truth' and the power of the voice could have been called in to question.

It is well recognised that power differentials in social relationships can mediate the degree to which an individual will comply with an antisocial command. Milgram (1974) demonstrated in a series of seminal studies the way in which depending on the individuals beliefs about the command giver (that is how authoritative or powerful they perceived the command giver), their beliefs about their own control and their beliefs about the consequences of disobedience, individuals could be persuaded to administer harmful electric shocks to others with unquestioning obedience.

Similar processes appear to be at play with regard to command hallucinations. Byrne *et al* (2006) argue that the power differential between the voice and the voice hearer may be central in understanding the subsequent emotional and behavioural response and that the belief about power is underpinned by the individual's perception of the voice's identity (e.g. God, the Devil, an abuser), and meaning (the voice's intent – malevolent or benevolent) and the subjective degree of control the voice hearer has over the voice.

Previously the cognitive model did not seek to explain the origin of these beliefs. However, it has been established that the relationship that voice hearers have with their voices often mirrors real life social relationships (Benjamin, 1989; Birchwood, 2000; Gilbert *et al*, 2001). Cognitive behavioural theorists have therefore looked towards social

- Command Hallucinations

rank theory in order to explain the position that many voice hearers assume in relation to their voices.

Social rank theory posits that humans have developed to live in social groups with social ranks and have inherited the mental mechanisms to facilitate this. It is suggested that all social ranks have leaders and followers and that some social ranks are agonic, that is they are punitive social environments where leaders are hostile dominants who oppress their subordinates by exercising power and control and threatening punishment.

Those in subordinate positions are said to have evolved ways of coping with the threat of dominant ranks including the interpersonal behaviours of appeasing and submitting thereby terminating aggression. It is suggested that other subordinate behaviours include selective sensitivity to commands, a compulsion to obey commands, a compulsion to appease dominants when obedience is risky or dangerous but escape is impossible.

Gilbert (1989) suggests that these social ranks are represented in the mind as dominant-subordinate schema or mentalities which might explain why there is a high degree of congruence between the way that an individual behaves in relation to the voice and the way they behave in social relationships in general (Birchwood, 2000).

It is likely that the basis of these schema are developed early in life and that those that have been dominated in childhood are likely to have core underlying beliefs about being inferior or subordinate to others. This might highlight an important link to the finding that those who report commands to harm themselves are significantly more likely to have experienced sexual abuse in childhood or adulthood. Such individuals are perhaps more likely to view the world as a dangerous place where others can cause harm. Our previous

- Command Hallucinations

research (Andrew *et al*, 2008) suggests that those voice hearers who continue to experience the psychological sequelae of trauma (particularly childhood trauma) are more likely to interpret voices as malevolent and omnipotent, perhaps because their beliefs about themselves as subordinate or vulnerable to harm predispose them to seeing others in this light.

The cognitive-behavioural model (incorporating social rank theory) is very attractive when trying to understand the distress associated with voices and why some people obey command hallucinations while others resist. The theory would suggest that those who comply with dominant voices would be likely to perceive themselves as down rank to others. This might explain why a significant proportion of individuals comply with commands to engage in dangerous behaviours to harm themselves or others. However, given that the majority (over 80%) of voice hearers report dominant, omnipotent voices it would be expected that more than the median of 48% would comply. How, therefore, does the cognitive behavioural model of command hallucinations account for non-compliance? Furthermore, Fox *et al* (2004) found that those that comply with commands to harm others in fact rate themselves as superior to others, a finding that this model would struggle to integrate.

As stated above, social rank theory acknowledges appeasement as a typical behaviour of subordinates. However, it is difficult to predict from the cognitive model alone who would be most likely to appease as opposed to fully complying with the command.

The theory of reasoned action (Fishbein and Ajzen, 1975) posits that the intention to perform a behaviour depends on: its perceived effectiveness in attaining a valued goal

- Command Hallucinations

and the subjective norm in terms of the perceived social attitude to behaviour. Beck-Sander *et al* (1997) suggest that it is this weighing up of the social acceptability of action that underpins the compliance with innocuous commands. However it seems that this might also underpin appeasement behaviour and explain why, despite the majority of voice hearers reporting their voice as malevolent and omnipotent (Chadwick and Birchwood, 1997) the majority do not comply. As mentioned above, social rank theory posits that subordinates are most likely to comply with dominant others but that when compliance appears risky or dangerous, they may attempt to appease the dominant instead. The apparent null relationships that have been detected between malevolent voices and compliance may be a result of some studies conceptualising compliance as a dichotomous variable and thereby not detecting the 'appeasers' and by others having insufficient numbers of appeasers to make statistical analysis meaningful. According to the theory of reasoned action perhaps those that appease do so because they are able to enter into an analysis of the social impact of complying with dangerous or antisocial commands.

The other major critique of the cognitive behavioural model is the emphasis on cognitive processes and the relatively minimal attendance to the emotional components. The literature reviewed above suggests that those that have a strong emotional reaction to the voice are more likely to comply (Erkwoh *et al*, 2002). There is also some evidence that compliance in general social situations is more likely when the individual feels guilty (Freedman *et al*, 1972).

There appears to be a degree of consistency emerging that would support the feasibility of a cognitive behavioural model of command hallucinations. It is clear that beliefs about

- Command Hallucinations

voices and beliefs about self are important mediators in the relationship between the command and subsequent compliance. However, it is also clear that this is a very complex relationship that probably involves numerous other mediators and there are elements of the model that have gone untested for example, who is most likely to comply rather than appease or resist? It is also important to understand and replicate Fox *et al*'s finding that those who would appear to be dominant (that is report beliefs about themselves as superior) are in fact more likely to comply with dangerous commands to harm others. Is this because in their analysis of social acceptability they believe they are above retribution or that, as a result of other concomitant symptoms, their action is the only way to achieve a valued goal, or is it just a confound of the methodological design of the study?

2.9 Summary and Introduction to the Current Study

The above review suggests that a significant proportion of voice hearers report hearing command hallucinations which they find distressing and disruptive. When the key variable of content of command is controlled for, there appears to be a significant association between a lifetime history of command hallucinations and risk behaviour. Whilst there does seem to be a relationship between command hallucinations and risk of self-harm, relatively few studies have addressed risk to self as opposed to risk to others. The preponderance of existing research has focused on violence.

A number of key variables have now been replicated numerous times (power, benevolent voices are obeyed, and familiar voices are more likely to be obeyed) such that a good

- Command Hallucinations

deal of support has been generated for a cognitive behavioural model of command hallucinations.

Elements of this model remain unexplored. Furthermore, to the best of our knowledge there is still yet to be a purpose designed prospective study of compliance with command hallucinations.

The current study aims to explore the factors that underpin compliance with command hallucinations. In light of the above review, the current study will interview all voice hearers in a number of settings (in- and out-patient in community and forensic settings) in order to maximise the detection of past and present command hallucinations.

Key mediating variables will be explored including a thorough analysis of the content of each command heard and the behaviour associated with each command, the individuals beliefs about themselves, others and the voice.

We also plan to research the interpersonal suggestibility and interpersonal compliance of voice-hearers and investigate how this relates to compliance with command hallucinations. It appears that the process of experiencing commands bears some similarities to the concept of interpersonal suggestibility. Suggestibility is defined as *“the extent to which, within a closed social interaction, people come to accept messages communicated to them, as a result of which their behavioural response is affected”* (Gudjonsson, 1997). The concept of suggestibility is most commonly used within interrogative situations (e.g. police interviews) but can also be used to evaluate whether a person is vulnerable to suggestion from criminogenic influences. We will extend this concept to evaluate whether a person high on interpersonal suggestibility is more prone to

- Command Hallucinations

comply with suggestion from command hallucinations. To our knowledge this has never been previously investigated.

Interpersonal compliance differs from suggestibility primarily in that it does not require a private acceptance of the proposition or request. In other words, the person makes a conscious decision to carry out the behaviour proposed or requested, even if he/she privately does not agree with it. Some individuals have a tendency to comply with requests and obey instructions even if they would rather not carry out these actions. Often a high degree of compliance relates to two related factors: eagerness to please others and avoidance of conflict and confrontation. In the real world, high compliance can relate to an individual's propensity to comply with criminogenic others or to obeying the instructions of police interrogators and there is no reason to assume why it will also not be important in determining the compliance of command hallucinators to actions that they may not condone. Both interpersonal suggestibility and compliance apply when the person does not really want to comply but does so because they feel that they are unable to resist interpersonal pressure. Psychological research has shown that certain individuals, particularly those with cognitive disabilities (e.g. low general intellectual ability or memory deficits) are particularly vulnerable to interpersonal suggestion (Gudjonsson, 1997). It is therefore important that measures of intelligence and memory are also collected to control for these factors.

Finally, all individuals reporting command hallucinations will be followed up over a six-month time period in order to ascertain who complies and who doesn't.

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

Chapter 3 - THE COMMAND HALLUCINATIONS RATING AND INTERVIEW SCHEDULE (CHRIS)

This chapter provides details of the development and initial validation of the command hallucinations rating and interview schedule (CHRIS) - a purpose designed measure for the assessment and categorisation of command hallucinations and associated responses for use in the current research project.

3.1 Introduction

It is clear from the preceding chapter that there may be a relationship between the experience of command hallucinations and dangerous behaviour towards self and others. However, the review highlighted the methodological inconsistencies that prevent any clear conclusions being drawn from the existing literature. Such inconsistencies include a failure to examine the content of command hallucinations (that is whether the voices were even instructing violence), inconsistent outcome measures, poor categorisation of groups (violent vs non-violent), a failure to control for confounding factors, and a lack of a standardised definition of and means of measuring command hallucinations and associated behaviour (Braham, Trower and Chadwick, 2004). Clearly, this limits the extent to which clinicians can rely on the research literature to assist them in making decisions about risk.

Those studies that have benefited from improved methodological rigour (Shawyer *et al*, 2003; Rogers *et al*, 2004; Fox *et al*, 2004) have detected a positive relationship because they have attended to the content of the commands.

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

It has become evident that there is a range of content for command hallucinations that can be placed into any number of categories. Byrne and colleagues (2006) reported four broad categories of content in their recent randomised controlled trial of cognitive therapy for command hallucinations: commands to kill self, commands to kill others, commands to harm self, and commands to harm others. Whilst the authors provide numerous examples of the commands in each of these categories they do not provide an explanation as to how they arrived at these four categories or indeed whether additional categories exist. Furthermore, they do not provide a set of operationalised criteria that would enable other researchers or clinicians to adopt the same framework.

If we are to conduct a reliable study of compliance with command hallucinations, there is a need to reliably categorise an individual's response to the voices they hear in addition to content of commands. Beck-Sander and colleagues (1997) were perhaps the first to recognise the complexity of the relationship between voice content, the voice hearer and the associated behaviour. Importantly, the authors moved away from the concept of compliance as a dichotomous variable and introduced the notion of appeasement; that is somehow 'bargaining' with the voice. Byrne and colleagues (2006) drew upon this idea further in their command hallucinations trial. In their recent casebook of command hallucinations, they provide numerous examples of 'compliance' and 'appeasement'. They define the latter as "a behaviour that is symbolic of compliance or expresses an intent to comply", and provide such examples as holding a knife to the wrist when instructed to "slash your wrists", or collecting tablets and planning and executing suicide in their imagination in response to a command to "overdose". They utilised the Voice Compliance Scale (VCS; Beck-Sander et al., 1997; Birchwood and Chadwick, 1996) in

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

order to assist in categorising both the content and the behaviour associated with a command hallucination. The VCS is an observer rated scale to measure specifically the frequency of command hallucinations and the level of compliance/resistance with each identified command. Here clinicians are instructed to collect data pertaining to each command and then classify each behaviour according to the following scale: neither appeasement nor compliant; symbolic appeasement (compliant with innocuous and/or harmless commands); appeasement (preparatory acts or gestures); partial compliance with at least one severe command; and full compliance with at least one severe command. This would appear to be a very useful scale yet to our knowledge there is no assessment of the tool's psychometric properties (although it is mentioned in Byrne et al, 2006 that the original assessments in the RTC for CTCH were rated by three raters and returned "good inter-rater reliability, these have not been published), neither is the measure openly available for clinical or research purposes.

Chadwick and Birchwood (1995) have also employed the Cognitive Assessment Scale (CAS), a semi-structured interview that aims to assess the individual's feelings and behaviour in relation to the voice, and his or her beliefs about the voice's identity, power, purpose or meaning and the likely consequences of obedience or resistance. Again the tool does not lend itself to an analysis of its' psychometric properties and thus does not help to improve methodological rigour.

Finally, the Risk of Acting on Commands Scale (RACS; Trower et al, 2004) was used in the recently published trial of Cognitive Behaviour Therapy for Command Hallucinations as a means of classifying the level of risk of acting on commands and as a means of monitoring progress through the intervention phase. It is dependent on the use of a

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

thorough clinical interview and additional measures including the Psychotic Symptoms Rating Scale (PSYRATS; Haddock et al, 1999), the Belief about Voices Questionnaire Revised (BAVQ-R; Chadwick and Birchwood, 1997); the Voice Power Differential Scale (VPDS; Birchwood et al, 2000).

Essentially, the RACS provides a hierarchy of risk and distress ranging from low risk, low distress to high risk, high distress. The degree of risk is the result of an assessment of the degree to which an individual appeases the voice or uses coping strategies, the severity of the consequences of such behaviour and the individual's beliefs about the voice, themselves and the consequences of complying.

The RACS was a measure that was designed specifically for use in the Randomised Controlled Trial and again there is little guidance given as to how other researchers or clinicians would utilise the tool. Some of the concepts are not operationalised (for example in the moderate risk and high distress category its states "believes the commands to be morally repugnant and so should not be obeyed BUT fears severe consequences for non-compliance") sufficiently to facilitate reliable use. Furthermore, whilst the RACS provides a means of describing or categorising risk it does not categorise either the content of the command or the individual as a complier or a non-complier, thus it was not felt to be suitable for the purposes of the current research.

It would seem then that despite many authors recognising that if we are to begin to truly understand the relationship between command hallucinations and risk behaviour and draw appropriate conclusions from future studies, there is a need for a standardised means of 'measuring' key components of the experience there remain no reliable tools

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

that comprehensively assess and categorise command hallucinations and resulting behaviour.

The Command Hallucinations Rating and Interview Schedule (CHRIS) provides a means of achieving this. The interview schedule was developed by the author of this thesis in order to obtain a detailed account of the experience of command hallucinations that would capture the complexity of the phenomenon. Based on the cognitive model presented in chapter two, it explores the presence and nature of command hallucinations, the perceived identity of the 'command giver', the emotional and behavioural consequences of command hallucinations (e.g. compliance and non-compliance), the emotional consequences of compliance/non-compliance, the consequences of compliance on topographical variables (e.g. volume, frequency of voices), the perceived consequences of compliance/non-compliance (e.g. social consequences such as going to prison).

In the original development of the tool¹, the responses to the interview were subjected to thematic analysis in order to qualitatively explore the factors involved in compliance and begin to build a model of command hallucinations (see Barton, 2006). The key constructs that needed to be reliably identified in order to research compliance with command hallucinations were then able to be clearly defined. The key constructs that are defined are: voice content, past and present behavioural response (i.e. degree of compliance), function of behavioural response, and coping strategies. Initial analyses suggested that all but one of these constructs returned good – excellent levels of inter-

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

rater reliability (kappa values 0.667 – 0.886). The exception was ‘current behavioural response’ which returned a kappa value of just 0.571 (unacceptably low; Dunn, 1989). It was felt that this result was a consequence of the interview schedule not helping to delineate clearly enough between past responses (over a month ago) and current responses (within the last month). A further criticism was that the transcripts used in the original pilot of this measure were predominantly of individuals who reported experiencing one severe command only. The reality is that individuals often report more than one voice issuing more than one command (see Byrne et al, 2006).

In response to the above findings, subsequent interviews attempted to delineate between past and present behaviour. The manual was also modified, instructing raters that in cases where there was no clear distinction between past and present behaviour they should assume them to be the same.

In the absence of an alternative standardised measure of command hallucinations and associated behaviour, there remain two issues now: how reliable this measure is for the purposes of this thesis and how useful and reliable it is as a clinical and research tool for use by the wider clinical and academic community.

The aim of this study was therefore to explore the reliability of the measure.

¹ The author of this thesis provided academic and clinical supervision for Nicola Barton’s (2006) Doctoral Thesis. 61% of the sample in this thesis was recruited by Dr Andrew and 44% were interviewed by Dr Andrew. Dr Andrew then supervised the analysis and write up of the final thesis.

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

3.2 Methodology

3.2.1 Design

The study was designed to be a pair-wise analysis of the inter-rater reliability of the CHRIS using a correlational design.

3.2.2 Participants

The participants included in this chapter are part of the main study, thus the details for recruitment are reported in chapter four.

As part of the main study, the CHRIS was administered to 74 individuals aged between 18 and 65 who reported ever having had an experience of command hallucinations and who reported hearing voices within the month preceding the interview. Individuals were excluded if any of the following applied: not having a designated key worker, evidence of an organic condition of which hallucinations might be a symptom, being acutely distressed at the time of referral or interview such that the interview may serve to destabilise the individual.

Ten cases were randomly selected from the total sample in order to explore inter-rater reliability of the CHRIS. The selected group consisted of six males and four females all of whom were of white British ethnic origin. Sixty per cent of the group were or had been married and 40% were employed at the time of interview. The mean age of the group was 41.1 years ($SD = 10.55$) and mean age at first point of contact with mental health services was 29.1 years ($SD = 9.99$ and range = 14-47). The mean length of time hearing voices for this group was 12.5 years ($SD = 8.24$).

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

With regards to psychiatric diagnosis, individuals were asked to report what they believed to be their diagnosis and this was triangulated with information from their medical case notes. Four of the group had a triangulated diagnosis of schizophrenia, one had a diagnosis of schizoaffective disorder, four of the participants had a diagnosis of personality disorder and one a diagnosis of psychotic depression. Four of the group were inpatients in acute adult psychiatry facilities at the time of interview and six were community outpatients.

3.2.3 Measures

All ten individuals completed the full research interview as described in chapter four. They therefore completed the following measures after providing basic demographic information and a forensic and psychiatric history: Command Hallucinations Rating and Interview Schedule, Brief Psychiatric Rating Scale – Extended Version (BPRS- E; Ventura, Green, Shaner, & Liberman, 1993), Psychotic Symptom Rating Scales – Auditory Hallucinations Subscale (PSYRATS, Haddock, McCarron, Tarrier, Faragher, 1999), Belief About Voices Questionnaire – Revised (BAVQ-R, Chadwick, Lees & Birchwood, 2000), Post-traumatic Diagnostic ScaleTM (PDS; Foa, 1995), Evaluative Beliefs Scale (EBS; Chadwick and Trower, 1993), The Social Comparison Scale (SCS, Allan and Gilbert, 1995), Gudjonsson Suggestibility Scale (Gudjonsson, 1997a) Gudjonsson Compliance Scale (GCS; Gudjonsson, 1989), Wechsler Test of Adult Reading (WTAR; Wechsler, 2001), Wechsler Abbreviated Scale of Intelligence (WASI; Wechsler, 1999).

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

For the purposes of this sub-study the following variables were examined: CHRIS, BPRS, PSYRATS, BAVQ-R.

Command Hallucinations Rating and Interview Schedule (CHRIS; Andrew, Gray, Thomas and Snowden, 2009; Barton, 2006)

The CHRIS is a semi-structured interview specifically designed to provide the richness of data required to investigate the experience of command hallucinations and associated emotional and behavioural consequences.

The interview schedule is designed to elicit the following information:

- The presence and nature of command hallucinations
- The identity of the ‘command giver’
- The emotional and behavioural consequences of command hallucinations
- The degree of current and past compliance with the command (non-compliance, appeasement, partial compliance, or total compliance)
- Emotional consequences of compliance/non-compliance
- Consequences of compliance on topographical variables (e.g. volume, frequency of voices)
- Perceived consequences of compliance/non-compliance

The manual that accompanies the interview schedule provides polychotomous ratings for each of the key constructs: type of command hallucination (content), past behavioural

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

response, current behavioural response, function of behavioural response, and coping strategies. The reliability of these ratings is the subject of the current study. In order to facilitate reliable categorisation, operationalised criteria are provided for each component. Numerous clinical examples are given as a means of demonstrating the category and bringing the data to life.

A full copy of CHRIS can be found in appendix one.

Brief Psychiatric Rating Scale – Expanded Version (BPRS - E; Ventura, Green, Shaner, & Liberman, 1993)

The BPRS is a widely used measure that is designed to assess certain aspects of psychotic experiences. Various versions of the measure are available for use. The 18-item version was employed here.

The psychometric properties of the 18-item version of the BPRS have been demonstrated on many occasions (see Hedlund and Vieweg, 1980 for a comprehensive review) and the measure has consistently been found to be valid and reliable even when administered by individuals with minimal training.

Psychotic Symptom Rating Scales – Auditory Hallucinations Subscale (PSYRATS, Haddock, McCarron, Tarrier, Faragher, 1999).

The PSYRATS consists of two scales designed to rate auditory hallucinations and delusions. The present study will only employ the former scale. The auditory hallucinations subscale (AH) is an 11-item scale. The item pool taps the general symptom indices of frequency, duration, severity and intensity of distress and also symptom specific dimensions of controllability, volume, location, negative content,

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

beliefs about origin of voice, and disruption caused by the voice. Individuals are required to rate each item on a 5-point ordinal scale ranging from 0-4.

Preliminary studies have found the scale to have excellent psychometric properties with inter-rater reliability for each variable ranging from 0.788 – 0.9 (Haddock et al, 1999).

Belief About Voices Questionnaire – Revised (BAVQ-R, Chadwick, Lees & Birchwood, 2000).

The BAVQ- R is a 35-item measure of people's beliefs about auditory hallucinations and their emotional and behavioural reactions to them. There are three sub-scales relating to beliefs: malevolence (six items: e.g. "my voice is punishing me for something I have done"); benevolence (six items: e.g. "my voice wants to protect me"); and omnipotence (six items: e.g. my voice seems to know everything about me."). Two further sub-scales 'resistance' and 'engagement', measure emotional and behavioural relationships to auditory hallucinations. 'Resistance' has four items on emotion (e.g. "My voice frightens me") and five items on behaviour (e.g. "When I hear my voice I usually tell it to leave me alone."). 'Engagement' has four items on emotion (e.g. "My voice reassures me") and four on behaviour (e.g. "When I hear my voice usually I listen to it because I want to"). All responses are rated on a four-point ordinal scale: disagree (0); unsure (1); slightly agree (2); and strongly agree (3). The measure therefore assesses the degree of endorsement of items. The range of scores for each sub-scale is as follows: malevolence (0-18); benevolence (0-18); omnipotence (0-18); resistance (0-27); engagement (0-24).

The measure has been shown to have good psychometric properties, with the authors reporting uniformly high Cronbach's alpha scores for each sub-scale. Construct validity

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

is indicated by the strong relationships have been detected between the malevolence and resistance sub-scales, and the benevolence and engagement sub-scales with all other correlations between the sub-scales being strongly negative.

3.3 Procedure

All participants followed the procedure for the main study (see chapter four). Ten cases were randomly selected from the main sample in order to examine the inter-rater reliability of the CHRIS. All participants were required to provide written informed consent before completing the research interview. All were interviewed by the author (EA).

Four of the participants had agreed to have the interview recorded on a digital recording device and their interviews were transcribed for analysis. The responses from the remaining six participants had been recorded verbatim. These responses were typed and provided as vignettes for the raters. Unfortunately due to the very detailed nature of these transcripts, they are not included in this thesis as they would almost certainly breach the anonymity and confidentiality of the research participants.

In order to consider the reliability of the measure for the purposes of the thesis the author's responses were compared with rater one, her academic supervisor. It was felt that in addition to her existing clinical knowledge the supervisor would have an excellent working knowledge of the development and use of the CHRIS and it was therefore expected that there would be a high proportion of agreement between the ratings.

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

However, we were also interested in the way in which the measure fares when it is used by clinicians who are naïve to the tool. It was felt that by asking clinicians with experience of this client group but without experience or knowledge of the CHRIS to rate the transcripts we would obtain a good assessment of the usefulness of the manual and the definitions in terms of reliably categorising individual's responses. Two clinicians agreed to participate in this study (AH and CG). Both are highly experienced Clinical Psychologists with Doctorates in Clinical Psychology and greater than five years post-qualification experience.

All ratings were completed independently. Whilst all raters were familiar with the concept of command hallucinations, AH and CG received no prior training or instruction on the use of the CHRIS. They were provided with an introductory letter (see appendix two), the CHRIS manual and ten transcripts. All raters were asked to read the manual and the transcripts thoroughly before commencing any coding. They were also told to refer to the manual throughout the task. In cases reporting multiple commands, the raters were told to code each command individually.

All data were entered into SPSS for statistical analysis.

3.4 Results

3.4.1 Voice Characteristics

The data from the PSYRATS suggests that the eight of the participants were hearing voices on a frequent basis (at least once a day) with the remaining two participants hearing voices at least once a week. All participants reported that they were hearing

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

voices that were distressing and disruptive. The group as a whole reported predominantly negative beliefs about the voices they hear believing them to be malevolent in purpose (mean score 15.2, SD 3.65) and omnipotent (mean score 14.1, SD 3.04). As expected they reported predominantly resistant behavioural and emotional consequences (mean score 22.0, SD 2.54).

Based on the author (EA) only, 70% of the sample reported experiencing multiple commands. The proportion of individuals reporting each command is presented in Table 3.1.

Table 3.1: Number of sample reporting each command content (n = 10)

Content	Predominant Content	Past	Present
	N	N	n
Harm other	1	7	6
Harm self	5	7	6
Suicide	4	10	7

3.4.2 General Mental State

The mean BPRS score for the group was 46.6 ($SD = 11.45$). A score of 44 is thought to be representative of being ‘moderately ill’ (Hedlund and Viewig, 1980). The mean score on the hallucinations sub-scale was 4.4 ($SD = 1.17$) where 4 = moderate.

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

3.4.3 Reliability analysis

Reliability was assessed using Cohen's kappa for two raters. Reliability coefficients were calculated for each of the core components of the CHRIS: content, past and current behavioural response, function of behavioural response, and coping.

In order to calculate kappa, the frequency table must be symmetrical, that is the raters must have used all of the same categories (even if they didn't place the same response into the categories). There were two instances where it would have been impossible to calculate kappa as one rater had not used one particular category. In these instances, an arbitrary entry was made endorsing the category but not agreeing with the other raters in order that kappa could still be calculated but the proportion of agreement (and therefore the reliability coefficient) would not be inflated.

Coefficients in the range of 0.61 to 0.80 are accepted as indicating substantial agreement, while coefficients greater than 0.80 are considered to be (almost) perfect (Dunn, 1989). The reliability coefficients for each of the core components are presented below. Only one of the core components in one pair of raters returned a coefficient below 0.61.

3.4.3.1 Content

The CHRIS requires the content of the command to be placed in one of four categories: suicide, harm-self, harm other or innocuous. Together the raters identified 23 different commands amongst the ten participants. The kappa values for content are presented in table 3.2. The results demonstrate perfect agreement with raters agreeing on 100% of codes.

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

Table 3.2: Matrix of reliability coefficients for content

	NG	CG	AH
	K	K	K
LA	1.0	1.0	1.0
NG	-	1.0	1.0
CG	-	-	1.0
AH	-	-	-

3.4.3.2 Behavioural Response

Raters were asked to rate (where possible and applicable) the participants' past and present behaviour and to place the participants' responses in one of the following four categories: compliance, partial compliance, appeasement or non-compliance. Amongst the ten participants the full range of behavioural responses were endorsed.

Reliability coefficients for past and current behavioural responses are presented in tables 3.3 and 3.4 respectively.

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

Table 3.3: Matrix of reliability coefficients for past behavioural response

	LA	NG	CG	AH
		K	K	K
LA	-	0.73	0.778	0.777
NG		-	0.814	0.716
CG			-	0.924
AH				-

Table 3.4: Matrix of reliability coefficients for current behavioural response

	LA	NG	CG	AH
		K	K	K
LA	-	0.846	0.857	0.931
NG		-	0.838	0.844
CG			-	0.855
AH				-

3.4.3.3 Function of behaviour

This category refers to the apparent function served by the individual's behavioural response to the command hallucination. For example, if the individual is told to cut and in doing so notices that the voice is quiet for some time, the function of their response is to alter the characteristics of the voice. There are four possible functions on the CHRIS: to reduce emotional distress, to alter the characteristics of the voice (volume, frequency,

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

content etc), to avoid the consequences associated with non-compliance, or to avoid the consequences associated with any form of compliance.

The raters identified that the participants reported 29 functions falling into the four categories. Half of the sample reported multiple functions of their behaviour. Interestingly all of the raters noted that there appeared to be a further category that had not previously been identified/suggested: this was often in the cases of non-compliance where the individual had identified that complying with the voice in any way did not work, that is did not alter the content or nature of the voice in any way such that the individual felt there was “no point” in responding to it in the future. The raters felt that they were unable to place this response in any of the categories.

The reliability coefficients for the existing four categories are presented in table 3.5.

Table 3.5: Matrix of reliability coefficients for function of the behavioural response

	LA	NG	CG	AH
		K	K	K
LA	-	0.849	0.80	1.00
NG		-	0.527	0.827
CG			-	0.887
AH				-

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

3.4.3.4 Coping

This category refers to any coping strategies that the individual discussed in the interview. These strategies may be used to help the individual alter the voice or manage their feelings about the voice. It was noted by the raters that some participants described coping strategies that weren't necessarily adaptive or successful coping strategies.

Table 3.6 demonstrates that this category returned perfect inter-rater reliability.

Table 3.6: Matrix of reliability coefficients for coping strategies

	LA K	NG K	CG K	AH K
LA	-	1.0	1.0	1.0
NG		-	1.0	1.0
CG			-	1.0
AH				-

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

3.5 Discussion

This study has demonstrated excellent inter-rater reliability for use of the CHRIS manual with ten randomly selected participants who presented with a range of symptom characteristics and associated behavioural responses. The reliability coefficients returned by the analyses presented here were uniformly very high with two of the core components (content and coping) returning perfect reliability ($K = 1.0$).

These results demonstrate not just the reliability of the definitions and coding criteria but the quality of the transcripts used in this study indicates that the CHRIS is a useful tool for exploring the key constructs involved in an individual's emotional and behavioural response to command hallucinations. It appears able to elicit and structure pertinent information even when participants are moderately – severely unwell. A close examination of the transcripts (in which 70% described multiple commands and a full range of associated behaviour), suggests that these were by no means the most simple cases. Indeed they are highly representative of the main sample of command hallucinators.

The data discussed in this study highlight the true complexity of the phenomenon of command hallucinations and perhaps goes some way to accounting for the large degree of inconsistency across existing studies. It is clear that unless the experience is explored in detail key constructs can be misinterpreted or missed entirely.

By exploring command hallucinations at a phenomenological level in the initial development of this measure we have been able to develop clear guidelines for eliciting essential information and for categorising the resulting response. For example, our

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

research suggests that many individuals report hearing voices telling them to “cut” or “overdose”. It could easily be assumed that these commands are to harm and kill oneself respectively. Yet, our detailed interviews with individuals suggest that this is not always how such commands are interpreted. Some report that they believe they are being told to cut in order to kill themselves (for instance they believe they are being instructed to cut their throat with fatal consequences, or cut their wrists), whilst others believe that they are being instructed to cut ‘superficially’ or without suicidal intent. With regard to a command to overdose, some of our original sample believed that the function of the overdose was to get some sleep, to get away from it all without the intention of dying. This is where the CHRIS should improve the reliability in future studies. It informs the interviewer and the rater to elicit and attend to the individual’s perception of the command, and when coding a response to utilise all contextual information provided in the interview to assist them in assigning a category.

This study returned improved reliability compared with the pilot study conducted by Barton (2006). In the pilot study, it had proved difficult to reliably delineate between past and present behavioural response. Here, past behavioural response returned coefficients ranging from 0.73 – 0.92 (with the highest proportion of agreement occurring between the two clinicians). Present behavioural response returned coefficients ranging from 0.84 – 0.93. These results would suggest that the modifications to the guidelines for interviewing and the coding manual have been of benefit.

Only one coefficient returned unacceptable levels of reliability (0.57). This was achieved between two raters coding the function of the behavioural response. All other coefficients in this particular matrix were excellent suggesting that it was not the

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

definitions provided by the manual *per se* that were limited. On examining the raw data, it would seem that one particular case listed multiple functions of their behaviour. The two raters had each noticed separate functions and had listed none the same. Given the complexity of the data, it is of little surprise that there were some omissions. This does, however, highlight the need to attend to every piece of information rather than perhaps attending to the predominant behaviour, or the behaviour that causes the greatest concern. Of course, reliability is very important from a research perspective, but attending to all aspects of each component is essential from a clinical point of view too. For instance, basic scrutiny of the raw data used in this study shows that the individual with no coping strategies who reported multiple functions of their behavioural response was one of the individuals who always complied with every command. This had resulted in numerous lengthy (and expensive) hospital admissions. The extent to which the function of the behavioural response and the number of coping strategies are associated with compliance is explored in chapter six but it is likely that identifying every function and every coping strategy will be of the utmost importance in terms of formulating risk.

Aside from the excellent statistical results, the raters did raise a number of issues following their use of the CHRIS. All independent raters spoke about their difficulty, at times, in distinguishing between partial compliance and appeasement. This was reflected in one particular case example where two of the raters chose partial compliance and two chose appeasement. In the CHRIS, appeasement is operationalised as “when there appears to be a trade off with the voice that results in the client responding in such a way that the response reflects a shift from one type of command category to another (not necessarily less severe)”. Numerous examples are provided in the manual when, for

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

example, an individual is commanded to kill their neighbour but they harm themselves instead. The participants speak about the way in which they perceive that this is able to fulfil two functions: it keeps the voice happy so it quietens down a bit and it prevents the perceived consequences of fully complying with the voice (committing a crime and going to prison). The difficulty occurs when the process of appeasement appears to be present but there is no shift in category, for example one participant reported being told to cut but knowing that it upset his family to see the wounds, he took “too many” paracetamol instead “to keep the voice happy”. His intention was to harm himself rather than kill himself so according to the CHRIS guidelines, he would have been partially complying, yet the process he described was about appeasing the voice. Byrne and colleagues describe appeasement as “preparatory acts or gestures”, yet this almost ignores the cognitive process that appears to be implicit to appeasement.

The other issue that was reported was that raters were not sure whether to code maladaptive coping strategies such as use of alcohol as coping strategies and similarly whether to note coping strategies even if they did not work. Mackinnon *et al* (2004) note the importance of coping strategies (even if they are not successful) in helping individuals to resist commands and perhaps in coping with the burden of a very distressing symptom. It seems then, that coping strategies should be included whether they are healthy or adaptive, successful or unsuccessful. If they are to be used for the purposes of clinical formulation or intervention, the nature of the strategy can be noted. What is important is that the individual has some resources that help them to resist the commands, even if it is only momentarily.

- The Command Hallucinations Rating and Interview Schedule (CHRIS)

There are some limitations to the measure as a whole. Of the ten participants randomly selected to be included in this analysis, none spontaneously described any beliefs about the voices; all were able to articulate how they felt in relation to the voices. The interview element of the CHRIS consists of a series of open ended questions, however Mackinnon *et al* (2004) found that individuals reported using more types of coping strategies when they were provided with a circumscribed list of coping strategies. It may be then that, in relying on self-report, the CHRIS does not identify all coping strategies that are used.

Many professionals are involved in the assessment of risk, some who have extensive training in the exploration of psychopathology and others who have very little training (or indeed experience). For this reason we decided to rate the transcripts in this study without providing training on command hallucinations in general and on this measure specifically. It is clear from our results that this does not affect the reliability of this measure when it is used by clinicians with comprehensive professional training. We are yet to establish whether reliability is maintained when the measure is used by individuals with a lower degree of training.

Overall, the CHRIS is a tool that appears to facilitate the collection and reliable categorisation of information that is pertinent to assessing compliance with command hallucinations. The inter-rater reliability described here is comparable to that of other popular measures in the field of auditory hallucinations (see for example, Garety *et al*, 1999), and supports the use of this as a standardised measure of command hallucinations in the current large scale study. It also suggests that the CHRIS holds a great deal of potential for development for publication and wide spread use.

Chapter 4 - METHODOLOGY

This chapter presents the methodology for the main study - the examination of the factors underpinning compliance with command hallucinations.

4.1 Design

The study was based on a factorial design with both retrospective and prospective components (individuals were asked to reflect back on previous occasions of compliance, provide information on their current mental state, and those with current command hallucinations were re-assessed at two future time points) and a range of between subjects factors including individual (demographic characteristics, personality variables etc.) and hallucinatory characteristics (topography of voices, content, beliefs about voices etc.). The longitudinal component is in accordance with the conclusions of Junginger (1996): *"The true incidence of violent psychotic action cannot be determined by retrospective studies; only prospective studies can do that."*

4.2 Participants

Previous research suggests that, unless they are asked explicitly, individuals do not always report the content of the voices they hear which can result in the under detection of command hallucinations (Rogers, Gillis, Turner and Frise-Smith, 1990; Zisook, Byrd, Kuck & Jeste, 1995). For this reason we asked mental health professionals to discuss the study with anyone that reported hearing voices, regardless of the content.

- Methodology

Participants were recruited from six trusts across South Wales: Gwent Healthcare NHS Trust (now Aneurin Bevan Local Health Board), Pontypridd and Rhondda NHS Trust (now Cwm Taf NHS Trust), North Glamorgan NHS Trust (now Cwm Taf NHS Trust), Cardiff and Vale NHS Trust, Bro Morgannwg NHS Trust and Pembrokeshire and Derwen NHS Trust. One hundred and three individuals were referred in to the study and were invited to participate. Of those that did not participate, six (5.8%) individuals eventually declined the offer to participate, nine (8.7%) individuals reported they were no longer hearing or had never heard voices, one person had an organic aetiology for the voices, one heard animal noises only and therefore would not have been able to complete many of the 'voice' measures, one was below 16 years of age, and nine (8.7%) did not reply. In two cases (2%), the care co-ordinator or the RMO did not agree to the referral. The remaining 74 participated in the full study. Due to data protection, no further information is available on those that did not participate.

All participants were between 18 and 65 years of age, were able to provide informed consent and reported having heard voices in the month prior to the interview. At this stage, individuals were excluded from the study if they did not have a designated care co-ordinator, there was any evidence of an organic aetiology for the voices (e.g. Parkinson's Disease), or if they were acutely distressed at the time of interview such that their well-being would have been seriously compromised by participating.

- Methodology

For the main research question, the final sample ($n = 74$) were assigned to one of two groups based on the content of the voices in the month prior to interview: command hallucinations (CH) or general hallucinations (GH; voices that do not issue commands). It was felt that the GH group would provide a useful comparison group as it could be argued that any observed 'risk' behaviour could reflect the general experience of hearing voices rather than the specific experience of command hallucinations. For example, an individual may cut themselves just because the voice or voices that they hear are incessant rather than because the voice tells them to. Recruiting individuals that hear voices that do not issue commands helped us to control for this. It was also felt that the inclusion of this group would permit an examination of the differences between individuals that experience command hallucinations and those that experience general hallucinations.

Half of the GH group reported having heard commands in the past (25% harm other, 33% suicide and 8.3% self-harm) and seven (58.3%) of the group reported currently hearing innocuous commands such as "make the tea", "have a bath".

Diagnoses for participants were obtained by asking the individual themselves and then confirming this by checking the most recent diagnosis recorded in the case notes. Only diagnoses provided by a Consultant Psychiatrist were recorded. Where information was not available in the case notes, the Consultant was contacted directly and asked to provide a diagnosis.

The proportion of individuals in each diagnostic category is presented in Table 4.1.

Table 4.1: Frequency of diagnoses in CH and GH groups

Diagnosis	GH	CH
	n (%)	n (%)
Schizophrenia	14 (53.8)	18 (37.5)
Schizoaffective	2 (7.7)	4 (8.3)
Personality disorder	0 (0.0)	8 (16.7)
Psychotic depression	3 (11.5)	12 (25.0)
Dissociative Identity Disorder	0 (0.0)	1 (2.1)
Psychosis NOS	4 (15.4)	2 (4.2)
Bipolar Affective Disorder	2 (7.7)	1 (2.1)
Other	1 (3.8)	2 (4.2)

There was no significant difference between the groups on any of the demographic variables. In terms of the GH group, the mean age of the group was 34.7 years ($SD = 12.25$), the mean length of time hearing voices was 7.54 years ($SD = 7.02$) and the mean age at first contact with services was 25.81 years ($SD = 12.78$). Sixty one per cent of the GH group were male and 53.8% were educated to GCSE level and above. The group were recruited from community outpatients (50%), community inpatient facilities (38.5%) and forensic inpatient facilities (11.5%).

In the CH group the mean age was 38.08 years ($SD = 10.79$), the mean length of time hearing voices was 9.25 years ($SD = 8.40$) and the mean age at first contact with services was 26.46 years ($SD = 9.06$). Forty four per cent of the CH group were male and 35.4% were educated to GCSE level and above. Again the group came from a mixture of

- Methodology

settings, with 56.3% from community outpatients, 39.6% from community inpatient facilities and 4.2% from forensic inpatient facilities.

All participants described themselves as White British ethnic origin with the exception of two individuals in the CH group one of whom was of Pakistani descent and the other of Black African descent.

4.3 Measures

4.3.1 Current Mental State

Brief Psychiatric Rating Scale – expanded version (BPRS - E; Ventura, Green, Shaner, & Liberman, 1993)

Chapter two highlighted the concurrent symptoms that may contribute towards violence in individuals with command hallucinations. The most consistent finding has been the presence of congruent delusions. Some studies have also suggested that individuals with command hallucinations are generally more unwell. It was therefore essential to incorporate a measure of general mental state or severity of illness in exploring differences between the groups.

The BPRS is a widely used measure that is designed to assess certain aspects of psychotic experiences and general mental state. Various versions of the measure are available for use. The 24-item version (BPRS – E) was employed here. The items correspond to the symptoms typically associated with psychosis and include ‘positive’ symptoms such as hallucinations, delusions and suspiciousness and ‘negative’ symptoms such as blunted affect and emotional withdrawal. The scale also has items pertaining to depression,

- Methodology

anxiety and guilt. In a clinical interview format the individual is asked about the presence or absence of each symptom dimension in the two weeks prior to the interview. The final eight items are based on observation of behaviour.

Each item is rated on a 7-point likert scale ranging from not present (score = 1) to extremely severe (score = 7) resulting in a total score in the ranging from 24 - 168.

The psychometric properties of the 24-item version of the BPRS have been demonstrated on many occasions and the measure has consistently been found to be valid and reliable even when administered by individuals with minimal training. The measure was chosen as it is brief and is less intrusive than some other symptom measures (e.g. PANSS).

Composite scores were used to condense the number of variables that were being analysed. The BPRS and the BPRS-E have been factor analysed many times. In this study, we drew upon the guidelines provided by Velligan, Prihoda, Dennehy, Biggs, Shores-Wilson, Crismon, Rush, Miler, Suppes, Trivedi, Kasher, Witte, Oprac, Carmody, Chiles and Shon (2005) which suggest a four factor model that has been found to be consistent over time, across diagnosis, phase of illness, age, gender, ethnicity and level of education. For the purposes of brevity we have relabelled the anxiety/depression domain as affect.

- Methodology

Composite

Individual sub-scale

Affect

Somatic Concern

Anxiety

Depression

Suicidality

Guilt

Hostility

Suspiciousness

Activation

Elevated mood

Grandiosity

Bizarre Behaviour

Conceptual Disorganisation

Tension

Excitement

Distraction

Hyperactivity

Mannerisms and Posturing

Retardation

Disorganisation

Blunted affect

Emotional withdrawal

Motor retardation

Uncooperativeness

Excitement

Psychosis

Grandiosity

Suspiciousness

Hallucinations

Unusual Thoughts

Bizarre Behaviour

Conceptual Disorganisation

- Methodology

4.3.2 Assessment of Voices

Psychotic Symptom Rating Scales – Auditory Hallucinations Subscale (PSYRATS, Haddock, McCarron, Tarrier, Faragher, 1999).

The PSYRATS consists of two scales designed to rate auditory hallucinations and delusions. The present study employed the hallucinations scale only. The auditory hallucinations subscale (AH) is an 11-item scale. The item pool taps the general symptom indices of frequency, duration, severity and intensity of distress and also symptom specific dimensions of controllability, volume, location, negative content, beliefs about origin of voice, and disruption caused by the voice. Individuals are required to rate each item on a 5-point ordinal scale ranging from 0-4.

Preliminary studies have found the scale to have excellent psychometric properties with inter-rater reliability for each variable ranging from 0.788 – 0.9 (Haddock *et al*, 1999).

Belief About Voices Questionnaire – Revised (BAVQ-R, Chadwick, Lees & Birchwood, 2000).

The BAVQ- R is a 35-item measure of people's beliefs about auditory hallucinations and their emotional and behavioural reactions to them. There are three sub-scales relating to beliefs: malevolence (six items: e.g. "my voice is punishing me for something I have done"); benevolence (six items: e.g. "my voice wants to protect me"); and omnipotence (six items: e.g. my voice seems to know everything about me."). Two further sub-scales 'resistance' and 'engagement', measure emotional and behavioural responses to auditory hallucinations. 'Resistance' has four items on emotion (e.g. "My voice frightens me") and five items on behaviour (e.g. "When I hear my voice I usually tell it to leave me



- Methodology

alone.”). ‘Engagement’ has four items on emotion (e.g. “My voice reassures me”) and four on behaviour (e.g. “When I hear my voice usually I listen to it because I want to”). All responses are rated on a four-point ordinal scale: disagree (0); unsure (1); slightly agree (2); and strongly agree (3). The measure therefore assesses the degree of endorsement of items. The range of scores for each sub-scale is as follows: malevolence (0-18); benevolence (0-18); omnipotence (0-18); resistance (0-27); engagement (0-24).

Individuals who reported hearing more than one voice were asked to try to complete the questionnaire for the predominant voice first. In instances where the individual reported hearing multiple voices and the individual was able to discriminate their beliefs about the different sets of voices, the BAVQ-R was administered for each set of voices.

The BAVQ-R has been shown to have good psychometric properties, with the authors reporting uniformly high Cronbach’s alpha scores for each sub-scale. Construct validity is indicated by the strong relationships that have been detected between the malevolence and resistance sub-scales, and the benevolence and engagement sub-scales with all other correlations between the sub-scales being strongly negative.

The measure is now commonly used in both research and clinical practice.

Command Hallucinations Rating and Interview Schedule (CHRIS; Andrew, Gray, Thomas, & Snowden, 2009)

The CHRIS is a semi-structured interview designed specifically to provide the richness of data required to investigate the research questions involved in this study. The tool was

- Methodology

designed in the absence of any other standardised measure which examines the factors that are particularly pertinent to understanding compliance with command hallucinations.

The interview schedule is designed to elicit the following information:

- The presence and nature of command hallucinations
- The identity of the 'command giver'
- The emotional and behavioural consequences of command hallucinations
- The degree of current and past compliance with the command (non-compliance, appeasement, partial compliance, or total compliance)
- Emotional consequences of compliance/non-compliance
- Consequences of compliance on topographical variables (e.g. volume, frequency of voices)
- Perceived consequences of compliance/non-compliance
- Coping strategies

The individual's responses to the interview were recorded either verbatim, or in instances where the individual permitted, electronically on a voice recording device.

Clear guidelines were developed and included in the administration manual with regard to managing cases where multiple commands were reported by the voice hearer. With regard to multiple content (e.g. self-harm and harm other), as much detail as possible was

- Methodology

sought about respective contents and the corresponding behaviours. A coding sheet was then completed for each separate voice content. Where multiple voices were reported (e.g. "I hear hundreds of voices", "I hear my mum, my sister, the man that abused me"), the content of the voices were analysed and if the content was interpreted in the same way the interview was conducted as if it were one voice.

For the purposes of this research five key concepts were elicited from the interviews: content of commands, past (behaviour associated with the command hallucination up to one month before the research interview) and present (within one month of research interview) behavioural response to each command hallucination, the function of the behavioural response, and any coping strategies that were mentioned in the interview.

The operationalised criteria for all of the concepts are included in the manual in the appendix. In terms of content, voices were classified as either harm-other, suicide, self-harm or innocuous. Associated behaviour could be coded as compliance, partial compliance, appeasement or non-compliance with a behaviour being endorsed for each separate voice content. With regard to the function of the behavioural response, participants often mentioned numerous functions. All of those mentioned were categorised, but in terms of the main analysis the first function that was mentioned was entered in the analysis unless the participant indicated that it was not the predominant or primary function. Similarly with coping strategies, many reported multiple strategies (even if the strategies were maladaptive). All were recorded and categorised but the first or primary coping strategy was used in the analysis.

- Methodology

Preliminary findings (see chapter three) suggest that CHRIS is able to elicit sufficient information to explore the factors involved in the compliance cycle and that such information can be reliably categorised (K ranging from 0.56 – 1.0).

4.3.3 Trauma

Post-traumatic Diagnostic ScaleTM (PDS; Foa, 1995)

Recent research has identified a significant association between a history of traumatic life events and the experience of hearing voices and that the degree to which the trauma is resolved is a significant predictor of beliefs about voices (Andrew, Gray and Snowden, 2008). Furthermore, Read (2003) notes a particularly strong relationship between the incidence of traumatic life events (specifically a history of sexual or physical abuse in childhood or adulthood) and hearing command hallucinations. The inclusion of the PDS will help us collect further information about this potentially important relationship.

The PDS is a 49-item, 4-part self-report inventory. The PDS is particularly useful as an aid to diagnosing PTSD although it cannot be used in isolation to provide a diagnosis. It is a popular measure that taps all the main components listed in the DSM-IV criteria for PTSD. The measure covers the following traumatic events: Serious accident, natural disaster, non-sexual assault by a family member, non-sexual assault by a stranger, sexual assault by a family member, sexual assault by a stranger, military combat or war zone, precocious sexual contact (under the age of 18 with someone 5 or more years older), imprisonment, torture, life-threatening illness, any other traumatic event.

- Methodology

The PDS emphasises diagnostic and severity functions and includes measures of trauma exposure, trauma appraisal (e g “during the incident did you feel terrified?”, “did you feel that your life was in danger?”), symptom severity rating, chronicity of symptoms (acute/chronic/delayed onset), and level of impairment of functioning (e g “do the difficulties you have described interfere with your ability to work?”).

The measure was validated on an adult population (18 – 65). The normative sample was drawn from a number of treatment and research centres that have a high frequency of PTSD among their patient populations ($n = 243$). It should be noted that individuals with psychosis were excluded from the normative sample.

The PDS has been shown to have high test-retest reliability (Pearson coefficient .83), and high internal consistency (Cronbach’s alpha of .92). In terms of validity, the PDS was compared with the Structured Clinical Interview for DSM-IV Disorders (SCID; First *et al*, 1996) and was found to have a good overall level of diagnostic agreement. Higher scores on symptom severity have been found to be associated with greater depression scores on the Beck Depression inventory (BDI, Beck *et al*, 1996), higher state and trait anxiety on the State-Trait Anxiety Inventory, and higher scores on the Impact of Event Scale (Horowitz, Wilner, and Alvarez, 1979) Intrusion and Avoidance scales (see Foa, 1995 for all data).

- Methodology

4.3.4 Interpersonal factors

Evaluative Beliefs Scale (EBS; Chadwick and Trower, 1993)

The EBS assesses the individual's beliefs about their interpersonal status. Within the questionnaire there are three sub-scales each consisting of six items on each person evaluation, that is: other-self (how the person believes they are viewed by others); self-self (How the person sees themselves); and self-other (how the person views other people).

The participant is required to rate on a five-point likert scale the degree to which they agree with each statement with '1' representing 'disagree strongly' and '5' representing 'agree strongly'.

A factor analysis of this scale (see Fox *et al*, 2004) revealed two main factors: inferiority and superiority. The inferiority scale consists of 11 items and the superiority scale consists of five items. Factor scores are obtained by totalling the items giving a score for inferiority between 11 and 55, and for superiority between 5 and 25.

The scale provides the opportunity to operationalise the notion of interpersonal schema.

The Social Comparison Scale (SCS, Allan and Gilbert, 1995)

The SCS is an 11-item semantic differential type scale that measures the individual's judgement of their social rank (e.g. inferior-superior; incompetent-competent; untalented-more talented etc), relative attractiveness (e.g. unlikeable-likeable; undesirable – more desirable), and group fit (left out-accepted; different-same). Higher scores on this scale

- Methodology

represent higher self-perceived ranking. The authors of the scale report a Cronbach's alpha coefficient of .91 in a sample of college students ($n = 263$), and of 0.88 in a sample of individuals with "non-psychotic depression and anxiety disorders" (Allan and Gilbert, 1995, p294).

Gudjonsson Suggestibility Scale (GSS; Gudjonsson, 1991)

The GSS 1 and its parallel form GSS 2 were developed for research, forensic and clinical applications. They provide a reliable measure of an individual's ability to recall auditory information from memory both immediately after presentation and following a delay, and also a measure of 'interrogative suggestibility'. This latter variable is comprised of two components: 'yield' and 'shift'.

The scales have been standardised and are recommended for use with forensic populations, mentally disordered offenders and other clinical populations.

Administration of the scale consists of the individual being read a short story before being asked to recall as much information as possible from the story. Following immediate recall the individual is asked 20 questions about the story, 15 of which are leading questions. These 15 questions are designed to assess the degree to which an individual 'yields' to suggestive questions. After answering all 20 questions the individual is firmly told that they have made a number of errors and to try to be more accurate. Their new responses provide the 'shift' score. The total suggestibility score is the sum total of the 'yield' and 'shift' scores.

- Methodology

The interviewer is instructed to provide very negative feedback often in quite a hostile manner in order to create the interpersonal pressure and sense of authority that is thought to evoke suggestibility. Given the nature of the population in the current study, it was felt that this approach would be unethical and could compromise individual's mental state even further. Negative feedback was given and was given in a consistent manner to all participants but the magnitude of this negativity was modified.

The GSS enjoys good psychometric properties (see Grisso, 1986) including face and construct validity. Studies have demonstrated that the setting in which the interview is conducted (forensic or non-forensic) does not significantly influence suggestibility scores.

Gudjonsson Compliance Scale (GCS; Gudjonsson, 1989)

In contrast to the GSS the GCS is a brief self-report tool that measures the concept of compliance. Within the scale 'compliance' is comprised of an eagerness to please and avoidance of conflict and confrontation.

The scale consists of 20 items to which the individual has to provide a true or false response. In terms of its psychometric properties, Gudjonsson (1989) found a reasonable Cronbach's alpha score (0.71) and a high level of test-retest reliability ($r = 0.88$, $p < 0.001$). The scales construct validity is said to be supported by its ability to discriminate between various target groups.

- Methodology

4.3.5 Cognitive Abilities

Wechsler Abbreviated Scale of Intelligence (WASI; Wechsler, 1999)

The WASI is a short, reliable measure of intelligence designed for use in both clinical and research settings. It is individually administered and is designed for use with individuals aged between 6 and 89 years old. The WASI is nationally standardised (n = 1,145) and yields the three traditional Verbal, Performance and Full-Scale IQ scores. The scale consists of four sub-tests: vocabulary, block design, similarities and matrix reasoning. Administration of all four sub-tests is a means of quickly estimating an individual's current verbal, non-verbal and general cognitive functioning in approximately 30 minutes. The WASI was incorporated in order to control for any effects of IQ in the event of significant differences on suggestibility and compliance.

4.4 Procedure

4.4.1 Ethical Approval

Ethical approval for a multi-centre research study was obtained from South East Wales Research Ethics Committee. A copy of the approval letter can be found in appendix three.

4.4.2 Recruitment

In order to facilitate recruitment, the aims of the study were presented to large groups of mental health professionals in numerous clinical contexts across South Wales. These

- Methodology

groups included community mental health teams, community rehabilitation teams, assertive outreach teams, community inpatient services and day hospitals, low and medium secure forensic inpatient services. Two Clozapine clinics were also accessed (although only one [Cwm Taf NHS Trust] actually resulted in any referrals).

Health professionals were asked to describe the study to any individuals under their care who had reported hearing voices. Professionals were provided with brief information leaflet (appendix four) to give to potential participants. If the individual consented, their details were forwarded to the researcher (EA) using the participant details form (appendix five) to arrange a preliminary meeting where the study could be explained in more detail and informed consent sought.

There was also the possibility of self-referral into the study. This was achieved through leaving posters and brief information leaflets in outpatient waiting rooms and service user forums (such as MIND).

4.4.3 Interview

In the initial meeting, verbal and written information about the nature and process of the study was provided to all potential participants. In three cases, the individual was unable to read the information letter due to significant limitations in literacy ability. In such instances, the researcher read the information letter verbatim.

If the individual agreed to participate, they were asked to provide written informed consent (appendix six) and to indicate their permission for the researcher to access their medical records and other case notes.

- Methodology

They then completed all measures in the order outlined above. If the individual felt fatigued by the interview process the session was terminated and was completed within seven days of the first interview.

All research participants were provided with a thorough verbal and written debrief before the interview was terminated. The written debrief is provided in appendix seven. However, briefly, it provides information on why psychological research into the experience of hearing voices is being conducted. The information discusses alternative explanations of hallucinations and where the individual could seek help. Basic, practical coping strategies were also provided.

All participants were paid £10 for the initial research interview and those that were invited to participate in the longitudinal element of the study received £5 for all subsequent interviews.

4.4.4 Follow-Up

All of those individuals who reported hearing command hallucinations instructing them to harm themselves or others in any way were asked to participate in two further research interviews one month after the initial interview and six months after the initial interview. Those who reported innocuous only commands were not followed up as it was felt that it would be impossible in all cases to determine whether the day to day behaviour that was being instructed (e.g. make a cup of tea, have a bath) were being complied with or were just being performed as usual (that is under the person's own free will).

- Methodology

The follow-up interview consisted of the individual providing feedback on their general well-being over the follow-up period and detailing any changes in their care package. They then completed the violence aggression scale (see appendix eight). This measure is essentially a checklist of risk behaviours including verbal aggression, aggression against property, physical aggression, sexual aggression, self-harm, suicide and sexual vulnerability. Within each category of risk, behaviours are organised hierarchically ranging from low to high risk. Participants were asked to indicate which of the behaviours they had engaged in during the follow-up period and whether they had performed those behaviours once or repeatedly. Once they had provided their responses, they were asked whether their behaviour was associated with command hallucinations.

In order to triangulate the follow-up data, an identical version of the violence aggression scale was sent to the individual's keyworker or care co-ordinator to complete. In cases where there was a discrepancy between the two sources of information the highest level of risk indicated was taken for analysis.

4.5 Analysis

The data were analysed using SPSS 12.0 for Windows. All interval data variables were tested for normality both visually using Q-Q plots and statistically using the Kolmogorov-Smirnov test. Normality of data is discussed in the relevant analyses. Where data were not normally distributed nonparametric tests were used to test for group differences and relationships between the variables (Mann-Whitney U and Spearman's

- Methodology

Rho). Bonferroni's correction for multiple comparisons was not employed here as it would be too conservative for this small sample study.

Results

Chapter 5 RESULTS

5.1 Introduction to chapter

As stated in the previous chapter, as part of the design of the current study, data were collected from any individual who had reported hearing a voice – regardless of voice content – in the month prior to the research interview. The aim of this recruitment strategy was to maximise the detection of command hallucinations.

Amongst all of those recruited ($n = 74$) we were able to distinguish four sub-groups that would lend themselves to detailed analysis: those that reported having never heard command hallucinations (**never heard commands**); those that reported only ever having heard innocuous commands (**never a dangerous command**; e.g. instructions such as “stand up”, “have a bath”, “look down the toilet”; instructions that were void of any material that could be interpreted as a command to harm themselves or someone else either verbally or physically); those that reported having heard dangerous commands (commands that instructed self-harm, suicide or physical or verbal aggression or violence towards others) at some point (**ever a dangerous command**); and those that reported having heard a dangerous command within the month prior to the research interview (**currently a dangerous command**). The demographic characteristics of each of these groups are displayed in table 5.1.

Results

Table 5.1: Demographic details of the four groups.

Variable		Never N = 13	Never Dangerous N = 7	Ever dangerous N = 54	Currently Dangerous N = 49
Gender (% male)		46.2	85.7	46.3	44.9
Age (mean, SD)		32.9 (10.8)	35.1 (13.4)	38.1 (11.2)	37.9 (10.8)
Marital Status (% married)		23.1	42.9	42.6	40.8
Diagnosis n (%)	Schizophrenia	4 (30.8)	4 (57.1)	24 (44.4)	19 (38.8)
	Schizoaffective	2 (15.4)	1 (14.3)	3 (5.6)	4 (8.2)
	Personality Disorder	-	-	8 (14.8)	8 (16.3)
	Psychotic Depression	2 (15.4)	1 (14.3)	12 (22.2)	12 (24.5)
	Psychosis NOS	2 (15.4)	1 (14.3)	3 (5.6)	2 (4.1)
	Dissociative Identity	-	-	1 (1.9)	1 (2.0)
	Disorder	-	-	1 (1.9)	1 (2.0)
	Bipolar Affective Disorder	2 (15.4)	-	1 (1.9)	1 (2.0)
	Other	1 (7.7)	-	2 (3.7)	2 (4.1)
SES	Skilled	-	-	2 (3.8)	1 (2.0)
	Partly skilled	-	-	-	-
	Unskilled	1 (7.7)	1 (14.3)	4 (7.4)	3 (6.1)
	Unemployed	8 (61.5)	4 (57.1)	44 (81.5)	40 (81.6)
Education	Inactive	4 (30.8)	2 (28.6)	4 (7.4)	5 (10.2)
	Degree	-	-	3 (5.6)	1 (2.0)
	Diploma	1 (7.7)	-	-	-
	A'Level	2 (15.4)	2 (28.6)	1 (1.9)	1 (2.0)
	GCSE	6 (46.2)	2 (28.6)	14 (25.9)	15 (30.6)
	Other	1 (7.7)	1 (14.3)	6 (11.1)	7 (14.3)
	None	3 (23.1)	2 (28.6)	30 (55.6)	25 (51.0)

- none in this category

Results

Whilst the main aim of this study was to explore the factors underpinning compliance with command hallucinations to harm self or others, the other groups that were naturally generated as part of the recruitment strategy are also of interest in terms of considering some of the factors that may contribute towards the development of the distressing phenomena of command hallucinations. The results for this study will therefore be presented as a series of sub-studies which are respectively based on the following between-group analyses:

- What distinguishes those that hear command hallucinations from those that don't?
- Of those that report command hallucinations, what distinguishes those that hear commands to harm themselves from those that hear commands to harm others?
- Of those that report currently experiencing command hallucinations (within the month prior to interview) what factors distinguish those that comply with command from those that do not comply?

The final analysis concerns the prediction of compliance with commands to harm self or others.

5.2 What distinguishes those that hear commands from those that don't?

5.2.1 Introduction to hypotheses

Rather than conduct an exploratory analysis of all the variables that have been collected, the following analyses are theory driven and are based on replicating or refining previous findings in the area. Therefore, unless otherwise stated, all hypotheses are one tailed.

Results

The literature reviewed in chapter two suggests that there could be a number of factors that distinguish those that report, or are reported, to be hearing command hallucinations from those that report hearing voices of a more 'generic' nature. Read, Agar, Argyle and Volkmar, (2003) found that those individuals that reported a history of childhood sexual abuse were significantly more likely to hear command hallucinations instructing them to harm or kill themselves than those who did not report such abuse. Question one sought to replicate this finding based on self-report rather than case-note data.

The way in which a trauma history is associated with command hallucinations is not yet known. If a trauma history increases the vulnerability towards developing command hallucinations in general, we would expect to find a significantly greater proportion of those that had ever heard command hallucinations reporting traumatic life events or reporting significantly more types of traumatic life events compared with those that have never heard a command hallucination. If trauma is more of a maintaining factor (that is that persistent trauma symptoms either contribute towards or exacerbate voice content or beliefs about voices) we would expect to find few significant differences between those that had ever heard commands and those that had never heard commands but we would expect to find significantly higher levels of trauma symptoms amongst those that are currently hearing command hallucinations.

Read *et al* (2003) appear to suggest it is the nature of the trauma (although they did not systematically collect data on other types of traumatic life event), in which case we

Results

would predict that a significantly greater proportion of those that had ever heard a command would report a history of sexual abuse.

Previous research has also suggested that the extent to which the trauma continues to affect the individual (that is the degree to which the individual continues to experience re-experiencing, avoidance and hyperarousal symptoms) is significantly associated with voice characteristics and beliefs about voices (Andrew, Gray and Snowden, 2008), in which case we would expect those that report command hallucinations to report significantly more severe trauma symptoms (re-experiencing, avoidance and hyperarousal symptoms) than those that do not report command hallucinations. It may be, however, that the level of trauma symptomatology is related to current voice activity in which case we would only expect to see this relationship in the group that report currently hearing command hallucinations (this will be explored in question two).

5.2.2 Participants

There were two groups available for this analysis: those that denied ever having experienced any form of command hallucination ($n = 13$) and those that reported having experienced a dangerous or severe command at some point in their voice hearing history ($n = 54$). These two groups are clearly defined and are easily compared to the existing literature. The third group is perhaps more difficult to place. This group contains individuals who report hearing or having heard commands of an innocuous nature only ($n = 7$). There is little in the existing literature pertaining to such a group, presumably because, if not asked explicitly, they do not volunteer this information and therefore go undetected or are thought to be of little interest in a study of risk and therefore go

Results

unexamined. The main analysis in this section will be based on the two clearly defined groups (never heard a command versus ever heard a dangerous command). However, the characteristics of the third group (never heard a dangerous command) will be explored in order to contribute to a theoretical question: is trauma or the psychological sequelae of trauma related to the experience of command hallucinations in general or to command hallucinations of a dangerous nature (that is commanding to harm self or others).

The demographic details of these two groups are subsumed in Table one above.

5.2.3 Results

The data produced for the variables of interest in this question violated the assumptions underlying parametric analyses, therefore unless otherwise stated all analyses are non-parametric. Hedges g was utilised to calculate effect size as this is felt to be more accurate when sample sizes are unequal.

Despite others (Bucher *et al*, 2007) reporting that women are more likely to report command hallucinations, we found no difference in gender between the groups ($\chi^2 (1, 67) = .993, p = 1.00$).

Although a slightly greater proportion of the ever dangerous group reported having experienced sexual abuse (53.7% compared to 38.5% of the never heard commands group), we failed to replicate the finding that significantly more individuals who report dangerous command hallucinations report being sexually abused in childhood or adulthood ($\chi^2 (1, 67) = .974, p = .162$). We also failed to detect a relationship when we examined the content of the command in more detail. That is, those individuals that

Results

reported a history of hearing commands to harm themselves in the form of suicide or self-harm, were no more likely to report sexual abuse than those who did not report a history of such commands, ($X^2 (1, 67) = 2.52, p = 0.055$ and $X^2 (1, 67) = .387, p = .267$ respectively) although for the group with suicidal commands this was approaching significance.

Table 5.2 presents the findings relating to the length of time hearing voices and the trauma variables. They demonstrate a notable trend towards the ever dangerous group reporting, on average, a greater number of trauma symptoms of greater severity than those that had never heard any form of command. Indeed, this finding was true of all the trauma symptoms (re-experiencing, avoidance and hyperarousal). These findings reached statistical significance on three variables: severity of re-experiencing, number of hyperarousal symptoms and severity of hyperarousal symptoms. Accordingly, a greater proportion of the 'ever dangerous' group met criteria for a diagnosis of Post-Traumatic Stress Disorder (PTSD) (45% vs 38.5%), although again this did not approach statistical significance ($X^2 (1, 67) = .153, p = .348$).

There is also a trend towards the command hallucinations group having experienced voices for a longer period of time.

As can be seen in Table 5.2, the effect sizes of these findings vary from small (.25) to large (.65). Power analyses suggest that in order to detect a 'small' effect ($ES = 0.3$) would have required 76 – 80 participants in each group.

Results

Table 5.2: Results for between group comparison of never heard vs ever heard a dangerous command

Variable		M (median)	SD	Mean rank	U	p	Effect size
Length of time hearing voices¹	Never	5.85 (2)	7.06	24.96	233	.06	.65
	Ever	9.54 (8)	8.40	36.18			
Number of types of trauma¹	Never	1.46 (1)	1.61	27.92	272	.20	.40
	Ever	2.13 (2)	1.87	35.46			
Number re- experiencing	Never	1.38 (0)	1.85	27.54	267	.82	.36
	Ever	2.13 (3)	2.16	35.56			
Severity re- experiencing	Never	2.23 (0)	3.26	26.27	250	.05	.48
	Ever	4.93 (3)	5.10	35.86			
Number avoidance	Never	2.23 (1)	2.71	29.42	281	.16	.25
	Ever	2.98 (2)	2.87	35.10			
Severity Avoidance	Never	4.77 (1)	6.47	29.38	291	.16	.28
	Ever	7.04 (2)	7.62	35.11			
Number hyperarousal	Never	1.38 (0)	1.81	26.69	256	.05	.45
	Ever	2.41 (3)	2.14	35.76			
Severity hyperarousal	Never	2.77 (0)	4.02	26.31	251	.05	.48
	Ever	5.85 (4)	5.80	35.85			

¹ Two tailed hypothesis, never n = 13; ever n = 54

Exploration of innocuous only group

As mentioned above, there was a small group of individuals who reported hearing command hallucinations of innocuous content only (never dangerous). If trauma symptoms are indeed related to the a vulnerability to dangerous content and or interpreting voices to be commanding dangerous acts, we would hypothesise that this

Results

group will be intermediate to the 'never heard commands' and 'ever dangerous commands' groups.

All of the above analyses were repeated using all three groups (never, never dangerous and ever dangerous). As a result of the ill-matched sample sizes and the small size of the never dangerous group in particular, it was of little surprise that none of the analyses reached significance. However, a close examination of the means of the three groups as presented in Table 3, supports our hypothesis with the innocuous only group falling intermediate to the two comparison groups on all but one variable (number of avoidance symptoms).

We also repeated the analysis of the relationship between sexual abuse and command hallucinations. When the innocuous only group are included and the entire sample is used ($n = 74$), there is a significant association between a history of sexual abuse and the experience of command hallucinations to commit suicide ($X^2 (1, 74) = 4.51, p = .017$) but no significant association between a history of sexual abuse and the experience of command hallucinations to self-harm ($X^2 (1, 74) = 1.22, p = .135$).

Results

Table 5.3: Means for length of time hearing voices and trauma variables for the three voice hearing groups

Variable		M (median)	SD	Mean rank
Length of time hearing voices in years¹	Never	5.85 (2)	7.06	27.38
	Never dangerous	7.00 (6)	4.04	37.43
	Ever	9.54 (8)	8.40	39.94
Number of types of trauma¹	Never	1.46 (1)	1.61	31.54
	Never dangerous	1.43 (1)	1.62	31.21
	Ever	2.13 (2)	1.87	39.75
Number re-experiencing	Never	1.38 (0)	1.85	30.85
	Never dangerous	1.57 (0)	2.07	31.64
	Ever	2.13 (3)	2.16	39.86
Severity re-experiencing	Never	2.23 (0)	3.26	29.50
	Never dangerous	3.00 (0)	4.80	32.43
	Ever	4.93 (3)	5.10	40.08
Number avoidance	Never	2.23 (1)	2.71	32.69
	Never dangerous	2.86 (0)	3.58	37.14
	Ever	2.98 (2)	2.87	38.70
Severity Avoidance	Never	4.77 (1)	6.47	32.69
Number hyperarousal	Never dangerous	7.00 (0)	8.76	35.36
	Ever	7.04 (2)	7.62	38.94
	Never	1.38 (0)	1.81	29.88
Severity hyperarousal	Never dangerous	1.86 (0)	2.34	33.57
	Ever	2.41 (3)	2.14	39.84
	Never	2.77 (0)	4.02	29.42
	Never dangerous	4.14 (0)	5.43	32.29
	Ever	5.85 (4)	5.80	40.12

¹ Two tailed hypothesis; never n = 13; never dangerous n = 7; ever n = 54

Results

5.2.4 Interim Discussion

These results, whilst substantially underpowered, represent a finding of significant interest. They suggest that there may indeed be a relationship between traumatic life events and the development of command hallucinations.

Like others (Read *et al*, 1998; Andrew *et al*, 2008), these findings highlight the high prevalence of sexual abuse in a sample of voice hearers. Over 47% of this sample reported being sexually abused. It would appear from these results that amongst a group of voice hearers as a whole, those with a history of sexual abuse are significantly more likely to experience command hallucinations to commit suicide.

The results indicate a trend to suggest that those who reported hearing commands at some point in their voice hearing history reported on average, a greater number of trauma symptoms and a greater severity of such symptoms than those that had never experienced command hallucinations. Interestingly, those that report hearing commands of a more serious or dangerous nature (that is commands to harm themselves or others), appear to be the most traumatised, in terms of the mean number of types of trauma they have experienced and the degree to which they continue to be affected by the trauma.

It must be considered, however, that there could be an alternative explanation that accounts for all of these findings. For instance, there appears to be a trend (that is approaching significance) between the length of time that the individual has heard voices and the presence of command hallucinations, with those that have heard voices on average for more years, reporting the more serious or dangerous commands to harm themselves and/or others. This might therefore suggest that the longer you hear voices

Results

the more likely you are to hear a command. The length of time hearing voices might also account for the trauma findings. Many authors have discussed the traumatic nature of psychotic symptoms (Frame and Morrison, 2001; Andrew *et al*, 2008). It may be that the longer voices and command hallucinations in particular are heard, the more traumatised the individual becomes. This may well be the case, however, when participants completed the Post-Traumatic Stress Diagnostic Scale they were asked to rate the symptoms they were experiencing in relation to the traumatic life event they had identified only.

We failed to replicate the findings with regard to gender and the presence of command hallucinations that has previously been reported. We also failed to find a significant association between a history of sexual abuse and command hallucinations to self-harm. Both of these variables (sexual abuse and command hallucinations) are notoriously under-detected. In particular, it has been found that individuals with a diagnosis of schizophrenia (as 43% of this group have) are rarely asked whether they have been sexually abused. It has also been found that, unless asked explicitly, many individuals do not disclose the presence of command hallucinations. Our recruitment and assessment strategy was purposely inclusive in order to maximise the detection of command hallucinations and to ask explicitly about the presence or absence of specific types of traumatic life events including sexual abuse. It may be then that we have detected cases that previous research designs may well have missed, in doing so we appear to have formed a clearer picture on which to base future research.

Results

5.3 What distinguishes those that currently hear commands from those that do not currently hear commands?

5.3.1 Introduction to hypotheses

Question one was concerned with the factors that might increase an individual's vulnerability towards hearing command hallucinations at some point in their life. The group of interest was therefore anyone that reported ever having heard a command hallucination.

This question is concerned with which factors distinguish those that are currently hearing commands from those that are not. This is an important question. Given that command hallucinations have been shown to be associated with high levels of distress and are often managed aggressively using pharmacological approaches and partial or full hospitalisation, it would seem important to consider which variables might represent targets for intervention.

There is a limited amount of previous research in this area as few studies have compared these populations. Those studies that do exist present somewhat inconsistent findings. For example, despite results from randomised controlled trials and several research studies suggesting that individuals with command hallucinations are generally more distressed and therefore often receive more aggressive treatment (Trower *et al*, 2004 Shawyer *et al*, 2008), the findings relating to the mental state of those with command hallucinations are equivocal at best (partly as a result of varying measures and assessments and differences in the way the study population is defined). For instance, two studies have found that those with command hallucinations are not necessarily more

Results

unwell than those with generic auditory hallucinations (Mackinnon *et al.*, 2004; Erkwoh, Willmes, Erming-Erdmann and Kunert, 2002) but the Mackinnon *et al.* (2004) study suggested that compared with a group of generic voice hearers, those with command hallucinations had significantly more negative symptoms. Erkwoh *et al.*, (2002) found no significant difference on negative symptoms. We therefore hypothesised that individuals currently experiencing command hallucinations would not be significantly more unwell than those with generic voices but that they would be significantly more distressed. We were also interested in exploring whether there were any differences in other aspects of mental state such as the overall severity of additional psychotic symptoms.

In terms of topography of voices, Mackinnon, *et al* (2004) found that compared to those that did not report command hallucinations, command hallucinators rated their voices to be more frequent, more negative and more controlling. This is consistent with our clinical experience and we would therefore expect to replicate this finding. We will also explore other aspects of the voice experience and would expect to find that those with command hallucinations are significantly less likely to feel in control of the voice experience.

These two groups also lend themselves to a further analysis of the way in which traumatic life events are associated with the experience of command hallucinations. The previous analysis found that there was a tendency (at times reaching significance) for those that had reported ever having an experience of hearing a command (dangerous or innocuous) to report, on average, a greater number of trauma symptoms and for these symptoms to be of greater severity suggesting that traumatic life events and the psychological sequelae of such events may increase an individual's predisposition

Results

towards interpreting a voice as commanding. This question will permit an exploration of whether traumatic life events and associated symptoms act as maintaining factors for command hallucinations. Previous research has found that unresolved trauma is associated with voice content and significantly predicts the beliefs an individual has about the voices they hear (Close and Garety, 1998; Andrew *et al*, 2008). We would therefore expect those currently hearing command hallucinations to report significantly greater levels of unresolved trauma (as measured by persistent re-experiencing, avoidance and hyperarousal symptoms).

This analysis will therefore compare the mental state (as measured by the BPRS), topography of voices (as measured by the PSYRATS) beliefs about voices and the trauma profile (as measured by the PDS) of those who do not report currently report hearing command hallucinations and those that report having heard a command hallucination in the month prior to the research interview.

5.3.2 Participants

The two main experimental groups (as described in chapter four) were included in the current analysis. Those who reported currently hearing command hallucinations (CH; $n = 49$) were compared with those that reported hearing voices that did not issue commands (general hallucinators, GH; $n = 25$). The demographic information pertaining just to these two groups is presented in the methodology chapter (Chapter four).

Results

5.3.3 Results

As with analysis one, the nature of the data on each variable was examined in order to assess the degree to which it met the assumptions underlying the use of parametric statistical tests. The majority of the items of the BPRS violated these assumptions by either not being normally distributed or by being significantly skewed. Whilst there were some exceptions (anxiety, depression, guilt, hostility, suspiciousness, hallucinations, unusual thought content, tension, distraction and BPRS total score) non-parametric analyses were used throughout in order to maintain a consistent approach. The composite scores of the BPRS also violated the assumption of normality. Analyses were, however, repeated using parametric analyses (t-tests) and where the findings were any different the results from the parametric analysis will also be presented.

As before, the trauma variables did not lend themselves to parametric analysis. The same was true of the variables resulting from the PSYRATS (which are ordinal in nature).

5.3.4 Mental State

Table 5.4 presents the findings with regard to the mental state of each of the two groups. These are based on composite measures obtained from the extended version of the BPRS. The total BPRS score is also presented as a gross indicator of overall mental state.

The results suggest that whilst the command hallucinators are not necessarily more unwell in terms of their total BPRS score they are, as predicted, significantly more distressed (in terms of affective symptoms) than the general hallucinations group. As composite measures were utilised in this analysis, it is helpful to look to the individual

Results

symptom scores in order to see what is underpinning the differences between the groups. Univariate analyses were therefore conducted on the individual symptom measures subsumed in the anxiety/depression composite. These one-tailed analyses suggest that the CH group were significantly more depressed ($U = 401, p < .005$) and had significantly higher levels of suicidal ideation and intent ($U = 355, p < .0001$) than the GH group.

The GH group were found to have significantly higher scores on activation symptoms and on psychotic type symptoms than the CH group.

The activation composite provides an indication of some of the symptoms that are perhaps associated with mania (see methodology chapter for a list of symptoms) and the degree to which an individual is excitable, distractible and restless or bizarre in their behaviour. Univariate analyses suggest that these differences might be underpinned by the GH having significantly higher scores on elevated mood ($U = 501, p < 0.01$) and on conceptual disorganisation ($U = 482, p < 0.01$). Grandiosity and tension were approaching significance with $U = 526, p = .055$ and $U = 482, p = 0.055$ respectively.

In terms of psychotic symptoms, further analyses suggest that the groups were well matched with regards to the gross severity of hallucinations with no significant differences being detected between the two groups. However, there were significant differences on unusual thought content ($U = 329, p < 0.0001$) and conceptual disorganisation (as above). Interestingly, an examination of the means indicates that the GH group reported significantly more unusual thought content than the CH group (mean scores of 3.04 and 1.71 respectively).

Results

The mean scores for the two groups on each of the individual symptom scales of the BPRS are provided in the appendix.

Table 5.4: Results of the between group analysis comparing general hallucinators with command hallucinators

Variable	Group	M (median)	SD	Mean rank	U	p	Effect size
Affect	General	2.39 (2.28)	.80	29.80	420	.027	0.90
	Command	2.71 (2.85)	.69	41.43			
Activation	General	1.83 (1.56)	.70	45.04	424	.030	0.87
	Command	1.43 (1.33)	.40	33.65			
Retardation	General	1.65 (1.66)	.57	42.32	492	.162	0.53
	Command	1.50 (1.33)	.50	35.04			
Psychosis	General	2.58 (2.50)	.81	46.42	390	.010	1.04
	Command	2.13 (2.00)	.60	32.95			
Total BPRS score	General	49.20 (49)	11.92	39.72	557	.525	0.15
	Command	46.76 (47)	9.36	36.37			

GH n = 25; CH n = 49

5.3.5 Topography of Voices

Table 5.5 presents the findings with regard to the topography of the voices and the amount of distress associated with them as measured by the PSYRATS. Although the findings from the BPRS suggested that individual with command hallucinations were not significantly more hallucinated as a group, the finer detail provided by the PSYRATS suggests that the two groups differ on a number of variables. Although on average the CH group reported hearing voices more frequently and for longer periods of time, the differences between the two groups did not reach significance. However, the CH group

Results

reported hearing voices that were significantly louder and that were significantly more likely to be heard internally (inside the head or close to the ears). Consistent with previous research, the CH group also reported having significantly less control over the voice hearing experience and reported being significantly more distressed, more often than those in the GH group.

Within the PSYRATS the presence of any form of command would automatically result in the highest score in terms of negative content, by definition therefore, the CH group rated the content of their voices as more negative. However the cognitive behavioural model as described in chapters one and two, posits that distress associated with voices may be better understood and more closely correlated statistically with the individual's beliefs about the voices they hear. It therefore felt important to compare the beliefs held by the two groups about the voices that they hear. The results from this analysis are displayed in table 5.6. The data resulting from the five sub-scales of the beliefs about voices questionnaire- revised (BAVQ-R) met the assumptions for parametric analysis and were therefore analysed using an independent t-test. Previous research has tended to compare the beliefs held by those who comply with command hallucinations with those that do not comply. For this reason, a direction for the findings was not predicted and all analyses were two tailed.

Results

Table 5.5: PSYRATS data

Variable	Group	M (median)	SD	Mean rank	U	P	Effect size
Frequency of voices	General	2.56 (3)	1.19	35.60	565	.29	.14
	Command	2.71 (3)	1.16	38.47			
Duration of voice activity	General	2.76 (3)	1.09	33.76	519	.13	.23
	Command	3.06 (3)	.967	39.41			
Location of voices	General	2.80 (3)	1.00	46.12	397	.005	.68
	Command	2.10 (2)	1.07	33.10			
Volume of voices	General	2.08 (2)	.702	27.76	369	.001	.82
	Command	2.59 (3)	.788	42.47			
Amount of distress	General	2.60 (3)	1.47	30.44	436	.01	.61
	Command	3.39 (4)	1.04	41.10			
Degree of distress	General	2.16 (2)	1.21	22.66	378	.003	.71
	Command	2.98 (3)	1.05	45.07			
Control over voices	General	2.80 (3)	.957	32.60	490	.07	.37
	Command	3.12 (3)	.971	40.00			
Total PSYRATS	General	27.48 (28)	6.99	27.68	367	.003	.71
	Command	31.96 (34)	6.26	42.52			

GH n = 25; CH n = 49

Results

Table 5.6: Between group analysis of the BAVQ-R

Variable		M (median)	SD	t	p	Effect size
Malevolence	General	7.36 (7)	5.39	-4.39	.0001	1.05
	Command	12.57 (13)	4.46			
Benevolence	General	4.72 (4)	5.31	.912	.37	.22
	Command	3.68 (2)	4.19			
Omnipotence	General	8.64 (8)	4.27	-4.18	.0001	1.03
	Command	13.04 (14)	4.25			
Resistance	General	17.84 (20)	7.15	-2.05	.04	.47
	Command	20.66 (22)	4.51			
Engagement	General	5.88 (5)	6.22	1.56	.12	.37
	Command	3.83 (2)	4.76			

GH n = 25; CH n = 49

These results suggest that generally speaking, individuals with command hallucinations have more negative beliefs about voices, believing them to be significantly more malevolent and omnipotent and less benevolent in nature. They are significantly more likely to cope with voices using resistant strategies and are somewhat less likely to engage with the voice.

5.3.6 Trauma

The two groups were almost perfectly matched in terms of the number of types of trauma they had experienced over their lifetime ($U = 612$, $p = .995$), and there were no significant differences with regard to the proportion of the group that reported a history of sexual abuse ($\chi^2 (1, 74) = .81$, $p = .37$). Despite this, the CH group were significantly more traumatised. The results as displayed in table 5.7 demonstrate the way in which the

Results

CH group reported a significantly greater number of re-experiencing, avoidance and hyperarousal all of significantly greater severity than the GH group. Accordingly, a significantly greater proportion of the CH group met diagnostic criteria for a diagnosis of PTSD with 28% of the GH and 50% of the CH group meeting criteria ($X^2(1, 74) = 3.57, p < 0.05$).

Table 5.7: Between group comparison of trauma variables

Variable		M (median)	SD	Mean rank	U	p	Effect size
Number re-experiencing	General	1.08 (1)	1.58	27.76	369	.002	.83
	Command	2.65 (3)	2.17	42.47			
Severity re-experiencing	General	1.60 (0)	2.61	26.86	347	.001	.98
	Command	5.63 (4)	5.20	42.93			
Number avoidance	General	1.80 (0)	2.52	30.28	432	.016	.57
	Command	3.37 (5)	2.94	41.18			
Severity Avoidance	General	3.68 (0)	5.77	30.16	429	.015	.58
	Command	8.14 (6)	7.85	41.24			
Number hyperarousal	General	1.36 (0)	1.73	29.20	405	.006	.62
	Command	2.59 (3)	2.19	41.73			
Severity hyperarousal	General	2.56 (0)	3.72	28.52	388	.004	.79
	Command	6.47 (8)	5.91	42.08			

GH n = 25; CH n = 49

5.3.7 The relationship between trauma, beliefs about voices and distress associated with voices

The findings described above suggest that, as a group, individuals that are currently experiencing command hallucinations are significantly more distressed, report more severe beliefs about the voices they hear, and report significantly more symptoms of

Results

trauma of significantly greater severity than individuals who report hearing voices of a more general nature. Whilst individuals were asked to rate their current trauma symptoms in relation to the traumatic life events it may be that this group are traumatised by their voice hearing experience, they are certainly significantly more distressed by their experience.

In order to explore the underlying relationships between trauma, beliefs about voices and distress, a bivariate correlation was conducted incorporating both groups (CH and GH). Only those factors that were found to be significant were entered into the correlational analysis in order to minimise the chance of a type I error, also only PSYRATS total score and the intensity of distress were entered as there was a good deal of conceptual overlap between the amount and intensity of distress. The results from this analysis are presented in table 5.8.

Consistent with previous studies (e.g., Chadwick and Birchwood, 1994), positive relationships were detected between beliefs about voices (malevolence and omnipotence) and levels of distress as measured by the PSYRATS. Significant associations were also detected between beliefs about voices and all trauma variables. If only p values less than .005 are considered (which would be more stringent given the number of comparisons), all trauma variables except the number and severity of avoidance symptoms are significantly associated with beliefs about malevolence. They remain, however, significantly associated with beliefs about omnipotence.

This suggests that the degree of persistent trauma symptoms that have been observed in the CH group is unlikely to be a direct consequence of distressing voices and is likely to

Results

reflect distress associated with traumatic life events. However, the significant relationship between trauma symptoms and beliefs about voices suggests that the degree of ongoing trauma symptoms may influence or contribute towards the severity of negative beliefs about voices.

Table 5.8: Results from correlational analysis of trauma, beliefs about voices and distress

Variable	PSYRATS Distress	PSYRATS Total	BAVQ- R Malevolence	BAVQ-R Omnipotence
PSYRATS distress	-	.737 ***	.539**	.492**
PSYRATS Total	-	-	.637**	.519**
BAVQ- R Malevolence	-	-	-	.720**
BAVQ-R omnipotence	-	-	-	-
no. re-experiencing	.148	.096	.325**	.384**
Severity re-experiencing	.243*	.172	.366**	.413**
no. avoidance	.157	.090	.258*	.381**
Severity avoidance	.235*	.132	.272*	.367**
no. hyperarousal	.132	.181	.341**	.368**
Severity hyperarousal	.214	.247*	.392**	.418**

n = 72; - repeated result

* p < 0.05; ** p < 0.005; *** p < 0.001

5.3.8 Interim Discussion

This analysis focussed on an exploration of the differences between a group of individuals that are currently hearing command hallucinations and a group that hear voices that are generic in nature (non-commanding). The results reveal that, as expected, whilst not necessarily more unwell (from a point of view of the severity of their psychotic symptoms), individuals that report hearing command hallucinations are significantly

Results

more distressed than those reporting general voices. Whilst not appearing more hallucinated (as measured by the BPRS) and not experiencing voices significantly more frequently or for longer periods of time, individuals with command hallucinations report hearing voices that are significantly louder and that are more likely to be heard internally (inside or close to the head). Consistent with all previous studies in this area, individuals with command hallucinations report being significantly more distressed by the voices they hear and report having significantly less control over their voice hearing experience.

Despite detecting very high levels of trauma symptoms amongst this population of command hallucinators (with 50% of the sample meeting diagnostic criteria for a diagnosis of PTSD), there is some indication from these results that the distress associated with command hallucinations in this study may be more attributable to beliefs about voices than to an underlying trauma. There was, however, a significant relationship between beliefs about voices and persistent trauma symptoms such as has been found in previous studies (Andrew *et al*, 2008). The absence of an association between trauma and distress as measured by the PSYRATS and the presence of a significant relationship between trauma symptoms and beliefs about voices suggests that perhaps unresolved trauma may play a contributory role in the beliefs an individual holds about the voices they hear.

5.4 Distinguishing harm-self from harm-other

5.4.1 Introduction to hypotheses

It is now well documented that the content of command hallucinations can vary ranging from innocuous instructions to severe commands to harm or kill oneself or others (see Chapter three and Byrne, Birchwood, Trower and Meaden, 2006). Despite the complexity of the phenomena, few studies have compartmentalised individuals according to the content of the commands they hear in order to explore any differences between, for example, those that hear commands to harm self versus commands to harm others. It may be that those who report hearing commands to harm themselves differ significantly from those that report hearing commands to harm others. Such a profile, if indeed one exists, would be a very useful guide that could help to further tailor the development of psychological interventions for specific sub-types of voices. To the best of our knowledge, no study has conducted a direct comparison of the individuals experiencing the various sub-types of command hallucination (self-harm, suicide, and harm-other).

An analysis of the differences between those that do and don't report a particular type of command appears to be the next natural step in the analysis of this dataset, however given the paucity of previous research on this specific comparison there is little to guide the formation of hypotheses, so the following analysis is exploratory in nature.

Results

5.4.2 Participants

This analysis focussed solely on those that reported hearing command hallucinations at the time of interview or in the month preceding interview ($n = 49$). The demographic data pertaining to this group are displayed in table 5.1.

Unlike previous studies where researchers have asked about the predominant or most severe command (Fox, Lewis and Gray, 2004), individuals in the current study were interviewed about all of the command hallucinations they were experiencing at the time of interview or in the month preceding the interview. This resulted in a very complex pattern of data as the majority of this group reported hearing multiple commands. As a result of this and for the purposes of this analysis, individuals may be included in more than one univariate comparison. For instance, an individual who reported hearing harm other and harm self commands will be compared in individual analyses with a group of command hallucinators who do not report hearing harm other commands and a group of command hallucinators who do not report hearing harm-self commands respectively.

Participants were asked to identify which they felt to be the predominant voice (not necessarily the most 'dangerous') thus permitting an analysis of predominant voice content only. In an analysis based on predominant content, individuals will be assigned to one group only for a between group comparison. This replicates the simpler methodology utilised by previous researchers.

Results

5.4.3 Measures

Between group comparisons were conducted on measures pertaining to general mental state (BPRS scores), nature of voices (PSYRATS scores) and beliefs about voices (BAVQ-R scores). We were also interested in examining any differences that might exist in beliefs about self, scores from the social comparison scale were therefore also compared between groups. As discussed in chapter four, two measures of beliefs about self were utilised in the current study. All participants completed the Social Comparison Scale (SCS) and the Evaluative Beliefs Scale (EBS). Statistical analysis indicates that these two measures are highly correlated ($R = .81, p < 0.001$). In order to avoid unnecessary comparisons (which would only increase the likelihood of detecting a type I error), only the results from the SCS were analysed. This measure was chosen because it was felt to be more closely linked to the concept of social rank, a variable of apparent theoretical importance in understanding compliance with command hallucinations.

5.4.4 Results

All analyses are two-tailed due to the exploratory nature of the analysis. Fifty three per cent of the CH group ($n = 26$) reported hearing multiple types of commands. Thirty eight per cent reported commands to harm or kill others, 65.3% reported commands to commit suicide, 55.1% reported commands to harm themselves and 58.3% reported innocuous commands. In terms of predominant voice content, 10.2% reported the predominant command to be harm-other, 34.7% reported a predominant command to commit suicide and 46.9% reported a predominant command to harm themselves. Just 8.2% reported innocuous commands to be predominant.

Results

5.4.5 Harm-Other Commands

Individuals reporting commands to harm others ($n = 19$) were compared with individuals with command hallucinations who did not hear commands to harm others ($n = 30$). Forty seven per cent of those reporting command hallucinations to harm others were residing in an inpatient facility. Of this 47%, only one individual was in a forensic inpatient facility. Sixty three per cent of those that reported commands to harm others were female.

The nature of the harm-other commands ranged from mild to severely aggressive and violent behaviour. For instance, individuals reported commands to shout abuse at someone in the street; to “smash him in the face”; and to kill another person (in every instance of being commanded to kill, the potential victim was known to the voice hearer). Ninety five per cent ($n = 18$) of those reporting commands to harm others described a negative emotional response to the voices that they heard. The remaining individual reported a neutral response.

Table 5.9 displays the results from an analysis of the difference in mental state of those that reported hearing commands to harm others compared with those that did not experience this particular command. Although the data from the groups were not normally distributed, the median scores were remarkably similar to the mean score so only the later are presented in the table. The total BPRS score suggests that those with commands to harm others are significantly more ‘unwell’, that is they report, on average, a higher level of symptomatology. Perhaps somewhat unexpectedly, those with commands to harm others were not necessarily experiencing more psychotic symptoms (such as delusions, grandiose beliefs) they were, however, significantly more distressed

Results

(as demonstrated by the depression/anxiety domain) as a group. An examination of the individual symptom scores subsumed in this composite, reveals that there is a significant difference between the groups on just one affective symptom: guilt. Individuals with command hallucinations to harm others reported feeling significantly more guilty than those without commands to harm others ($U = 189, p < .05$). The scores on the retardation domain were also approaching significance ($p = 0.06$) with a similar effect size as the depression/anxiety domain. Again this difference appears to be underpinned by a significant difference on just one scale: motor retardation ($U = 208, p < .02$). This may well reflect side effects related to higher doses of medication that those with commands to harm others are on compared to those with commands of a self-harming nature.

Table 5.9: Between group analysis comparing the general mental state of those with and without command hallucinations to harm others

Variable	Group	M	SD	Mean rank	U	P	Effect size
Affect	Harm Other	2.96	.47	30.05	172	.05	.58
	No Harm Other	2.55	.76	21.80			
Activation	Harm Other	1.55	.47	28.89	189	.13	.53
	No Harm Other	1.36	.34	22.53			
Retardation	Harm Other	1.64	.55	29.71	211	.06	.56
	No Harm Other	1.41	.44	22.02			
Psychosis	Harm Other	2.32	.65	29.45	196	.08	.49
	No Harm Other	2.02	.54	22.18			
Total BPRS score	Harm Other	50.84	8.13	30.97	201	.02	.76
	No Harm Other	44.17	9.29	21.22			

Harm Other n = 19; No Harm Other n = 30

Results

Table 5.10 displays the results from a between groups analysis of voice characteristics. The findings suggest that whilst those with commands to harm others report generally more severe experiences, they are not significantly more distressed by their voice hearing experience than those with other types of commands. Indeed, there was very little difference between the groups on this variable and the effect size was very small. Of some interest, however, is the significant difference with regard to beliefs about the origin of the voice. On this variable, a higher score represents the individual holding a higher conviction in the belief that the voices they hear are attributable to an external source. It would appear therefore, that those that report commands to harm others are significantly more likely to believe that the voices originate from an external source.

The results pertaining to the individuals' beliefs about the nature and purpose of the voices and the way in which they cope with this experience are displayed in table 5.11. The findings suggest that those with commands to harm others rate the voices they hear as significantly more malevolent than those with commands of a different nature. In keeping with the cognitive behavioural model, this finding was accompanied by a further significant difference between the groups on the resistance sub-scale.

Results

Table 5.10: Between group analysis comparing voice characteristics of those with and without command hallucinations to harm others

Variable	Group	M	SD	Mean rank	U	P	Effect size
Frequency of voices	Harm Other	2.95	.91	27.18	244	.38	.22
	No Harm Other	2.57	1.28	23.62			
Duration of voice activity	Harm Other	3.21	.86	26.82	251	.44	.31
	No Harm Other	2.97	1.03	23.85			
Location of voices	Harm Other	2.37	.96	28.47	219	.15	.40
	No Harm Other	1.93	1.11	22.80			
Volume of voices	Harm Other	2.74	.81	27.29	242	.33	.31
	No Harm Other	2.50	.78	23.55			
Beliefs about origin	Harm Other	3.16	.96	33.45	125	.001	1.12
	No Harm Other	2.07	.98	19.65			
Amount of distress	Harm Other	3.63	.14	26.55	256	.47	.25
	No Harm Other	3.23	.22	24.02			
Degree of distress	Harm Other	3.11	.94	26.24	262	.61	.15
	No Harm Other	2.90	1.13	24.22			
Control over voices	Harm Other	3.21	.79	25.45	277	.85	.04
	No Harm Other	3.07	1.08	24.72			
Total PSYRATS	Harm Other	34.47	3.84	30.82	175	.02	.70
	No Harm Other	30.37	6.99	21.32			

Harm Other n = 19; No Harm Other n = 30

Results

Table 5.11: Between group analysis comparing beliefs about voices of those with and without command hallucinations to harm others

Variable		M	SD	t	p	Effect size
Malevolence	Harm Other	14.28	3.46	2.14	.04	.67
	No Harm Other	11.52	4.74			
Benevolence	Harm Other	3.17	3.92	-.66	.51	-.19
	No Harm Other	4.00	4.38			
Omnipotence	Harm Other	14.00	3.65	1.22	.23	.38
	No Harm Other	12.45	4.55			
Resistance	Harm Other	22.28	2.68	1.99	.05	.64
	No Harm Other	19.66	5.14			
Engagement	Harm Other	3.39	3.68	-.49	.62	-.15
	No Harm Other	4.10	5.36			

Harm Other n = 19; No Harm Other n = 30

There was little to guide the analysis of differences between the groups in terms of beliefs about self. The analysis was therefore entirely exploratory. The findings displayed in table 5.12 suggest that, based on the social comparison scale, there are no differences between those with commands to harm others and those without commands to harm others in terms of the way in which they feel about themselves. Given the small effect sizes it is unlikely that this null finding is merely related to insufficient power.

Results

Table 5.12: Between group analysis comparing scores on the social comparison scale of those with and without command hallucinations to harm others

Variable		M	SD	Mean Rank	U	P	Effect size
Rank	Harm Other	12.47	7.26	22.68	241	.37	.28
	No Harm Other	13.77	6.30	26.47			
Attractiveness	Harm Other	8.26	5.96	24.37	273	.80	.05
	No Harm Other	8.83	5.72	25.40			
Group Fit	Harm Other	12.32	9.12	22.84	244	.39	.25
	No Harm Other	13.13	7.22	26.37			
Total	Harm Other	32.16	21.09	22.58	239	.35	.30
	No Harm Other	36.07	18.17	26.53			

Harm Other n = 19; No Harm Other n = 30

5.4.5.1 Suicide Commands

Thirty two individuals who reported currently hearing commands to commit suicide were compared to 17 individuals who reported command hallucinations that did not instruct or were not perceived to instruct suicide. Forty four per cent of those reporting commands to commit suicide were inpatients at the time of the research interview. Of those reporting commands to commit suicide, two thirds were female.

Table 5.13 presents the findings from a comparison of the general mental state of the two groups as measured by BPRS composite scores. Although, on average, those with commands to commit suicide were more distressed and reported more severe affective symptomatology there were no significant differences between the two groups on any of

Results

the composite scores. If effect sizes are attended to rather than significance levels, the difference between the two groups on the psychosis dimension is a relatively strong effect (effect size .57). On this variable those with suicide commands presented with less severe psychotic symptomatology. The lack of significance may therefore be a result of small sample size.

Table 5.13: Between group analysis comparing general mental state of those with and without command hallucinations to commit suicide

Variable	Group	M	SD	Mean rank	U	p	Effect size
Affect	Suicide	2.77	.76	26.81	214	.22	.38
	No Suicide	2.59	.51	21.59			
Activation	Suicide	1.38	.34	23.84	235	.43	.27
	No Suicide	1.54	.49	27.18			
Retardation	Suicide	1.51	.55	24.72	263	.85	.03
	No Suicide	1.46	.38	25.53			
Psychosis	Suicide	2.07	.67	22.28	185	.07	.57
	No Suicide	2.25	.43	30.12			
Total BPRS score	Suicide	46.63	10.58	24.38	252	.67	.04
	No Suicide	47.00	6.78	26.18			

Suicide n = 32; No Suicide n = 17

As displayed in tables 5.14 and 5.15 there were no significant differences between those that do and do not report command hallucinations to commit suicide in terms of the nature of the voices, beliefs about voices and the distress associated with voices. There are, however, some interesting results that are perhaps worthy of attention. For instance, those reporting commands to commit suicide appeared on average to hear voices less often than those without commands to commit suicide; those with suicide commands

Results

were also more likely to hear voices internally rather than externally. These were, however, relatively small effects (.37 and .27 respectively) and may therefore be spurious results. Certainly, it would not be possible to draw any generalisations from this data.

Table 5.14: Between group analysis comparing voice characteristics of those with and without command hallucinations to commit suicide

Variable	Group	M	SD	Mean rank	U	P	Effect size
Frequency of voices	Suicide	2.56	1.19	23.22	215	.21	.37
	No Suicide	3.00	1.06	28.35			
Duration of voice activity	Suicide	3.09	.96	25.44	258	.75	.19
	No Suicide	3.00	1.00	24.18			
Location of voices	Suicide	2.00	1.05	23.73	232	.36	.27
	No Suicide	2.29	1.11	27.38			
Volume of voices	Suicide	2.59	.84	25.50	256	.72	.12
	No Suicide	2.59	.71	24.06			
Beliefs about origin	Suicide	2.53	1.14	25.53	255	.71	.11
	No Suicide	2.41	1.06	24.00			
Amount of distress	Suicide	3.47	.95	25.45	258	.72	.13
	No Suicide	3.24	1.20	24.15			
Degree of distress	Suicide	3.09	1.03	26.53	223	.28	.33
	No Suicide	2.76	1.09	22.12			
Control over voices	Suicide	3.03	1.03	23.89	236	.43	.22
	No Suicide	3.29	.85	27.09			
Total PSYRATS	Suicide	32.44	5.76	25.69	250	.64	.11
	No Suicide	31.06	7.20	23.71			

Suicide n = 32; No Suicide n = 17

Results

Table 5.15: Between group analysis comparing beliefs about voices of those with and without command hallucinations to commit suicide

Variable		M	SD	T	p	Effect size
Malevolence	Suicide	13.17	4.56	1.21	.23	.38
	No Suicide	11.53	4.23			
Benevolence	Suicide	2.97	4.13	-1.58	.12	.48
	No Suicide	4.94	4.10			
Omnipotence	Suicide	13.30	4.66	.55	.59	.17
	No Suicide	12.59	3.52			
Resistance	Suicide	20.50	4.35	-.32	.75	.09
	No Suicide	20.94	4.91			
Engagement	Suicide	3.07	4.01	-1.48	.15	.43
	No Suicide	5.18	5.74			

Suicide n = 32; No Suicide n = 17

Table 5.16 presents the results from the analysis of the social comparison scale. Across all sub-scales of this measure, those with commands to commit suicide rated themselves as inferior (as indicated by a lower score). Although none of the differences that were detected approached significance this appears to be a relatively large effect with social rank and attractiveness returning effect sizes of .43 and .1 respectively. It is likely, therefore, that the lack of statistical significance is due to a lack of power in a sample of this size.

Results

Table 5.16: Between group analysis comparing scores on the social comparison scale of those with and without command hallucinations to commit suicide

Variable		M	SD	Mean Rank	U	P	Effect size
Rank	Suicide	12.44	6.62	23.00	208	.18	.41
	No Suicide	14.82	6.60	28.76			
Attractiveness	Suicide	8.03	5.99	22.63	196	.11	.53
	No Suicide	9.71	5.28	29.47			
Group Fit	Suicide	12.38	8.30	23.63	228	.35	.31
	No Suicide	13.65	7.33	27.59			
Total	Suicide	33.16	19.82	23.34	219	.27	.25
	No Suicide	37.18	18.37	28.12			

Suicide n = 32; No Suicide n = 17

5.4.5.2 Self-Harm

Twenty seven individuals reported experiencing commands to self-harm at the time of the interview or in the month preceding the interview. This group were compared to a group of individuals (n = 22) who were experiencing commands without self-harming content.

Fifty per cent (n = 16) of the group with self-harm commands were residing in an inpatient facility at the time of interview. Of those that reported hearing commands to self-harm, 63% were female.

As above, the groups were compared on mental state, nature of voices, beliefs about voices, and beliefs about self as measured by the social comparison scale.

Results

The findings from the BPRS, as displayed in table 5.17 suggest that there are no significant differences in the general mental state of those with and without commands to self-harm although there is a relatively large effect on the depression/anxiety domain. As with previous comparisons, the median scores for all variables were remarkably similar to the mean scores so only the later are presented.

Table 5.17: Between group analysis comparing general mental state of those with and without command hallucinations to harm self

Variable	Group	M	SD	Mean rank	U	p	Effect size
Affect	Self-Harm	2.83	.70	26.81	231	.18	.41
	No Self-Harm	2.57	.66	21.59			
Activation	Self-Harm	1.50	.47	23.84	251	.35	.32
	No Self-Harm	1.35	.28	27.18			
Retardation	Self-Harm	1.44	.48	24.72	260	.45	.13
	No Self-Harm	1.56	.52	25.53			
Psychosis	Self-Harm	2.21	.67	22.28	270	.58	.18
	No Self-Harm	2.05	.49	30.12			
Total BPRS score	Self-Harm	47.96	10.03	26.59	254	.39	.29
	No Self-Harm	45.27	8.48	23.05			

Self-Harm n = 27; No Self-Harm n = 22

Table 5.18 displays the results of the between group analysis comparing scores on the PSYRATS. Overall, those with self-harm commands had a significantly more severe voice hearing experience (as indicated by a higher PSYRATS Total score) than those without commands to self-harm. However, the only other variable that was even approaching significance was the degree of distress experienced in direct relation to the

Results

voices. The result on this variable suggested that individuals with commands to self-harm are more distressed than those without commands to self-harm. Although the difference between the groups did not achieve significance, the effect size was moderate (.49).

Table 5.18: Between group analysis comparing voice characteristics of those with and without command hallucinations to harm self

Variable	Group	M	SD	Mean rank	U	P	Effect size
Frequency of voices	Self-Harm	2.85	1.29	27.39	233	.18	.43
	No Self-Harm	2.55	.96	22.07			
Duration of voice activity	Self-Harm	3.22	.97	27.28	236	.18	.43
	No Self-Harm	2.86	.94	22.20			
Location of voices	Self-Harm	2.15	.99	25.69	279	.69	.09
	No Self-Harm	2.05	1.17	24.16			
Volume of voices	Self-Harm	2.70	.78	26.54	256	.37	.28
	No Self-Harm	2.45	.80	23.11			
Beliefs about origin	Self-Harm	2.56	.97	25.83	275	.64	.10
	No Self-Harm	2.41	1.26	23.98			
Amount of distress	Self-Harm	3.26	1.16	23.52	257	.34	.30
	No Self-Harm	3.55	.86	26.82			
Degree of distress	Self-Harm	3.19	1.04	27.93	218	.09	.49
	No Self-Harm	2.73	1.03	21.41			
Control over voices	Self-Harm	3.11	1.09	25.44	266	.80	.10
	No Self-Harm	3.14	.83	24.45			
Total PSYRATS	Self-Harm	32.74	7.09	29.09	285	.03	.65
	No Self-Harm	31.00	5.05	19.98			

Self-Harm n = 27; No Self-Harm n = 22

Results

In terms of beliefs about voices, the results from a series of independent t-tests are displayed in table 5.19. These results suggest that generally there are no significant differences in beliefs about voices between those that do and do not report command hallucinations to self-harm. There was, however, a moderate effect size on beliefs about malevolence, with the self-harm group reporting more malevolent beliefs about voices. The difference between the groups on this variable approached significance ($p = 0.06$).

Table 5.19: Between group analysis comparing beliefs about voices of those with and without command hallucinations to harm self

Variable	Group	M	SD	T	p	Effect size
Malevolence	Self-Harm	13.69	3.94	1.97	.06	.57
	No Self-Harm	11.19	4.78			
Benevolence	Self-Harm	3.73	3.76	.09	.93	.03
	No Self-Harm	3.62	4.76			
Omnipotence	Self-Harm	13.50	3.95	.82	.42	.24
	No Self-Harm	12.48	4.63			
Resistance	Self-Harm	21.27	4.05	1.03	.31	.31
	No Self-Harm	19.90	5.03			
Engagement	Self-Harm	3.23	3.40	-.96	.34	.27
	No Self-Harm	4.57	6.05			

Self-Harm $n = 27$; No Self-Harm $n = 22$

The results displayed in table 5.20 suggest that, as with the previous between group analyses, the comparison of scores on the Social Comparison Scale revealed no significant differences between the groups, although those with self-harm commands on average rated themselves as more inferior than those without. The size of this effect was

Results

small for two out of the three variables with only social rank having a more robust effect (.45).

Table 5.20: Between group analysis comparing scores on the social comparison scale of those with and without command hallucinations to commit suicide

Variable	Group	M	SD	Mean Rank	U	P	Effect size
Rank	Self-Harm	12.33	6.90	22.35	226	.15	.45
	No Self-Harm	14.41	6.28	28.25			
Attractiveness	Self-Harm	7.78	5.51	23.06	245	.29	.28
	No Self-Harm	9.64	6.02	27.39			
Group Fit	Self-Harm	12.19	8.47	23.33	252	.36	.23
	No Self-Harm	13.59	7.33	27.05			
Total	Self-Harm	31.67	19.79	22.50	230	.18	.40
	No Self-Harm	38.09	18.35	28.07			

Self-Harm n = 27; No Self-Harm n = 22

5.4.6 Comparison based on predominant content

Previous research studies have simplified research into command hallucinations by focussing on the predominant command, whether this is predominant as defined by the voice hearer or as defined by the interviewer (in which case the predominant command is normally the most severe or dangerous).

During the research interview, individuals were asked to identify which they felt was the predominant command. Based on this criterion, 10.2% reported harm other commands (n = 5); 34.7% reported suicide commands (n = 17); and 46.9% reported self-harm

Results

commands ($n = 23$). Four individuals (8.2%) reported that their predominant commands were innocuous in nature ($n = 4$). This final group were not included in this analysis. They have, however, been described elsewhere (see question one). None of the individuals in this group reported hearing any form of dangerous command.

As before, the data on the majority of variables did not satisfy the assumptions for analysis with parametric statistics. A Kruskal Wallis analysis was therefore used to test the differences between the three groups (predominant content of harm-other, suicide, and self-harm). Although the data from the BAVQ-R was suitable for parametric analysis, Kruskal Wallis was used for consistency. Analysis using a one-way analysis of variance did not alter the findings with regard to these variables in any way. The results from this analysis are displayed in table 5.21 and 5.22. Out of all of the variables, there was found to be only one significant difference between the three groups: the degree of retardation as measured by the BPRS composite. An overview of the scores of each of the three groups on the individual symptom dimensions of the BPRS reveals that the harm-other group achieved the highest mean score on self-neglect, conceptual disorganisation, blunted affect, emotional withdrawal, motor retardation and tension.

Results

Table 5.21: Between Group comparison of all variables based on predominant content

	Variable	Group	M	SD	X	P
BPRS	Depression	Harm Other	3.03	.26		
		Suicide	2.51	.82	1.78	.41
		Harm Self	2.85	.63		
	Activation	Harm Other	1.51	.53		
		Suicide	1.33	.19	.86	.65
		Harm Self	1.53	.50		
	Retardation	Harm Other	2.03	.57		
		Suicide	1.47	.49	5.89	.05
		Harm Self	1.40	.46		
	Psychosis	Harm Other	2.17	.47		
		Suicide	1.94	.50	2.69	.26
		Harm Self	2.29	.69		
	Frequency	Harm Other	2.60	.55		
		Suicide	2.47	1.13	2.80	.25
		Harm Self	2.96	1.26		
PSYRATS	Duration	Harm Other	2.40	.55		
		Suicide	2.94	.97	5.93	.05
		Harm Self	3.39	.94		
	Location	Harm Other	2.00	1.00		
		Suicide	2.00	1.17	.37	.83
		Harm Self	2.17	.98		
	Volume	Harm Other	2.60	.55		
		Suicide	2.41	.87	1.16	.56
		Harm Self	2.74	.81		
	Origin	Harm Other	3.20	1.30		
		Suicide	2.24	1.14	3.18	.20
		Harm Self	2.57	.99		
	Degree of distress	Harm Other	3.00	1.00		
		Suicide	2.76	1.03	1.91	.39
		Harm Self	3.17	1.07		
Control		Harm Other	3.00	.71		
		Suicide	3.12	1.11	.43	.81
		Harm Self	3.17	.94		

Results

Table 5.22: Between Group Analysis Continued

	Variable	Group	M	SD	X	P
BAVQ-R	Malevolence	Harm Other	12.00	5.10		
		Suicide	11.47	5.68	1.79	.41
		Harm Self	14.09	2.84		
	Benevolence	Harm Other	3.00	4.12		
		Suicide	2.33	4.08	3.66	.16
		Harm Self	3.74	3.64		
	Omnipotence	Harm Other	12.80	4.09		
		Suicide	12.07	5.44	1.01	.60
		Harm Self	13.83	3.51		
	Resistance	Harm Other	21.80	2.28		
		Suicide	19.07	5.31	2.50	.28
		Harm Self	21.43	3.87		
	Engagement	Harm Other	3.20	3.83		
		Suicide	3.13	4.70	1.39	.50
		Harm Self	3.22	3.30		
SCS	Rank	Harm Other	11.80	7.33		
		Suicide	14.41	6.34	2.62	.27
		Harm Self	11.43	6.22		
	Attractiveness	Harm Other	10.60	6.43		
		Suicide	8.53	6.05	1.23	.54
		Harm Self	7.30	4.92		
	Group Fit	Harm Other	13.80	7.79		
		Suicide	13.35	7.98	1.53	.47
		Harm Self	10.87	7.48		

Harm Other n = 5; Suicide n = 17; Self-Harm n = 23

Results

5.4.7 Interim discussion

To our knowledge, previous studies have not explored the presentation of individuals reporting varying content of command hallucination. Whilst this would seem to be a clinically useful exercise, it proves very difficult from a methodological point of view because very few individuals report experiencing just one type of command. Despite this complexity, previous research has not really drawn (or perhaps paid) attention to the presence of multiple commands and has suggested that the profiles that are described (for instance, beliefs about malevolence and beliefs about self) are related to just one content. When clinicians are faced with making decisions regarding risk, this literature may misguide them.

It is clear when we adopted the methodology that has been used by previous researchers, that is when we focussed on predominant content only, very few differences existed between the three main groups (harm-other, suicide and self-harm). Indeed, the only significant difference between the groups was the degree of retardation as measured by the BPRS composite. On this variable, those with commands to harm others reported experiencing the most severe degree of retardation. It may well be that this difference is underpinned by differences in the treatment that is received by the three groups. If, as the existing literature suggests, those who experience dangerous commands are more likely to be prescribed significantly higher doses of antipsychotic medication it may be that the retardation that is reported is a result of the side effects of their treatment regime. Such treatment regimes may also minimise the likelihood of detecting any differences on the other domains of mental state, particularly the domain of psychosis.

Results

There are some methodological difficulties that are inherent to trying to explore the differences between the three main types of command hallucinations, namely that it was impossible to separate the groups as such a large proportion of those with command hallucinations reported multiple content. What the group comparisons therefore tell us is perhaps what the added burden is of each type of content. It is clear from the comparison of those with multiple commands versus one type of command only, that experiencing multiple content command hallucinations is associated with significantly greater levels of distress generally, and greater levels of distress that is directly related to the voices.

Although the results from these analyses are methodologically limited, there are some interesting findings that could serve to inform future research and guide the design of clinical interventions.

Interestingly, there were very few significant differences between those that did and did not report experiencing suicide commands and between those that did and did not report experiencing commands to harm themselves. It may be that there is very little exclusivity amongst these groups in that the majority of those reporting command hallucinations reported commands to harm or kill themselves (65% and 55% of the total sample of command hallucinators respectively) compared to those reporting commands to harm someone else (39% of the total sample). If individuals are therefore represented in both categories it decreases any difference between the groups.

The findings with regard to harm-other commands are perhaps easier to interpret. Whilst generally experiencing a greater degree of symptom severity, those that reported hearing harm-other commands did not appear to be experiencing a significantly greater level of

Results

psychotic symptoms than those without command hallucinations to harm others. They did, however, experience significantly more severe affective symptoms, a difference which appears to be underpinned by differences between the groups on how much guilt they experience on a day-to-day basis.

Guilt is an important factor, it would appear from these results that individuals with commands to harm others experience more feelings of guilt than those without commands to harm others. The nature of this analysis precludes any opportunity to hypothesise about the direction of causality. It may be, of course, that those who hear commands telling them, for instance, to kill another person feel guilty because of what they are hearing. However, an analysis of the individuals' original responses to the BPRS suggests that the guilt is not necessarily related to the content of the commands *per se* rather it is related to past life events or to the pain or distress caused to others as a result of hospital admission. Whilst this analysis was not concerned with the factors that drive or contribute to compliance, guilt is an important variable in understanding why individuals comply. The theories outlined briefly in chapter two suggest that guilt enhances the likelihood of compliance but this is when the guilt is specifically associated with non-compliance. What remains to be seen is whether any form of guilt increasing the risk of compliance or whether, in fact, guilt associated with extraneous variables or situations, or guilt associated with hearing a dangerous command actually serves as a protective factor against complying with the command.

Those with harm-other commands also showed a significantly greater belief that the voices they heard originated from an external source. Again, this is an important finding. It may be that the very nature of the content appears alien to the individual. However, it

Results

has also been previously found that those voices that are perceived to be of external origin are more likely to be appraised as 'real' and are more likely to be obeyed (see Junginger, 1996). Individuals with harm-other commands also reported significantly stronger beliefs that the voices they heard were malevolent in nature and that as a group they had significantly more resistant coping strategies. When between-group comparisons were made according to predominant content, those with predominantly self-harm commands reported the strongest beliefs about malevolence.

Previous studies have highlighted the importance of beliefs about self in the development and maintenance of voices and associated distress (Birchwood and Gilbert, 2004). Significant differences have also been found in the self belief of those that comply with command hallucinations. We were interested to discover whether there were any differences between individuals with varying content of commands in the perception of social rank. In this analysis, none of the between group comparisons returned significant differences when the social comparison scale was used. Furthermore, the effect sizes for all of the variables resulting from the social comparison scale were small. Examining the descriptive data for social rank, it would appear that the mean scores for all groups were on the low side.

5.5 What distinguishes compliers from non-compliers?

5.5.1 Introduction to hypotheses

Question four attempts to replicate the main body of previous research in the domain of command hallucinations by asking what distinguishes compliers from non-compliers.

Results

The question is approached in two different ways. The first analysis is an exact replication of the methodology used by previous studies whereby individuals are categorised as experiencing a command and as being a complier or a non-complier based on lifetime history of command hallucinations. For instance, if an individual heard a command telling them to kill their father ten years ago and they willingly followed the command, they would be classed in the first analysis as someone who had complied with a command to harm another person.

Utilising this methodology a number of significant differences have previously been detected, although the existing findings are far from unequivocal. The literature reviewed in chapter two suggested that compliance with command hallucinations is perhaps the result of an interaction between voice content, beliefs about self and beliefs about the voice.

Taking the most consistent findings we would predict that regardless of content, compliers will rate their voices to be significantly more malevolent and omnipotent than non-compliers. Previous studies have suggested that compliers also believe their voices to be benevolent. Although seemingly contradictory to beliefs about malevolence, we shall test whether compliers do believe the voice they hear to be more benevolent in nature. Based on our understanding of the experience of the voice hearer and the way in which the relationship with the voice can mirror real life relationships (Benjamin, 1989), we also predict that compliers will achieve higher scores on interpersonal suggestibility and will rate themselves as more compliant generally.

Results

In terms of specific content, we predict that if lifetime history of commands and associated behaviour is utilised, those that comply with harm-other commands will have significantly higher scores on measures of social rank (social comparison scale) than non-compliers. However, when current voice hearing experience is used we believe that this effect will be lost and there will be no differences between compliers and non-compliers with commands to harm others in terms of social rank as it is likely that this elevated self-esteem or self-belief reflects an improvement in mental state and psychological well-being.

With regard to suicide commands, we predict that compliers will have significantly lower scores on measures of social rank than non-compliers.

With regard to self-harm we would again predict that they will have significantly lower scores on measures of social rank than non-compliers.

5.5.2 Participants

The first approach to this analysis included all of those participants who reported ever having heard a dangerous command ($n = 54$). As in question three, a significant proportion of this group reported hearing multiple content commands. Between group analyses were conducted for each of the main types of content of dangerous command: harm other, suicide and harm-self. Individuals were assigned to groups according to the behaviour associated with each type of command. Using the criteria in the Command Hallucinations Rating and Interview Schedule (CHRIS), individuals were assigned to one of four categories of behavioural response: compliant, partial compliance, appeasement or non-compliance.

Results

The second approach examined only those who reported currently hearing a command hallucination ($n = 49$). Again between group analyses were conducted for each of the main types of content of dangerous command.

Table 5.23 displays the number of individuals in each of the categories of behavioural response to each type of dangerous command. Given that some of the categories have very small numbers and for the purposes of replication, cells were collapsed to create two categories: compliance (composed of compliance and partial compliance) and non-compliance (composed of appeasement and non-compliance).

Table 5.23: Frequency data for behavioural responses to each type of dangerous command

Voice Content	Variable	Past ($n = 54$)	Current ($n = 49$)
		N (%)	N (%)
Harm Other	Compliant	7 (31.8)	-
	Partial Compliance	6 (27.3)	6 (31.6)
	Appeasement	2 (9.1)	3 (15.8)
	Non-Compliance	7 (31.8)	10 (52.6)
Suicide	Compliant	27 (69.2)	9 (29)
	Partial Compliance	1 (2.6)	1 (3.2)
	Appeasement	5 (12.8)	10 (32.3)
	Non-Compliance	6 (15.4)	11 (35.5)
Self-Harm	Compliant	28 (93.3)	17 (65.4)
	Partial Compliance	1 (3.3)	2 (7.7)
	Appeasement	-	-
	Non-Compliance	1 (3.3)	7 (26.9)

Results

There were a number of variables of interest in exploring the factors underpinning compliance with command hallucinations: In terms of topography of voices we examined the frequency, duration, and volume of voices, beliefs regarding the origin of the voices, intensity of distress associated with the voice and degree of control the individual has over the voices (PSYRATS); the BAVQ-R provided information concerning the individuals beliefs about voices and associated coping strategies; the Social Comparison Scale provided information about the individuals beliefs about themselves in terms of perceived social rank. Finally we explored interpersonal suggestibility and compliance as measured by the Gudjonsson Suggestibility and Compliance Scales.

All groups were also compared on mental state in order to explore the role of current symptomatology (particularly delusional beliefs) on compliance.

5.5.3 Comparing compliers and non-compliers based on lifetime history of command hallucinations

5.5.3.1 Harm Other: Approach One (lifetime history of commands)

In total, 26 individuals reported a lifetime history of having heard a command to harm others. Fifteen of these were classified as compliers (either complied or partially complied with this particular command; 53% male), the remaining 11 were classified as non-compliers (36% male).

Results

Tables 5.24, 5.25 and 5.26 display the results from between group analyses of the differences between compliers and non-compliers on voice variables, beliefs about self, interpersonal behaviour and mental state respectively.

The findings in terms of the nature of the voices and the way in which they are perceived are similar to those found those who have previously adopted this methodological approach (Fox *et al*, 2004; Shawyer *et al*, 2008) in that compliers typically rate their voices as more malevolent and are significantly more resistant (in terms of their coping response to such voices) than non-compliers. There were no significant differences in terms of the topographical variables with the exception of volume where compliers on average, rated their voices to be significantly louder than non-compliers. Previous research has found that those voices that are perceived to be real and intrusive are more likely to be obeyed, using an historical approach to voices minimises the detection of this effect as those who have complied in the past may rate their voices according to their current beliefs (for instance, that perhaps the voice is related to themselves). Certainly in this cohort, those who complied with commands to harm others had a greater (though non-significant) tendency to rate their voices as originating from the self than non-compliers.

Results

Table 5.24: Comparison of voice variables of compliers and non-compliers with a lifetime history of harm-other commands

	Variable	Group	M	SD	Mean Rank	U	p	ES
BAVQ-R	Malevolence	Complier	12.79	5.62	14.32	59	.15	.37
		Non-Complier	10.73	5.50	11.32			
	Benevolence	Complier	3.07	4.37	11.39	55	.11	.27
		Non-Complier	4.36	5.14	15.05			
	Omnipotence	Complier	11.64	5.36	13.14	75	.91	.06
		Non-Complier	11.91	3.99	12.82			
	Resistance	Complier	22.36	3.71	15.54	42	.03	1.15
		Non-Complier	28.55	6.61	9.77			
	Engagement	Complier	3.43	5.69	11.39	55	.11	.31
		Non-Complier	5.82	6.94	15.05			
	Frequency	Complier	2.80	1.27	14.47	68	.44	.28
		Non-Complier	2.45	1.21	12.18			
	Duration	Complier	3.20	.94	14.43	69	.43	.34
		Non-Complier	2.82	1.25	12.23			
PSYRATS ¹	Volume	Complier	2.93	.70	16.20	42	.02	1.03
		Non-Complier	2.18	.75	9.82			
	Origin	Complier	2.73	1.16	13.10	77	.74	.16
		Non-Complier	2.91	1.04	14.05			
	Degree of distress	Complier	2.80	1.08	13.73	79	.85	.13
		Non-Complier	2.64	1.36	13.18			
	Control	Complier	2.80	1.15	13.77	79	.83	.06
		Non-Complier	2.73	1.10	13.14			

¹ Two-Tailed

Results

The results displayed in table 5.25, replicate the nature of results found by previous researchers in that those who have at some point complied with command hallucinations to harm others rate themselves to be of significantly higher social rank than those who do not comply with such commands. Compliers rated themselves to be of significantly higher social rank and to be significantly more attractive than non-compliers. They also rated themselves to have a higher degree of group fit (belongingness) than non-compliers but this finding did not reach significance.

In terms of suggestibility, only the total suggestibility score is reported here. There was little difference between compliers and non-compliers in terms of total suggestibility and in fact, non-compliers were on average slightly more suggestible than compliers. The mean scores on the other indices produced by the Gudjonsson Suggestibility Scale can be found in the appendix. On these indices, non-compliers yielded more initially but compliers displayed greater yield and a greater shift in their responses when they were placed under additional pressure. None of these findings reached statistical significance.

Results

Table 5.25: Comparison of Beliefs about Self and Interpersonal Behaviour of compliers and non-compliers with a lifetime history of harm-other commands

	Variable	Group	M	SD	Mean Rank	U	p	ES
SCS	Rank	Complier	18.87	7.43	16.03			
		Non-Complier	12.27	8.21	10.05	44	.02	.84
	Attractiveness	Complier	13.20	6.86	16.07			
		Non-Complier	8.55	6.68	10.00	44	.02	.69
	Group Fit	Complier	17.07	10.22	15.10			
		Non-Complier	12.45	5.29	11.32	59	.10	.57
Interpersonal Behaviour ¹	Suggestibility	Complier	8.21	4.76	12.50			
		Non-Complier	8.82	5.29	13.64	70	.35	.12
	Compliance	Complier	14.73	3.90	13.43			
		Non-Complier	14.91	3.11	13.59	82	.48	.05

¹ two tailed

There were no significant differences between compliers and non-compliers in terms of the severity of delusional beliefs as measured by either the suspiciousness sub-scale ($U = 59$, $p = .10$), or the unusual thoughts subscale ($U = 73$, $p = .25$) of the BPRS. In fact for both groups the mean score on both of these scales seemed relatively low; both suspiciousness and unusual thought scores were in the mild range for both groups.

The results shown in table 5.26 suggest that there are no significant differences in any aspect of mental state between those that have complied at some point with a command hallucination to harm others and those that have never complied.

Results

Table 5.26: Comparison of Mental State of compliers and non-compliers with a lifetime history of harm-other commands

	Variable	Group	M	SD	Mean Rank	U	p	ES
BPRS ¹	Affect	Complier	2.70	.67	13.97	76	.72	.09
		Non-Complier	2.64	.67	12.86			
	Activation	Complier	1.57	.51	13.73	79	.86	.32
		Non-Complier	1.44	.28	13.18			
	Retardation	Complier	1.59	.49	14.10	74	.64	.04
		Non-Complier	1.57	.57	12.68			
	Psychosis	Complier	2.06	.50	12.03	61	.25	.42
		Non-Complier	2.27	.51	15.50			

¹ Two-tailed

5.5.3.2 Harm Other: Approach Two (current voice-hearing experience)

In total, 19 individuals reported currently hearing commands to harm others. Thirty-two per cent of these reported complying with the command (either compliance or partial compliance). The remaining 68% were classified as non-compliers.

Tables 5.27, 5.28 and 5.29 display the findings from between group analyses (using non-parametric statistical techniques) of the differences between compliers and non-compliers on voice variables, beliefs about self and interpersonal behaviour and general mental state based on their current experience of command hallucinations.

In terms of voice variables, there were no significant differences between compliers and non-compliers with respect to topographical variables. There were, however, some

Results

interesting observations such as non-compliers reported hearing their voices slightly more often and for longer periods of time. They also indicated that their voices tended to be louder and more 'real' in that they were on average attributed more towards an external origin.

With regard to beliefs about voices (also table 5.27), compliers - as expected - rated their voices to be significantly more malevolent and omnipotent than non-compliers. There were no significant differences in coping strategies between the two groups. It would appear that we have replicated Beck-Sander, Birchwood and Chadwick's (1997) finding that compliers rate their voices to be more benevolent, although this difference did not reach significance.

Results

Table 5.27: Comparison of Voice Variables of compliers and non-compliers with current harm-other commands

	Variable	Group	M	SD	Mean Rank	U	P	ES
BAVQ-R	Malevolence	Complier	16.17	2.14	12.50	18	.04	.94
		Non-Complier	13.33	3.68	8.00			
	Benevolence	Complier	5.33	5.35	11.42	25	.14	.77
		Non-Complier	2.08	2.61	8.54			
	Omnipotence	Complier	16.00	2.53	12.33	19	.05	.93
		Non-Complier	13.00	3.79	8.08			
	Resistance	Complier	22.50	2.07	9.67	35	.46	.13
		Non-Complier	22.17	3.01	9.42			
	Engagement	Complier	4.17	5.08	9.50	36	1.00	.28
		Non-Complier	3.00	2.95	9.50			
	Frequency	Complier	2.67	1.03	8.58	31	.43	.43
		Non-Complier	3.08	.86	10.65			
PSYRATS ¹	Duration	Complier	2.83	.75	7.50	24	.16	.68
		Non-Complier	3.38	.87	11.15			
	Volume	Complier	2.67	.82	9.25	35	.67	.12
		Non-Complier	2.77	.83	10.35			
	Origin	Complier	2.83	1.47	9.50	36	.78	.42
		Non-Complier	3.31	.63	10.23			
	Degree of distress	Complier	3.33	1.21	11.92	28	.28	.32
		Non-Complier	3.00	.82	9.12			
	Control	Complier	3.00	.89	8.67	31	.45	.38
		Non-Complier	3.31	.75	10.62			

¹ Two-Tailed

Results

As expected when current voice hearing experiences only are considered, the effect of self-reported superior social rank as found by previous researchers disappears. One-tailed statistical analyses detected no significant differences between compliers and non-compliers in terms of their beliefs about themselves. Contrary to our hypotheses, there were no significant differences between the interpersonal suggestibility of compliers and non-compliers. Compliers did, however, rate themselves to be significantly more compliant on the Gudjonsson Compliance Scale. The magnitude of this effect (1.71) suggests that this could be a very useful guide for clinicians who are assessing risk of compliance.

Table 5.28: Comparison of Beliefs about Self and Interpersonal Behaviour of compliers and non-compliers with current harm-other commands

	Variable	Group	M	SD	Mean Rank	U	P	ES
SCS	Rank	Complier	10.17	4.71	8.67			
		Non-Complier	13.54	8.12	10.62	31	.24	.51
	Attractiveness	Complier	8.33	4.46	11.17			
		Non-Complier	8.23	6.71	9.46	32	.26	.02
	Group Fit	Complier	9.50	6.66	8.50			
		Non-Complier	13.62	10.03	10.69	30	.21	.49
Interpersonal Behaviour ¹	Suggestibility	Complier	6.80	4.21	6.20			
		Non-Complier	9.92	4.03	10.17	16	.17	.76
	Compliance	Complier	18.67	.82	14.92			
		Non-Complier	14.31	3.52	7.73	10	.004	1.71

¹ Two-Tailed

Results

The findings displayed in table 5.29 suggest that the only significant difference between the mental state of compliers and non-compliers is on the domain of affect. On this domain, compliers appear significantly more distressed than non-compliers. An inspection of the individual symptom scores revealed only one significant difference between the groups: compliers report experiencing significantly more guilty feelings than non-compliers ($U = 13, p < .01$).

Table 5.29: Comparison of General Mental State of compliers and non-compliers with current harm-other commands

	Variable	Group	M	SD	Mean Rank	U	P	ES
BPRS	Affect	Complier	3.29	.29	13.92	16	.04	1.25
		Non-Complier	2.81	.46	8.19			
	Activation	Complier	1.76	.60	12.00	27	.29	.61
		Non-Complier	1.45	.39	9.08			
	Retardation	Complier	1.75	.66	11.00	33	.59	.27
		Non-Complier	1.59	.52	9.54			
	Psychosis	Complier	2.44	.87	10.58	36	.76	.25
		Non-Complier	2.26	.56	9.73			

5.5.3.3 Suicide: Approach One (lifetime history of commands)

Based on a lifetime history of command hallucinations, 39 individuals reported hearing command hallucinations to commit suicide. At the point of interview, 72% ($n = 28$) of these were categorised as compliers (either complied or partially complied). The remaining 28% ($n = 11$) were categorised as non-compliers. Fifty-six per cent of

Results

compliers were male. Those that did not comply were significantly more likely to be female ($\phi = .42, p < 0.01$).

Tables 5.30, 5.31 and 5.32 display the findings from between group analyses using non-parametric statistical techniques for voice variables, beliefs about self and interpersonal behaviour and general mental state.

In terms of beliefs about voices, there were very few differences between the groups. Those who have ever complied with a command to commit suicide rate their voices as more omnipotent than non-compliers, although the difference between the two groups is not significant. In terms of the mean scores, it is interesting that compliers are generally less resistant of their voices (something which according to the general cognitive behavioural model of voices is deemed to be a positive profile), they also tend to engage more.

In terms of topographical variables, those who have ever complied report hearing voices significantly more often than non-compliers, there were also some trends towards those that had ever complied hearing voices for longer periods of time, believing the voices to be more related to themselves and feeling that they had less control over the voices (indicated by a higher score on the PSYRATS).

Results

Table 5.30: Comparison of Voice Variables of compliers and non-compliers with a lifetime history of suicide commands

	Variable	Group	M	SD	Mean Rank	U	P	ES
BAVQ-R	Malevolence	Complier	12.44	5.85	20.39			
		Non-Complier	12.36	4.39	17.32	125	.27	.02
	Benevolence	Complier	3.56	4.92	19.31			
		Non-Complier	3.27	3.52	19.95	144	.44	.07
	Omnipotence	Complier	12.93	5.32	21.11			
		Non-Complier	11.18	4.26	15.55	105	.08	.36
	Resistance	Complier	18.63	6.61	18.24			
		Non-Complier	21.55	3.21	22.59	115	.14	.56
	Engagement	Complier	4.11	5.72	19.70			
		Non-Complier	3.09	3.51	19.00	143	.43	.21
	Frequency	Complier	2.75	1.18	21.80			
		Non-Complier	2.09	1.14	15.41	104	.05	.57
PSYRATS ¹	Duration	Complier	3.11	.99	21.57			
		Non-Complier	2.55	1.13	16.00	110	.07	.53
	Volume	Complier	2.50	.84	20.05			
		Non-Complier	2.45	.69	19.86	153	.48	.07
	Origin	Complier	2.29	1.12	18.30			
		Non-Complier	2.91	1.14	24.32	107	.06	.55
	Degree of distress	Complier	2.82	1.25	20.50			
		Non-Complier	2.64	1.21	18.73	140	.32	.15
	Control	Complier	3.04	1.07	21.55			
		Non-Complier	2.64	.81	16.05	111	.08	.42

¹ Two-Tailed

Results

The results displayed in table 5.31 show that individuals who comply with commands to kill themselves rate themselves lower on all aspects of social rank; they rate themselves as more inferior and less attractive than non-compliers. They also report a significantly lower sense of group fit than non-compliers. There were no significant differences in terms of interpersonal behaviour.

Table 5.31: Comparison of Beliefs about Self and Interpersonal Behaviour of compliers and non-compliers with a lifetime history of suicide commands

	Variable	Group	M	SD	Mean Rank	U	P	ES
SCS	Rank	Complier	13.64	6.63	19.70	146	.40	.15
		Non-Complier	14.73	7.86	20.77			
	Attractiveness	Complier	8.29	5.70	18.59	115	.10	.36
		Non-Complier	10.45	6.38	23.59			
	Group Fit	Complier	11.50	7.86	18.05	100	.04	.55
		Non-Complier	16.09	8.83	24.95			
Interpersonal Behaviour ¹	Suggestibility	Complier	8.81	5.34	19.46	131	.34	.13
		Non-Complier	8.09	5.80	17.91			
	Compliance	Complier	15.32	3.01	20.07	152	.48	.20
		Non-Complier	14.55	4.48	19.82			

¹ Two-Tailed

Table 5.32 presents the findings pertaining to general mental state. Compliers were observed to have a greater degree of symptomatology on all composites except retardation. None of the differences between the groups achieved significance although the affect and psychosis composites were approaching significance.

Results

Table 5.32: Comparison of General Mental State of compliers and non-compliers with a lifetime history of suicide commands

	Variable	Group	M	SD	Mean Rank	U	P	ES
BPRS	Affect	Complier	2.80	.77	22.13	95	.06	.67
		Non-Complier	2.32	.65	14.59			
	Activation	Complier	1.52	.49	21.41	115	.21	.59
		Non-Complier	1.30	.20	16.41			
	Retardation	Complier	1.51	.55	19.50	140	.66	.02
		Non-Complier	1.52	.48	21.27			
	Psychosis	Complier	2.33	.78	22.18	93	.06	.78
		Non-Complier	1.86	.43	14.45			

5.5.3.4 Suicide: Approach Two (current command hallucinations)

Based on current experience, 32 individuals reported hearing a command hallucination instructing them to commit suicide. Thirty four per cent of those reporting commands to commit suicide were classified as compliers (either complied or partially complied). The remaining 66% were classified as non-compliers.

Tables 5.33, 5.34 and 5.35 display the results from between group analyses using non-parametric statistical techniques comparing compliers and non-compliers on voice variables, beliefs about self and interpersonal behaviour, and general mental state.

Based on current voice hearing experience the results suggest that those that comply with command hallucinations to commit suicide believe their voices to be significantly more malevolent and omnipotent. Interestingly they also on average rate their voices to be

Results

more benevolent, although the large standard deviation suggests that the variability amongst the group in terms of this particular belief prevents this from being either a robust or a significant finding.

As with the previous analysis, compliers were significantly more engaged with their voices; a finding that is perhaps contrary to the general cognitive behavioural model and a point that will be explored in more detail in the interim discussion.

Compliers tended to hear voices more frequently and for longer periods of time than non-compliers and they were significantly more distressed by the voices they heard and felt that they had significantly less control over the experience. The effect sizes on these variables suggest that these are really quite robust findings that again could guide clinicians in assessing and managing risk.

Results

Table 5.33: Comparison of Voice Variables of compliers and non-compliers with current command hallucinations to commit suicide

	Variable	Group	M	SD	Mean Rank	U	P	ES
BAVQ-R	Malevolence	Complier	14.89	3.69	20.22			
		Non-Complier	12.43	4.77	13.48	52	.02	.58
	Benevolence	Complier	5.00	6.21	17.00			
		Non-Complier	2.10	2.59	14.86	81	.27	.61
	Omnipotence	Complier	15.89	3.30	20.56			
		Non-Complier	12.19	4.77	13.33	49	.02	.90
	Resistance	Complier	21.33	4.30	17.00			
		Non-Complier	20.14	4.33	14.86	81	.27	.28
	Engagement	Complier	5.56	5.29	21.11			
		Non-Complier	2.00	2.85	13.10	44	.01	.84
	Frequency	Complier	3.00	1.00	19.77			
		Non-Complier	2.33	1.24	14.79	80	.14	.59
PSYRATS ¹	Duration	Complier	3.36	.81	18.77			
		Non-Complier	2.95	1.02	15.31	91	.29	.45
	Volume	Complier	2.55	1.04	16.05			
		Non-Complier	2.62	.74	16.74	108	.75	.08
	Origin	Complier	2.64	1.12	17.32			
		Non-Complier	2.48	1.17	16.07	107	.71	.14
	Degree of distress	Complier	3.64	.51	20.82			
		Non-Complier	2.81	1.12	14.24	68	.04	.95
	Control	Complier	3.82	.41	23.91			
		Non-Complier	2.62	1.02	12.62	34	.001	1.54

¹ Two-Tailed

The findings relating to beliefs about self and interpersonal behaviour are displayed in table 5.34. Compliers rated themselves lower on all aspects of the social comparison

Results

scale. They rated themselves as significantly more inferior to others and significantly less attractive than others. There was a trend towards compliers reporting a lower sense of group fit. The groups were remarkably similar in terms of suggestibility and compliance.

Table 5.34: Comparison of Beliefs about Self and Interpersonal Behaviour of compliers and non-compliers with current command hallucinations to commit suicide

	Variable	Group	M	SD	Mean Rank	U	p	ES
SCS	Rank	Complier	10.00	6.13	12.82	75	.05	.58
		Non-Complier	13.71	6.65	18.43			
	Attractiveness	Complier	4.91	3.39	10.86	54	.006	.92
		Non-Complier	9.67	6.47	19.45			
	Group Fit	Complier	10.00	7.44	13.23	80	.08	.45
		Non-Complier	13.62	8.63	18.21			
Interpersonal Behaviour ¹	Suggestibility	Complier	9.10	4.58	14.45	90	.32	.12
		Non-Complier	9.70	5.31	16.02			
	Compliance	Complier	16.09	2.59	15.91	109	.40	.15
		Non-Complier	15.62	3.64	16.81			

¹ Two-Tailed

The only difference between the groups in terms of general mental state was on the affect domain where those that complied with command hallucinations to commit suicide were significantly more distressed than non-compliers. An examination of the individual symptom scores reveals that compliers experienced greater severity of symptoms on all

Results

symptoms in this domain except guilt. Unsurprisingly, the greatest difference between the groups is on the severity of suicidality on the BPRS ($U = 49.5$, $p < .005$).

Table 5.35: Comparison of General Mental State of compliers and non-compliers with current command hallucinations to commit suicide

	Variable	Group	M	SD	Mean Rank	U	p	ES
BPRS	Affect	Complier	3.21	.49	21.32	63	.04	1.02
		Non-Complier	2.54	.79	13.98			
	Activation	Complier	1.52	.51	18.95	89	.28	.55
		Non-Complier	1.31	.19	15.21			
	Retardation	Complier	1.30	.31	13.09	78	.13	.66
		Non-Complier	1.63	.63	18.29			
	Psychosis	Complier	2.29	.83	19.32	85	.21	.45
		Non-Complier	1.96	.55	15.02			

5.5.3.5 Harm-Self: Approach One (lifetime history of commands)

Based on lifetime experience of command hallucinations, thirty participants reported hearing commands to harm themselves. Similarly to previous research in this area, it appears to be very difficult to find individuals who have not, at some point in their voice hearing career, complied with such commands. In this sample, 97% ($n = 29$) complied with commands to self-harm.

Such was the prevalence of compliance amongst this sample that an analysis using approach one although feasible, was rendered meaningless.

Results

As displayed in table 5.23, even when a continuum approach to compliance is used (that is where all four categories of behavioural response are represented), 93% remain in the category of compliance.

Approach two offers more variability in terms of the behavioural response to command hallucinations to self-harm. Based on current experience of command hallucinations, 27 individuals reported hearing commands with a self-harming content. Of these 27, 74% were categorised as compliers (either complaint or partially compliant; 44% male), with the remaining 26% ($n = 7$) being categorised as non-compliant. Whilst non-compliance in this analysis represents both appeasement and non-compliant behaviours, in this instance nobody described appeasing commands to harm themselves. Non-compliers were predominantly (85%) though not significantly female ($\phi = .28, p = .15$).

Tables 5.36, 5.37, and 5.38 display the findings from a series of between group comparisons of compliers and non-compliers. The tables pertain to voice variables, beliefs about self and interpersonal behaviour and general mental state respectively.

In terms of beliefs about voices, those who currently complied with command hallucinations to harm themselves achieved on average higher scores on all the beliefs about voices subscales with the exception of engagement. There was a marked difference on the malevolence sub-scale and a significant difference on the omnipotence scale.

Compliers also reported a greater degree of severity in terms of topographical variables. They reported hearing voices significantly more frequently and for significantly longer durations than non-compliers. As with other compliers (see above) they were significantly more distressed by their voice hearing experience.

Results

Table 5.36: Comparison of Voice Variables of compliers and non-compliers with current command hallucinations to self-harm

	Variable	Group	M	SD	Mean Rank	U	p	ES
BAVQ-R	Malevolence	Complier	14.32	2.52	14.08			
		Non-Complier	12.00	6.40	11.98	56	.26	.48
	Benevolence	Complier	3.95	3.57	14.61			
		Non-Complier	3.14	4.49	10.50	46	.11	.20
	Omnipotence	Complier	14.68	2.98	15.53			
		Non-Complier	10.29	4.68	8.00	28	.01	1.12
	Resistance	Complier	21.79	4.10	14.82			
		Non-Complier	19.86	3.81	9.93	42	.07	.74
	Engagement	Complier	3.16	3.01	14.26			
		Non-Complier	3.43	4.58	11.43	52	.20	.07
PSYRATS ¹	Frequency	Complier	3.25	.97	16.13			
		Non-Complier	1.71	1.50	7.93	28	.007	1.22
	Duration	Complier	3.45	.83	15.58			
		Non-Complier	2.57	1.13	9.50	39	.003	.89
	Volume	Complier	2.80	.70	14.85			
		Non-Complier	2.43	.98	11.57	53	.15	.43
	Origin	Complier	2.65	.93	14.73			
		Non-Complier	2.29	1.11	11.93	56	.20	.35
	Degree of distress	Complier	3.40	.88	15.40			
		Non-Complier	2.57	1.27	10.00	42	.05	.76
	Control	Complier	3.30	.80	14.80			
		Non-Complier	2.57	1.62	11.71	54	.17	.57

¹ Two-Tailed

Results

Surprisingly, there were very few differences (as shown in table 5.37) between the groups in terms of their beliefs about self and interpersonal behaviour. None of these variables approached statistical significance.

Table 5.37: Comparison of Beliefs about Self and Interpersonal Behaviour of compliers and non-compliers with current command hallucinations to self-harm

	Variable	Group	M	SD	Mean Rank	U	p	ES
SCS	Rank	Complier	12.35	6.68	14.30			
		Non-Complier	12.29	8.07	13.14	64	.37	.01
	Attractiveness	Complier	7.40	5.12	13.70			
		Non-Complier	8.86	6.82	14.86	64	.37	.24
	Group Fit	Complier	11.75	8.33	13.48			
		Non-Complier	13.43	9.40	15.50	56	.28	.19
Interpersonal Behaviour ¹	Suggestibility	Complier	8.83	4.18	12.81			
		Non-Complier	8.00	4.86	11.58	49	.36	.18
	Compliance	Complier	15.85	3.30	14.73			
		Non-Complier	15.14	2.41	11.93	56	.21	.25

¹ Two-Tailed

Results

Table 5.38: Comparison of General Mental State of compliers and non-compliers with current command hallucinations to self-harm

	Variable	Group	M	SD	Mean Rank	U	p	ES
BPRS	Affect	Complier	2.95	.66	16.10	48	.10	.65
		Non-Complier	2.49	.76	10.50			
	Activation	Complier	1.59	.51	16.50	40	.04	.89
		Non-Complier	1.24	.24	9.50			
	Retardation	Complier	1.43	.51	14.20	74	.76	.15
		Non-Complier	1.50	.41	15.25			
	Psychosis	Complier	2.38	.70	17.08	29	.008	1.19
		Non-Complier	1.74	.29	8.06			

Table 5.38 displays the findings relating to the general mental state of the two groups as measured by the BPRS composite scores. Compliers were observed to have a higher degree of symptomatology on all composites other than retardation however they had significantly more severe symptoms of activation and psychosis. A closer inspection of the group scores on individual symptoms reveals that in terms of activation, compliers had significantly more severe bizarre behaviour ($U = 48$, $p < .05$) and in terms of psychosis their hallucinatory experience was rated as more severe ($U = 38$, $p < .05$).

5.5.4 Interim Discussion

The aim of this analysis was multifaceted. The main aim was to explore the differences between those that comply with command hallucinations and those that do not comply. However, the secondary aim was to explore whether the use of different methodologies would alter the apparent 'profile' of compliers and non-compliers. We hypothesised that when historical experiences of commands and associated behaviour are taken into

Results

account important differences between the groups would be lost perhaps as a result of difficulties recalling past hallucinatory experiences and the response to them at the time. Furthermore, we suggested that previous findings describing inflated self-belief and self-reported social rank in those that have historically complied with commands to harm others may actually be a confound of those individuals being better, or conversely being 'proud' of their past behaviour; or of having a standing in the community in which they reside.

A further feature of this question was to analyse according to content. Despite several high profile studies (McNiel, Eisner, and Binder, 2000; Monahan, Steadman, Silver, Appelbaum, Robbins, Mulvey, Roth, Grisso, and Banks, 2001) emphasising the need to control for voice content, many studies (Beck-Sander *et al*, 1997; Fox *et al*, 2004; Shawyer *et al*, 2008) have either analysed just harm-other and drawn conclusions from this group or have grouped self-harm and suicide commands together in a category of harm to self.

An analysis of historical responses to self-harm was abandoned after discovering that the vast majority (98%) of individuals that have heard command hallucinations to harm themselves have, at some point, complied. However, in terms of harming others and suicide, the two methodological approaches did indeed produce different profiles of results.

It is of little surprise that there were no significant differences between the mental state of compliers and non-compliers using lifetime history as there is the obvious confound in using current mental state to consider past behaviour. However, we were interested to

Results

see whether this would change when only those with current command hallucinations were included. Indeed, differences in mental state were revealed. It was clear that those that are currently complying with command hallucinations are significantly more distressed but that this distress manifests in different ways with each type of command.

In all types of command, differences became more marked and often more significant when current voice hearing experience only was analysed.

In terms of the main aim of this question, each content will be dealt with in order and I will draw attention to the factors that appear to distinguish compliers from non-compliers. Only the results from approach two will be used as, according to the above findings, these are perhaps the most methodologically robust.

5.5.4.1 Harm-Other

Approximately one third of those with harm-other commands were classified as compliers. Interestingly, if pure dichotomies (based on, for instance, behavioural observation or case note data) were used an extra 27.3% of individuals would have been classified as non-compliers. However, these are a group of individuals who had taken significant steps towards complying with a dangerous command; they were a group who had felt unable to resist the voice completely. Intuitively, this group remain at greater risk of complying, yet in previous research their profile would have been subsumed in the non-complier category.

In this sample, those that comply with harm-other commands tended to rate their voices as louder and more 'real', in that the origin of the voice was attributed to an external

Results

source. They also rated their voices to be significantly more malevolent and omnipotent. In keeping with the cognitive behavioural model, compliers (with stronger beliefs about malevolence) resisted the voices significantly more than non-compliers.

Following on from question three, compliers were found to have significantly more severe levels of self-reported guilt as measured by the BPRS. It is very difficult to draw any clear conclusions about this finding. It may be that this group actually experience a greater degree of antisocial content in their voices and they feel guilty about this (there is a ceiling effect on the PSYRATS where the presence of command hallucinations automatically attracts the highest score, more severe commands are grouped together with milder commands). It could also be that as a result of their compliant behaviour, they feel more guilt than those who have been able to resist the voices. However, as described in question three, guilt appeared to be more related to past life events and being unwell and the burden that this might cause others. How such guilt might be related to compliance is difficult to consider but given the individuals responses to the guilt questions pertained more to general life events, it seems unlikely that higher levels of guilt cause compliance.

We failed to replicate previous findings that those with concurrent delusional beliefs are more likely to comply with command hallucinations. This finding has generally only been found in those that harm others, so we only explored the individual symptoms in this group. Generally, our sample had relatively low scores on suspiciousness, unusual thoughts and grandiosity. It may be that a different statistical approach (that is exploring group membership according to the presence or absence of delusional beliefs) may have helped us to explore this relationship in more detail. Nevertheless, the lack of significant

Results

difference between the groups in terms of suspiciousness, unusual thoughts and grandiosity (all of which provide an assessment of the presence of delusional beliefs) suggests that we did not need to control for delusional beliefs when considering which other factors might have contributed towards compliance with commands to harm others.

Although there were no differences between compliers and non-compliers in terms of self-reported social rank, compliers did rate themselves as generally more compliant (Gudjonsson Compliance Scale).

5.5.4.2 Suicide

Although 72% of the sample had complied with a command to commit suicide in the past, one third reported currently complying with command hallucinations to commit suicide. As with harm-other, compliers rated their commands to be more malevolent and omnipotent but surprisingly they also reported being significantly more engaged with the voices. The general premise of the cognitive behavioural model of voices is that beliefs about malevolence are generally associated with resistant coping strategies but this often has the paradoxical effect of increasing voice activity, decreasing the sense of control over the voice and thereby maintaining voice activity, beliefs about voices and ultimately distress. It is interesting therefore to see malevolence and omnipotence associated with engagement. Based on the current findings, a high engagement score would appear to place an individual at risk of complying with command hallucinations to commit suicide. Perhaps this is because for compliers the voices commands are congruent with their own thoughts or wishes. This hypothesis is perhaps supported by the finding that compliers report having significantly greater suicidal ideation and intent on the BPRS, generally

Results

feel inferior to others and report feeling less likely to fit in (as indicated by significantly lower rank and attractiveness scores on the Social Comparison Scale). It is therefore somewhat intuitive that compliers respond positively to items such as “I willingly follow what my voice tells me to do”. In terms of clinical intervention, this finding suggests that some caution should be exercised when exploring the benefits of engaging (in terms of coping strategies) with command hallucinations to commit suicide.

Also somewhat contrary to the cognitive behavioural model, despite being more engaged with the voice, compliers reported hearing voices more frequently and for longer than non-compliers and were significantly more distressed by their voice hearing experience. They also felt that they had significantly less control over the voices.

5.5.4.3 Self-Harm

As with the two preceding groups, those that complied with command hallucinations to harm self had significantly stronger beliefs about malevolence and omnipotence. They also appeared to return a profile of being physically overwhelmed by the voices. They reported hearing voices significantly more frequently and for longer periods of time than non-compliers. They were, accordingly, significantly more distressed by their voice hearing experience.

Surprisingly, there were no significant differences in beliefs about self between compliers and non-compliers. Although this was contrary to what was expected but is a very important finding. Previously those with self-harm commands had been grouped together with those with command hallucinations to commit suicide. Yet the compliers in the two

Results

groups appear to have markedly different profiles in terms of their beliefs about themselves. The low sense of social rank that is associated with complying with suicide commands was not observed in those that complied with self-harm commands. Compliance with the respective commands therefore appears to be fuelled by different factors or compliance serves a different function for suicide and self-harm. Such functions can be examined using the CHRIS.

It would appear then that there are some features that are common to all compliers regardless of content, that is those with significantly stronger beliefs about malevolence and omnipotence are more likely to comply with the commands they hear. For all groups, compliers scored on average higher scores on the benevolence sub-scale. Beck-Sander *et al* (1997) reported that those who believe their voices to be benevolent in nature and purpose were more likely to comply with the voice's commands. In all of the samples described here, there was (relative to the mean scores) quite a large degree of variability amongst compliers beliefs about benevolence. It is difficult therefore to draw any conclusions about this finding. It could be that there are two groups of compliers, those that comply because they believe the voice to be benevolent and that therefore even though the content is dangerous they might somehow be protected from the consequences of complying. On the other hand there may be a group who believing the voice to be malevolent, comply for fear of what would happen if they chose not to comply. Again, this detail would be detected by the CHRIS which permits individual formulations of the reasons for compliance. However, in order to detect significant differences amongst such sub-groups (if indeed such groups exist) substantially larger sample sizes would have to have been recruited.

Results

The finding that for all groups, compliers hear voices more frequently and for longer periods of time, and also that generally compliers are more distressed by their voice hearing experience and feel unable to control the hallucinatory experience is relatively robust and highlights an important point for intervention. Perhaps compliance affords some respite from the voices and can therefore be conceptualised as a safety behaviour (as suggested by Byrne *et al*, 2006) or perhaps compliance is the result of the sheer pressure placed on the individual by the voice. Cognitive behavioural therapy for voices generally does not aim to eliminate the voices but attempts to modify the beliefs an individual holds about the voices. The findings presented here suggest that in addition to attempting belief modification, significant efforts should be made to alter the intensity of the voice hearing experience, this in turn should help to alter the individual's sense of control over the experience. Such interventions might include pharmacological approaches but could equally rely upon practical coping strategies to reduce the volume, frequency and duration of voice (see Falloon and Talbot, 1989).

Contrary to our hypotheses compliers were no more suggestible or compliant (in terms of their general interpersonal behaviour) than non-compliers with the exception of those complying with harm other commands who were significantly more compliant. It may be that although we felt that suggestibility and compliance bore some resemblance to the interpersonal pressure that can be placed by a voice on to the voice hearer, the conceptual link is not close enough. However, it may also be that the measures were not administered sternly enough to recreate the interpersonal pressure that is required to elicit suggestibility. This is an example of where the ethical needs of a study confound/modify the outcome variable.

5.6 Question Five: Predicting Future Compliance

5.6.1 Introduction

The longitudinal element of this study permitted an analysis of the factors that could predict future compliance with command hallucinations. There are few existing prospective studies of the behaviour associated with command hallucinations. Those that do exist have tended to focus on harm or violence towards others (Monahan *et al*, 2001; Rogers, 2004). It is clear from the data presented so far that very few individuals that report command hallucinations experience just one type of command and that commands may interact with one another minimising or enhancing risk. Furthermore, the data presented here on the differences between compliers and non-compliers suggest that whilst there are factors that are common to all types of command (beliefs about malevolence and omnipotence) there are additional factors that appear to be specific to the type of command.

5.6.2 Participants

Forty nine individuals who reported hearing command hallucinations in the month preceding the research interview were assessed at baseline. Four of these reported innocuous content only and were not followed up. One individual dropped out of the study but gave permission for follow-up information to be obtained from the key-worker and from case notes so the individual's data is complete over the course of the study. One individual was not available for follow-up at six months as they were incarcerated at the time and were not contactable. The keyworker did not have any follow-up

Results

information but did inform us that the index offence was apparently not related to the individual's mental health and was not in any way related to command hallucinations.

Two individuals (one with harm-other content and one with self-harm content) did not complete the six month follow up interviews in time for their data to be included in the analysis (although the data is now available).

5.6.3 Results

Throughout this thesis there has been an emphasis on correctly describing an individual's response to command hallucinations. An analysis of the results in table 5.39, show that a simple dichotomous conceptualisation of compliance would potentially classify all of those with harm-other commands as non-compliers (as they had not utterly complied with the command), perhaps suggesting that they were not at any risk of hurting anyone else. Yet, a third had partially complied and a small proportion continued to partially comply one- and six-months later. Furthermore, 15% were at risk of harming themselves in some way in an attempt to appease the command, thus they too were not risk free.

A similar situation is observed with both suicide and harm-self commands where, for example in the case of suicide 72% would be have been classified as non-compliers at baseline but 38% remained at some form of heightened risk either by partially complying or appeasing the voice (by engaging in self-harm behaviour). With regards to self-harm the majority were fully compliant at baseline, but 15% would have been misclassified as a non-compliant at one month follow-up.

Results

Table 5.39: Behaviour associated with command hallucinations over time.

Voice Content	Behaviour	Current (n = 49)	1 Month (n = 48)	6 Month (n = 46)
		N (%)	N (%)	N (%)
Harm Other	Compliant	-	-	-
	Partial Compliance	6 (31.6)	2 (10.5)	1 (5.3)
	Appeasement	3 (15.8)	3 (15.8)	3 (15.8)
	Non-Compliance	10 (52.6)	14 (73.7)	14 (73.7)
Suicide	Compliant	9 (29)	5 (15.6)	1 (3.1)
	Partial Compliance	2 (6.3)	3 (9.4)	3 (9.4)
	Appeasement	10 (31.3)	6 (18.8)	9 (28.1)
	Non-Compliance	11 (34.4)	18 (56.3)	19 (59.4)
Self-Harm	Compliant	18 (66.7)	13 (48.1)	12 (44.4)
	Partial Compliance	2 (7.4)	4 (14.8)	3 (11.1)
	Appeasement	-	-	-
	Non-Compliance	7 (25.9)	10 (37.0)	10 (37.0)

The original intention of this final analysis was to determine which variables would predict future compliance with dangerous command hallucinations to harm self or others. Unfortunately the feasibility of this analysis was marred by two issues. The first issue is that of sample size, although data were available for 49 individuals with command hallucinations and longitudinal data was available for the vast majority of these participants, when the responses are split into type of commands and then further into the various behavioural responses, the resulting sample sizes preclude the majority of analyses. Even when the data are regrouped into dichotomies of compliance, the sample sizes in the ‘harm other’ category do not lend themselves to a meaningful analysis as at six months only one individual would have fallen into the compliant group.

The second issue is, of course, the ethical duties of the researcher when conducting interviews and the clinical responsibility of others. There is little doubt that in some

Results

cases, participating in the research project could have modified the outcome data. Furthermore, all participants received treatment of usual and in a study of this nature there were no restrictions placed on the interventions that could be offered during the follow-up period.

Those individuals that had been experiencing command hallucinations at the time of the research interview and were residing in forensic inpatient facilities (4% of sample) remained in such facilities. A further 16% were admitted to or remained in a community inpatient facility in the period between baseline assessment and follow-up; almost 20% had an alteration to their medication regime (all increased); 29% participated in some form of CBT (hearing voices groups or individual CBT for psychotic symptoms); and 8% received increased support (in the form of admission to day care, provision of a support worker, more frequent visits from a Community Psychiatric Nurse). Indeed, just 14% of the sample ($n = 7$) did not receive any changes to their care plan. Clearly such changes could have influenced our outcome variables.

What follows are the analyses that were felt to be meaningful although it is likely that they are significantly underpowered. These analyses therefore represent, at best, an exploratory approach.

A number of factors were taken into consideration when deciding which variables to include in the exploratory analyses. Firstly models that were presented in the two introductory chapters were used to provide a theoretical basis for explorations. Secondly, only those variables that were found to be significantly different in univariate analyses of

Results

compliers and non-compliers were entered into regression equations. Finally, we had to consider statistical factors, in particular multicollinearity.

5.6.4 Regression Analyses

5.6.4.1 Predicting Compliance with Harm-Other Commands

There were insufficient sample sizes to conduct this analysis on either the one month or six month follow-up data.

5.6.4.2 Predicting Compliance with Suicide Commands

Despite having a very rich data set, the behavioural response to command hallucinations to commit suicide had to be reduced to a dichotomous variable in order that a meaningful statistical analysis could be conducted.

The most appropriate regression model for data of this nature is logistic regression.

Results from univariate analysis suggest that, at baseline, those that have been categorised as complying with commands to commit suicide (although had not completed suicide – see CHRIS manual for further information) achieve higher scores on the beliefs about voices sub-scales of malevolence, omnipotence and engagement; have significantly lower scores on the attractiveness and rank sub-scales of the social comparison scale; and have significantly less control over the voice hearing experience. Compliers also present with significantly more severe suicidality than non-compliers.

Results

Although in the cognitive behavioural model, malevolence and omnipotence are deemed to be conceptually distinct, in this population the two constructs showed a high degree of association ($R = .82$, $p < 0.001$) such that they could be considered collinear (Bryman and Cramer, 1997). For the purposes of this analysis only malevolence was included as a predictor variable.

Similarly, attractiveness and rank were highly correlated ($R = .82$, $p < .001$) so the two variables were not used as predictors in the same equation. Given, however, that fewer research studies have explored social rank, analyses were repeated to see which variable would improve the predictive utility (that is the proportion of the variance) of the resulting model.

Given the small sample size it was decided to use a simultaneous entry method rather than a stepwise approach.

Collapsing across the categories behavioural response (see Table 5.39), there were eight compliers and 24 non-compliers at one-month follow up and four compliers and 28 non-compliers at six-month follow up. The sample size for the six month follow-up resulted in cell sizes that were too small to permit a feasible regression analysis.

For one-month follow-up, the following variables were entered into a logistic regression in order to predict behaviour associated with command hallucinations to commit suicide one month after baseline interview: beliefs about malevolence, degree of engagement (as measured by the BAVQ-R), rank score from the social comparison scale and the score on PSYRATS control dimension.

Results

Using these predictor variables the regression model was significant ($X^2(4) = 13.47, p < 0.05$) with 35 (Cox and Snell R squared) to 52% (Nagelkerke) of the variance accounted for by these variables. The model correctly classified 77% of cases.

The results for the individual predictors are shown in table 5.40. The only significant predictors of the behavioural response to suicide commands at one month follow-up were self-reported social rank (inferiority vs superiority) and degree of engagement. The results suggest that for every unit change in the rank score (decrease in score) an individual is 1.59 times more likely to comply with command hallucinations to commit suicide. Beliefs about malevolence, whilst not significant, also yield a relatively high odds ratio, with every unit increase on the malevolence sub-scale increasing the likelihood of complying 1.24 times.

Table 5.40: Individual Predictors of Behavioural Response to Suicide Commands at one-month follow-up

Predictor	B (SE)	Wald	95% CI for Exp (B)		
			Lower	Exp (B)	Upper
Constant	-3.13 (3.34)	.87	-	.04	-
Malevolence	.21 (.18)	1.37	.87	1.24	1.77
Engagement	-.34 (.25)	1.91	.44	.71*	1.16
Control	-.65 (.67)	.94	.14	.52	1.95
Rank	.47	.24	1.00	1.59*	1.95

N = 32; *p < .05

Results

When the regression analysis was repeated with only beliefs about voices and beliefs about self (social rank) the model remained significant ($X^2 (3) = 12.46, p = .006$) although, as expected, slightly less of the variance was accounted for by the model (33-49%). The results for the individual predictors were remarkably similar. The only significant predictor was social rank (Wald = 4.22, $p < .05$). This model did correctly identify a larger proportion of cases (81%).

Given that social rank and attractiveness were highly correlated, they were entered into separate regression equations. A replication of the first model incorporating beliefs about malevolence and engagement, amount of control on the PSYRATS and attractiveness as measured by the social comparison scale was conducted. Although the model correctly classified 84% of cases, it was not significant ($X^2 (4) = 8.83, p = .07$), and none of the variables emerged as significant predictors of compliance with suicide commands at one month follow-up.

When, however, we repeated this analysis without the PSYRATS control variable, the model emerged as significant ($X^2 (3) = 8.82, p < .05$). These variables accounted for 25 (Cox and Snell) to 36% (Nagelkerke) of the variance. Eighty four per cent of the sample was correctly classified using this model. The results for individual predictor variables are displayed in table 5.41. In this model none of the variables emerged as significant predictors of future behaviour.

Results

Table 5.41: Individual predictors of behaviour associated with suicide commands at one month (using attractiveness)

Predictor	B (SE)	Wald	95% CI for Exp (B)		
			Lower	Exp (B)	Upper
Constant	-.39 (1.82)	.05	-	.68	-
Malevolence	.02 (.11)	.03	.82	1.02	1.26
Engagement	-.16 (.12)	1.66	.67	.86	1.09
Attractiveness	.31 (.19)	2.64	.94	1.36	1.98

5.6.4.3 Predicting Compliance with Command Hallucinations to Harm Self

Again reverting attention to table 5.39, the numbers for those with self-harm commands were slightly larger (in terms of adequate representation in each category) such that it was possible to explore regression models for both one- and six-month follow-up periods. Due to small numbers in the partial compliance category and an absence of anyone appealing commands to self-harm, it was once more necessary to collapse across categories creating a dichotomous variable of compliance and non-compliance. Based on these categories, 17 individuals were classified as compliers at one month and 10 were classified as non-compliers. At six-months, 15 were classified as compliers and 10 as non-compliers (as described above, two individuals with self-harm commands were not followed up in time to be included in this analysis).

Univariate analyses conducted in question four found that those that complied with command hallucinations to harm themselves had significantly stronger beliefs about omnipotence and experienced voices significantly more frequently and for longer than

Results

non-compliers. These variables were therefore entered into a logistic regression with compliance behaviour at one month as the outcome (criterion) variable.

The model incorporating these variables was not significant ($X^2(3) = 3.60, p = .31$) and accounted for a small proportion of the variance (between 13 and 18% dependent on the test used). Furthermore, none of the predictor variables achieved significance.

The same model was significant at six months ($X^2(3) = 16.01, p = < .001$). The model was found to account for 50 (Cox and Snell) to 68% (Nagelkerke) of the variance in outcome and correctly identified 87% of cases.

Table 5.42 presents the findings relating to individual predictor variables and demonstrates that only frequency of command hallucinations acts as a significant predictor of compliance with self-harm commands at six months. This may actually be misleading. Firstly, although it is significant the related odds ratio is very small (.16) and secondly this variable (and indeed duration) is categorical (ordinal) in nature but could not be analysed in this equation as a true categorical variable as under-representation in some of the categories resulted in empty cells thus making a logistic regression unfeasible. Furthermore, the confidence interval for this variable is so large that it is unlikely to be reliable.

Results

Table 5.42: Individual predictors of compliance with command hallucinations to harm self at six month follow-up

Predictor	B (SE)	Wald	95% CI for Exp (B)		
			Lower	Exp (B)	Upper
Constant	12.30 (5.86)	4.40	-	219649.95	-
Omnipotence	-.43 (.27)	2.49	.38	.65	1.11
Duration	-.52 (.72)	.53	.29	.50	.927
Frequency	-1.81 (.86)*	4.19	.15	.16	2.42

*p < .05

5.6.5 Interim Discussion

The methodological difficulties in making a statistical analysis of this longitudinal data meaningful are discussed above. Unfortunately there were many factors that are likely to have modified the outcome variables of interest in this study which, outside the confines of a randomised controlled trial, we were unable practically and ethically to influence. The results presented above represent, at best, an exploration of basic factors of the longitudinal data and they must be interpreted with extreme caution. It may be, however, that what they do point to is that some factors remain important (in terms of continuing to exert an influence) over time. For instance, in terms of compliance with commands to commit suicide beliefs about self and beliefs about voices together with the amount of control the individual feels they have over the voice appear to account for a significant proportion of the variance in behaviour in the short-term (one month), with beliefs about inferiority and the degree to which the individual engages with the voice, emerging as significant predictors of compliance. Clinically, these findings are intuitive and suggest

Results

that interventions might emphasise ways of decreasing engagement with the voice (for instance by using distraction strategies) and might focus on enhancing self-esteem and self-worth in order to prevent compliance.

5.7 Summary

This chapter detailed the quantitative analysis of varying aspects of command hallucinations and associated behaviour with a particular emphasis on exploring the factors associated with compliance with dangerous commands. Firstly, we were able to explore some of the factors or life events (traumatic life events, particularly interpersonal trauma) that, theoretically, might predispose an individual to experience a voice as dominant and commanding. Secondly we were able to compare the relative profiles of those individuals that reported varying content of commands by comparing those with and without commands to harm others, those with and without commands to commit suicide and those with and without commands to harm themselves. Two methodological approaches were used to examine the factors underpinning compliance with dangerous commands to harm self (self-harm and suicide) and others, the findings of which highlighted the need to focus on current experience of command hallucinations rather than using historical accounts. Finally a rudimentary exploration of the longitudinal data was presented.

The clinical and theoretical implications of the key findings, in addition to the limitations of the study will be discussed in the next chapter.

Chapter 6 OVERVIEW AND DISCUSSION

6.1 Overview

This main aim of the current study was to identify some of the pertinent factors underpinning compliance with command hallucinations to harm self or others. Chapter two highlighted some of the methodological limitations of previous studies in this area, limitations which we attempted to address in the current study. In conducting clinical interviews rather than relying on case note data we hope that we have maximised the detection of command hallucinations. Indeed, our prevalence rates of 82% with a lifetime history of command hallucinations and 76% with a current experience of command hallucinations are somewhat higher than those reported elsewhere. In comparing those currently experiencing commands with those with more generic voices, we have shown that whilst not necessarily more unwell, individuals with command hallucinations are significantly more distressed by the voices they hear and feel significantly less able to control the experience. These findings are consistent with previous descriptions of command hallucinators (Trower *et al*, 2004; Mackinnon *et al*, 2004).

Previous studies have used methodologies that suggest that individuals hear only one form of command, or that the same factors underpin compliance with self-harm and harm-other commands. This, in addition to varying conceptualisations of compliance and the use of historical accounts of command hallucinations (Fox *et al*, 2004; Shawyer *et al*, 2008), prevent clear conclusions being drawn about the risk of acting on or complying with command hallucinations.

Overview and Discussion

Attempts were made to maximise methodological rigour in the current study by utilising a standardised guide to exploring and categorising command hallucinations and any associated behavioural and emotional consequences (CHRIS). Furthermore, we attempted to capture the true complexity of command hallucinations. Information was collected on past and present experiences of command hallucinations and details were taken on all forms of command experienced. This methodology permitted an exploration of the factors associated with compliance with each form of dangerous command: harm other, suicide and harm self.

6.2 What distinguishes Compliers from Non-Compliers?

Previous research has focussed either exclusively on compliance with violent commands or has grouped suicide and self-harm together in a 'harm to self' category. It is likely that this minimises the differences between compliers and non-compliers as it does not take account of the complexity of the phenomenon. For instance, 53% of the current sample reported multiple content commands so it is likely that those who have previously been included in a 'violence only' study could also have been experiencing commands to harm or kill themselves and that the concurrent presence of such commands may have minimised or confounded any results. The detailed interpretation of the factors associated with compliance is provided in chapter five but an overview and the implications of the findings will be discussed here.

Consistent with previous research (Beck-Sander *et al*, 1997; Fox *et al*, 2004; Shawyer *et al*, 2008) we found that those who complied with command hallucinations believed their voices to be significantly more omnipotent than those who did not comply. However, we

Overview and Discussion

also found that beliefs about malevolence were important in distinguishing between those that comply with dangerous commands and those that don't. On average all of the complier groups (regardless of content) rated their voices as more malevolent than non-compliers, with harm-other and suicide compliers reported significantly stronger beliefs about malevolence than their respective non-compliers. Others (Beck-Sander *et al*, 1997; Fox *et al*, 2004; Shawyer *et al*, 2008) have reported that beliefs that the voice is benevolent in nature and purpose are associated with compliance, even when the command is severe or antisocial. Our findings with regard to benevolence were somewhat less consistent. Whilst, there were trends towards compliers rating the voices as more benevolent than non-compliers, none of these reached statistical significance. The absence of a statistical difference in our findings may be a result of the use of a slightly different measure. Both Beck-Sander *et al* and Fox *et al* used an earlier version of the Beliefs about Voices Questionnaire where items were responded to either negatively or affirmatively rather than on a continuum as on the current version. Indeed, Beck-Sander *et al* describe classifying a voice as benevolent if an individual scored three out of six items positively; an approach that perhaps overrepresented benevolent voices. We detected a relatively large degree of variance on beliefs about benevolence, so it may be that by using a more detailed scale which gives the individual more choice, the effect has become diluted. Furthermore, all previous studies have incorporated historical accounts of command hallucinations and associated behaviour with some individuals reporting on voices that they had heard a year previously (Beck-Sander *et al*, 1997; Fox *et al*, 2004) and others reporting on voices they had heard up to five years previously (Shawyer *et al*, 2008). One must therefore question the reliability of the individual's

Overview and Discussion

recall of such experiences. In fact, in this study the effect of benevolence was small for all but suicide commands where the effect size was moderate. Social rank theory discusses how individuals are predicted to behave in agonistic, that is socially hostile, environments. It is suggested that, in such environments, those who are subordinate tend to comply or try to appease dominant others in order to protect their chances of survival. There is nothing to say that such dominant others should be either benevolent or malevolent but intuitively if the environment is hostile, one would expect there to be a greater perception of malevolence. Interestingly, with suicide commands those who complied appeared to do so because the voices were congruent with their mood and their own thoughts (the voices were therefore ego syntonic). It was in this category where there was the largest differential on beliefs about benevolence (with compliers perceiving the voice to be more benevolent than non-compliers). Perhaps voices that are instructing or commanding the individual to perform an act that is consistent with their own wishes are perceived to be benevolent whilst those that are ego dystonic (inconsistent with the person's own conscious wishes and desires) are perceived to be malevolent. Clearly, to examine this in detail would require a finer grained, qualitative analysis of the data.

In line with social rank theory, we also made clear predictions about compliers perceiving themselves to be of lower social rank; more subordinate to others than non-compliers. Fox *et al* (2004) reported a strong effect of social rank that varied according to content where those that complied with harm other commands perceived themselves to be significantly more superior than non-compliers perceived themselves, whereas those that complied with self-harm commands perceived themselves to be significantly more inferior than non-compliers perceived themselves. We replicated this result when we

Overview and Discussion

adopted the same methodology and incorporated historical accounts of command hallucinations, but when we focussed exclusively on current experiences of command hallucinations (that is within the month preceding the interview), the effect disappeared. In fact across all aspects of social rank (rank, attractiveness and group fit) compliers rated themselves as inferior to non-compliers. Although we did not find significant differences between the perceived social rank of compliers and non-compliers in the harm-other group, this is likely to be a result of lack of power as the effect sizes were relatively robust (.50). For suicide, the effect of social rank was stronger and statistically significant. Social rank appears to play less of a role in compliance with self-harm commands. This is discussed below. It would appear then, that the degree to which an individual feels down rank to others in general does play a significant role in their tendency to comply with dangerous commands to harm others or to kill themselves. In the current study participants were asked to rate themselves on the social comparison scale in relation to others generally. Other studies (Fox *et al*, 2004; Birchwood *et al*, 2000; Byrne *et al*, 2006) have asked the individual to rate themselves directly in relation to the voice. In clinical practice we have found this to be a difficult concept for voice hearers to grasp and given Benjamin's (1989) finding that relationships with the voice mirror social relationships we felt that our approach was valid. It may be, however, that the effects would have been even greater if the individual rated themselves directly in relation to the voice.

The factors that appear to be unique to compliance with harm-other, suicide and harm-self are discussed below.

Overview and Discussion

6.2.1 Harm-Other

When current experience of command hallucinations only is taken into account, there are some statistically robust differences between the groups in addition to those discussed above. Consistent with the cognitive model (Chadwick and Birchwood, 1997), compliers rated their voices as more malevolent and accordingly were significantly more resistant behaviourally and emotionally than non-compliers. Of course, it may be that compliers reported such resistance as they were conscious of how they would be viewed by the researcher (or indeed any third parties) if they reported the contrary. Obviously, in clinical practice the individual would be encouraged to resist obeying dangerous commands. However, the negative emotional reaction to the voice (which is subsumed in the resistance sub-scale) that is often a by-product of resisting the voice and trying to push it away, is likely to contribute towards the continued perception that the voice is omnipotent and malevolent (for example, if the voice can make me feel this way it must be terrible and it could hurt others if I do not do as it says). Future research might want to focus on whether it is the emotional or behavioural component of resistance that predicts compliance. Given that resistance appears to be associated with compliance, it may be that clinicians could focus on testing whether just listening to the voice can force the individual to act or whether this would indeed serve to desensitise them and decrease the negative emotional reaction which in turn could modify the negative beliefs.

The finding on the Gudjonsson Compliance Scale was very interesting and the effect size suggests that the result should be given due attention. It would appear that those who rate themselves as being more compliant by nature might be more likely to obey dangerous commands. Consistent with a theory of reasoned action (Fishbein and Ajzen, 1975), the

Overview and Discussion

results from the development of the Command Hallucinations Rating and Interview Schedule (CHRIS) suggest that those who comply with commands to harm others do so because they believe what the authoritative voice is telling them and that their action will be for the greater good. For example, one lady said that she believed that the world was about to end and that her family had been replaced by others and that if she killed them she would be helping to save the world. She had heard a voice instructing her of this and said that she did not even think to question it. It was also clear from the CHRIS that those who did not comply with commands to harm others, disobeyed because they were able to identify personal and social consequences of doing so. An often cited example was of being told to kill a family member but recognising that doing so would leave them without a loved one and with a lengthy prison sentence. Perhaps those who achieve high scores on the compliance scale do not enter into this cognitive process of weighing up and obey unquestioningly.

Others (Junginger, 1995; Mackinnon *et al*, 2004) have discussed the finding that those who comply with command hallucinations (to harm others in particular) do so because they perceive the voice to be real or familiar. The majority of the research participants in the current study, regardless of whether they were a complier or a non-complier, reported that they recognised the identity of the voice. Often those who were abused in childhood reported that the voice was that of the abuser. We did detect a (non-significant) tendency amongst those complying with harm-other commands to perceive the voice as real; of external origin separate to oneself. The moderate effect size associated with this finding suggests that it may indeed be an important factor associated with the risk of compliance with commands to harm others, such that clinicians might focus on enhancing the

Overview and Discussion

individual's belief that the voice is related to themselves and therefore within their control. It may be, however, that this is a reporting bias whereby the nature of the command and the perceived consequences of disclosing such content may 'force' the individual to attribute it to an external source.

6.2.2 Suicide

Seventy two per cent of the voice hearers interviewed in this study reported that, at some point in time, they had complied with a command hallucination to kill themselves. Again there were some particularly robust findings with regard to compliance with command hallucinations to commit suicide. Based on current experience of commands and taking the results together, it would appear that those who comply with command hallucinations instructing them to kill themselves do so because they are concomitantly depressed and suicidal and because they "willingly follow what the voice tells them to do". They report a significantly higher level of engagement with the commanding voice such that they make serious attempts to end their life. As mentioned above, they also have a strong tendency to view the voice as more benevolent in nature than those who are able to resist suicide commands. It is, as always, impossible to draw any conclusions about the direction of causality between low mood, suicidal ideation and commands to commit suicide; it may be that the commands occur first and the drop in mood follows or that the content of commands becomes congruent with mood. However, it would appear from these findings that when the two occur together and are coupled with a low sense of self-worth; a sense of being unattractive and not belonging there is a heightened risk of compliance with command hallucinations to commit suicide.

Overview and Discussion

Based on these findings (and the absence of any significant differences in the severity of psychotic symptomatology) it would seem important that rather than focussing on treating the psychosis *per se*, greater emphasis should be placed on enhancing the individual's sense of self-worth and belonging and improving their mood. Given that compliers in this category also feel significantly less able to control the voices that they hear, attempts to enhance the degree to which they feel able to influence voice activity might help to lessen the risk of compliance.

What is also interesting about suicide commands is that there appears to be a degree of persistence, unlike with harm-other commands. For instance, whilst there was an expected reduction in the number of individuals who were fully compliant with suicide commands over time, (expected given that they were receiving active treatment at the time of the baseline interview and over the follow-up period), all of those who were classified as partially compliant at baseline remained so over the six month follow-up period; this despite 'treatment as usual'. Perhaps this is because the 'treatment as usual' was not targeting the risk factors of negative self-belief; low self-worth and lack of belongingness and thus the need to act in accordance with the voice's instructions was maintained.

6.2.3 Harm-Self

The findings in relation to self-harm were perhaps the most surprising. Importantly, and consistent with previous research studies (Fox *et al*, 2004), when historical as well as current experiences were taken into consideration it was very difficult to find individuals who had never complied with a command to harm themselves. This perhaps emphasises

Overview and Discussion

the need to delineate those that are currently hearing commands from those that have heard them in the past. Using this approach we were able to identify a small proportion of individuals that were not currently complying with commands to self-harm.

Those who complied with self-harm commands appeared to do so because, compared to non-compliers, they were bombarded by the voice hearing experience. They heard voices significantly more frequently and for longer, they were also significantly more distressed by the experience than non-compliers. Coupling this data with the data available from CHRIS (see CHRIS manual), it would seem that those who comply with command hallucinations to harm themselves feel emotionally overwhelmed by the experience of hearing incessant commands and engaging in deliberate self-harm provides some respite from the voices. It is perhaps the incessant nature of the voices that contributes towards the belief that the voices are omnipotent (which resulted in the largest effect size – 1.12). Consistent with the original cognitive-behavioural conceptualisation of hearing voices, those who complied with self-harm commands rated their voices as significantly more malevolent and were significantly more likely to resist them. The model would suggest that such attempts to resist or suppress have a paradoxical effect of increasing voice activity (see Chadwick and Birchwood, 1994), thus limiting the individual's sense of control over the experience and increasing the frequency which, appears, in turn to be associated with compliance.

As a group, self-harm compliers achieved significantly higher scores on the activation dimension of the BPRS. This supports the idea that they feel more emotionally aroused or overwhelmed. Again, it is impossible based on this data, to draw any conclusions about the direction of causality between the nature and content of voices and emotional

Overview and Discussion

state or arousal. Perhaps as the individual becomes more emotionally aroused the voices become more persistent (by being more frequent and lasting for longer), such that the individual feels that they can no longer ignore or resist them. The respite that is provided by engaging in self-harm appears to serve as a form of negative reinforcement (the cessation of something negative increasing the likelihood of the behaviour occurring again) and, from a cognitive point of view, prevents disconfirmation of beliefs about the voices power and purpose.

Interestingly and contrary to our hypotheses and to previous findings (Fox *et al*, 2004), there were no statistically significant differences between harm-self compliers and non-compliers in terms of their self-reported social rank. This is unlikely to be just a result of lack of power as the effect sizes were also very small. It may be, however, due to the very small number of non-compliers. It may be that if we had been able to recruit more individuals who were able to resist commands to self-harm we would have had a more representative group. Previous studies have, however, highlighted the difficulty in finding this population. One hypothesis might be that those who are prone to hearing command hallucinations to harm themselves generally rate themselves as inferior but that it is the topographical features (volume, frequency, duration) that contribute towards the formation of the beliefs about voices and the need to obey the voices commands.

6.2.4 Methodological Issues

Hopefully, this study has demonstrated the importance of methodological design in understanding the complex relationship between command hallucinations and risk behaviour (compliance). Others (e.g. McNiel *et al*, 2001; Rogers *et al*, 2002; Rogers,

Overview and Discussion

2004) have highlighted the importance of controlling for content, yet several studies have either failed to acknowledge or minimised the presence of commands to harm or kill oneself in their final analysis or their discussion of the results (Beck-Sander *et al*, 1997; Shawyer *et al*, 1998). In other studies (Fox *et al*, 2004), content is controlled for but suicide and self-harm are grouped together as though they are the same phenomenon and the same factors drive compliance with both. The findings presented in this study suggest that, in fact, the factors underpinning compliance with these respective commands are very different, and that assessments of risk and clinical interventions might have a different focus in those with commands to commit suicide than those with commands to self-harm.

We also attempted to exemplify the importance of accounting for the presence of multiple commands. Some studies (Monahan *et al*, 2001; Rogers, 2004) have discussed the relationship between command hallucinations and risk of violence as though individuals only hear commands to harm others. The data presented here suggest that over half of those with command hallucinations hear more than one form of command such that it became methodologically very difficult to compare the differences between those with commands to commit suicide, commands to self-harm and commands to harm others. The results from question two (see chapter five) suggest that potential differences between the groups are minimised when analyses are conducted based on predominant content. Whilst there were methodological difficulties inherent to the analysis presented in question two, the results could be interpreted as what added burden each respective command adds. The analysis also highlights that utilising predominant content appears to minimise the profiles associated with each type of command such that it may mislead

Overview and Discussion

an analysis of the factors associated with compliance with, for example, commands to harm others.

Finally, the results from this set of analyses suggests that when historical experiences are taken into account, the prevalence of compliance increases but the effects of the factors associated with compliance are diluted. In certain instances, such as the effect of superiority of those that have complied with commands to harm-others either currently or in the past (even if they are no longer hearing such commands), incorporating historical behaviour appears to confound the result entirely. This does suggest that the results of studies such as Beck-Sander *et al* (1997), Fox *et al* (2004), and Shawyer *et al* (2008) should be interpreted with a degree of caution. Unfortunately the results from this study suggest that the exclusive use of those that are currently hearing and behaving in response to command hallucinations limits (or perhaps excludes) the chances of finding research participants who are currently fully complying with command hallucinations to harm others. In this study we employed relatively stringent criteria of current experience (within the last month), it may be that future studies could extend this period in order to maximise the likelihood of obtaining harm-other compliers. We were aware of some potential research participants that had very recently complied with commands to harm others, but because their assessment and treatment process had only just begun their treating clinicians were, understandably, not happy for them to be interviewed. Extending the time period for current experience but keeping it within a time span to ensure adequate recall of the experience might help to resolve this methodological difficulty.

6.3 What predicts future compliance?

We had hoped that the use of a longitudinal design would facilitate an analysis that would allow us to at least explore some of the factors that might predict future compliance with command hallucinations. We enjoyed an excellent retention rate in the study with the majority of participants attending for both one- and six-month follow-up. Unfortunately, even with an excellent retention rate, we did not have sufficient numbers to make an analysis of the longitudinal data meaningful.

In terms of long-term (six month) follow-up, it would appear that we have replicated a finding suggested by Buccheri *et al* (2007) that whilst harm other commands appear to wax and wane, commands to harm-self are more consistent. This was somewhat true of the data presented here. Certainly, the proportions of compliers and non-compliers in the self-harm group remained relatively stable. There was also a degree of stability amongst the suicide category, although more so over a one-month period.

In terms of suicide, beliefs about malevolence, degree of engagement, feelings of inferiority and the amount of control over voices accounted for a significant proportion of the variance of a model of compliance with commands to commit suicide. Degree of engagement with the voice and inferiority emerged as significant predictors. This perhaps supports the thesis presented earlier, that the management of risk associated with command hallucinations to commit suicide may focus on improving the individual's beliefs about themselves, rather than focussing exclusively on treating psychotic symptoms. The odds ratios associated with these variables suggest that even a small

Overview and Discussion

improvement in feelings of self-worth could serve to significantly decrease the risk of compliance.

The interpretation of the results from the regression analysis of compliance with self-harm commands is more problematic and although frequency of commands at baseline appears to predict compliance with commands to harm-self at six month follow up, the odds ratio associated with it suggests that changes in the frequency of voice activity has a relatively small effect on outcome.

The results of these analyses are interesting but given the sample size, they must be seen as preliminary at best. Furthermore, as highlighted in chapter five, there are a number of confounding factors that are inherent to a naturalistic longitudinal study, most importantly all of the participants were receiving treatment as usual, their clinicians were informed if the researcher felt they were at heightened risk of compliance (in accordance with ethical obligations) and a large proportion had a change in their treatment regime.

6.4 The Development of Command Hallucinations

This study was designed to examine the factors associated with compliance with command hallucinations. It was not designed to test or explore psychological models of the development of auditory hallucinations in general or command hallucinations in particular (see Garety *et al*, 2001; 2007; Morrison, 2001; Bentall and Fernyhough, 2008). However, the recruitment strategy adopted here resulted in two groups that were ripe for comparison. It is clear that the vast majority of clinical voice hearers have experienced a command hallucination at some point in their voice hearing history. We were unable to explore all of the possible variables that contribute towards the apparently more

Overview and Discussion

distressing experience of command hallucinations, but we did have data available to explore the possible role of traumatic life events.

The use of measures which asked specifically about both traumatic life events and the presence of command hallucinations means that, unlike others (Read *et al*, 2003), we are more likely to have maximised the detection of both of these underreported experiences. In doing so, we have detected a similarly high prevalence of traumatic life events amongst voice hearers in general as others have (Read *et al*, 2003; Andrew *et al*, 2008; Thornton, 2009), and a prevalence rate of childhood sexual abuse that cannot be ignored. It was evident in these results that those who experience command hallucinations also report significantly more severe psychological symptoms of trauma. It would appear that these symptoms are related to the traumatic life events rather than to the experience of being 'psychotic' or to the direct experience of command hallucinations. Indeed, although the level of trauma symptoms was high in both voice hearing groups, a significantly greater proportion of command hallucinators would have met diagnostic criteria for Post-Traumatic Stress Disorder.

Two interesting relationships between trauma and command hallucinations emerged. The first was that those who reported hearing commands to commit suicide were significantly more likely to report having experienced sexual abuse in childhood. The second was that the severity of the content of command hallucinations appears to be related to the severity of trauma symptoms. The possible interpretations of these findings are discussed in the previous chapter. Regardless of whether these trauma symptoms are cause, contribution or effect, individuals with command hallucinations are clearly

Overview and Discussion

affected by their past life experiences. Such levels of distress can only contribute towards an already disturbing experience.

These findings have important clinical implications, as stated previously the presence of childhood sexual abuse is often not examined or validated in individuals with a diagnosis of schizophrenia (as a large proportion of participants in this study had), furthermore there is currently no agreed means of managing (or ameliorating) marked trauma symptoms in psychosis.

Several theoretical models (Garety *et al*, 2001; Morrison, 2001; Bentall and Fernyhough, 2008) refer to adverse and traumatic life events such as abuse in childhood in addition to other factors that appear to increase the likelihood of the development and maintenance of auditory hallucinations and other positive symptoms of psychosis. The models have not been applied specifically to command hallucinations but it would appear that features from both models for the development of voices and paranoid beliefs apply to the distressing experience of command hallucinations.

Bentall and Fernyhough (2008) for instance provide separate models of voices and paranoid delusions drawing upon previous research on the psychological mechanisms involved in each type of symptom. In the case of voices, the authors propose that those who have pre-existing difficulties with source monitoring are more likely to attribute the unwanted, low effort intrusions caused by trauma to an external source. This process is furthered by metacognitive beliefs about the need to control thoughts, and dysfunctional attempts to control thoughts, which have the paradoxical effect of increasing the frequency of intrusions.

Overview and Discussion

In terms of paranoid beliefs, it is suggested that early adverse experiences of other people (for example abusive or domineering relationships) predispose the individual to the belief that future interactions will be also be negative. It is also posited that individuals who have insecure attachment styles and repeated experience of victimisation have low self esteem and are more likely to attribute negative events to external powers (perhaps in an attempt to buffer self-esteem) especially if they already have deficits in the ability to understand the mental states of others (impaired theory of mind). These factors contribute towards hypervigilance to possible social threats and the development of paranoid beliefs, facilitated and maintained by a thinking bias whereby the individual is quick to make judgements and is limited in reality testing.

It would seem from the findings of this study that command hallucinations are an extreme version of general auditory hallucinations where the individual is significantly less able to control the experience of voices and is significantly more distressed by the voices that they hear. Furthermore, they tend to have significantly stronger beliefs about how powerful, malevolent and domineering the voices are. It would seem that for a sub-group of voice hearers, adverse life experiences may indeed predispose the individual to hear voices, interpret them negatively and continue to be distressed by the experience; but the occurrence of trauma alone would not explain why those with command hallucinations are more distressed because, as a group, they were not significantly more likely to have experienced trauma or significantly more likely to have experienced sexual abuse in than those with general hallucinations. Perhaps it is that in those where trauma persists (in the form of enduring psychological sequelae of trauma), there is a greater likelihood that intrusions will be interpreted significantly more negatively, or will reflect the sense of not

Overview and Discussion

having control that is experienced during many traumatic life events. In the past we have shown that trauma symptoms significantly predict beliefs about voices (Andrew *et al*, 2008). Of course, it may be that command hallucinations are the 'cause' of the heightened trauma symptoms. Whilst the existing models highlight the role of traumatic or adverse life events in the vulnerability towards auditory hallucinations, they do not appear to consider it as a maintaining factor in the continued negative interpretation of voice activity, coping style and distress amongst voice hearers in general and, it seems, those with command hallucinations in particular. Certainly, it would appear from these results that the severity of the content of commands might be related to the degree to which trauma symptoms remain unresolved. Perhaps helping individuals to resolve trauma or at least understand the role that trauma might have played in the development of their difficulties could reduce the degree to which the voice is perceived as commanding (see Byrne *et al*, 2006).

6.5 Clinical Implications

Many of the clinical implications of the specific findings of this study are subsumed in the sections above. However, there are some general clinical implications.

Importantly, it would appear that this study has provided further evidence of the need to develop detailed formulations of individual command hallucinations. Whilst beliefs about voices does appear to be an integral component of behaviour associated with commands, there are clearly other factors at play and these factors differ according to the content of the command, factors such as the individual's beliefs about themselves and aspects of their general mental state, in addition to the persistent psychological effects of

Overview and Discussion

past life events. Given that approximately half (53%) of those with command hallucinations report experiencing more than one type of command it would seem prudent to treat all commands separately and to build a profile of the way in which different voices interact. The findings from the development of CHRIS suggests that some voice hearers have commanding voices that they perceive to be more benevolent in nature and which appear to serve a protective factor in that they decrease the risk of compliance with more malevolent commands. CHRIS certainly lends itself to this and, as shown in chapter three, enjoys good inter-rater reliability amongst trained clinicians.

If we are to truly understand risk it seems essential to consider the full spectrum of compliance behaviour rather than basing clinical decisions on research that is based on dichotomies. It was disappointing that the sample sizes in this study precluded a meaningful statistical analysis of what predicts group membership of all the categories of compliance yielded by the CHRIS. However, what was clear from the descriptive data was that a significant proportion of those that report hearing severe commands to harm themselves and others remain at some form of heightened risk because they were not merely non-compliant; they still felt the need to partially comply with the voice's instructions or compelled to appease the voice. What we are not able to conclude from this study is the degree to which this, in the longer-term, places the individual at risk of full compliance. In at least two previous studies of compliance with command hallucinations (Rogers *et al*, 2002; Zisook *et al*, 1995) suicides occurred in the command hallucinations group. It is not clear whether these individuals had been complying with suicide commands or appeasing harm-other commands. What is suggested from results of previous studies and from the results of this study is that a significant proportion of

Overview and Discussion

individuals with command hallucinations are at risk of hurting themselves either in direct response to a command or as a means of coping with a command (partial compliance and appeasement). What is also not clear from this set of analyses is whether individuals with command hallucinations are any more at risk of suicide and self-harm than individuals with general commands.

What partial compliance and appeasement do suggest is that the individual is willing and perhaps able to enter into a cognitive or behavioural process of resisting the voice. This may represent a useful prognostic factor for engagement in and outcome from cognitive behavioural therapy for command hallucinations. The findings also suggest that a basic cognitive behavioural conceptualization of auditory hallucinations where the individual is encouraged to develop skills that allow them to decrease their resistance to voices, thereby testing their underlying beliefs about the purpose, nature and power of the voice needs considerable adaptation to take account of the finding that a higher degree of engagement with command hallucinations appears to be significantly associated with compliance behaviour. What appears to be important is helping the individual to examine the beliefs they hold about the power of the voice and its nature. Consistent with Chadwick and Birchwood (1997), individuals in this study did show a significantly greater tendency to resist malevolent voices but behavioural resistance as measured by the Beliefs About Voices Questionnaire does not equate to non-compliance with commands. Again consistent with Chadwick and Birchwood, what many described was a fear that if they did not comply, the voice had the capacity to inflict harm upon the voice hearer or others (see CHRIS manual for examples). Cognitive behavioural therapy (CBT) that is specific to command hallucinations (see Trower *et al*, 2004 and Byrne *et al*,

Overview and Discussion

2006) has been shown to be more effective than the more generic CBT for psychotic symptoms. In light of the findings described here, CBT for command hallucinations might also include an element to improve the individual's sense of self-worth and belongingness, which may in turn serve to decrease the perceived power of the voice and protect against compliance.

6.6 Theoretical Implications

There are a number of important theoretical implications of the findings discussed here. In this section I will consider the cognitive behavioural model of command hallucinations and the role of social rank.

It would appear from the findings presented here that the basic tenets of a cognitive behavioural model have received a great deal of support. Beliefs about voices emerged as the factor that was common to compliance with all forms of command (harm-other, suicide and harm-self). The results with regard to emotional and behavioural responses were more mixed. This is perhaps because we used a measure that was developed for use with a cognitive behavioural model of generic hallucinations (BAVQ-R), where emotions and behaviour are subsumed in the same index. The findings from this study – and indeed others (Beck-Sander *et al*, 1997) - suggest that coping styles amongst those with command hallucinations are perhaps more complex than basic cognitive behavioural understandings account for.

The basic cognitive behavioural model for command hallucinations focuses mainly on beliefs about voices in positing that the individual's response to commands acts as a safety behaviour by reducing the perceived threat posed by the voice and prevent

Overview and Discussion

disconfirmation of the individual's belief about the voice. The model does appear to adequately explain a behavioural response to command hallucinations but it is rather generic in nature and there is little emphasis on emotional response. Our findings suggest that emotion and mood play an important role – in all forms of command emotion played some role in distinguishing between compliers and non-compliers.

The findings from this study call perhaps for different theoretical models for each different content of command. For instance, the existing cognitive behavioural model does not seem to pay adequate attention to the physical and emotional bombardment that appears to result in compliance with commands to harm self. Those who comply with commands to self-harm describe (supported by statistical findings) voices that reach fever pitch and that only cease when the individual compliers. Nobody in this study appeared a voice commanding self-harm.

An integral component of the existing cognitive behavioural model of command hallucinations is the individual's belief about self as described by social rank theory. Previous research into auditory hallucinations in general has provided empirical support for this model (Birchwood *et al*, 2004). Fox *et al* (2004) appeared to find an anomaly to this model in that those who complied with commands to harm others perceived themselves to be of superior social rank. This methodological approach utilised in this study suggests that Fox *et al's* finding was confounded by the use of historical accounts of behavioural responses to commands. Although not all of the differences between compliers and non-compliers reached statistical significance, the effect sizes suggest that our findings could lend a good deal of support to the thesis that those who comply with commands do so because they feel subordinate to others, or at least that they do not feel

Overview and Discussion

that they fit with others and are somehow inferior. What we did not explore was the degree to which these voices originate in early life experiences, particularly in interpersonal trauma as some current psychological models suggest (Bentall and Fernyhough, 2008). Where the role of beliefs about self does not appear to be supported is in the case of compliance with commands to harm self where there were no significant or marked differences in any form of social rank between compliers and non-compliers. Again, this supports the development of models that are more content specific.

6.7 Limitations

This research project was designed with a far larger sample size in mind. We had hoped to be able to adopt a more detailed approach towards the study of compliance with command hallucinations that allowed the full spectrum of content and associated behaviour to be examined. Whilst data were collected in a manner consistent with this, the limited sample size precluded detailed statistical analysis of the sub-categories of compliance behaviour. Our sample size is comparable to all published studies in this area (e.g. Beck-Sander *et al*, 1997; Rogers *et al*, 2002; Fox *et al*, 2004; Mackinnon *et al*, 2003; Shawyer *et al*, 2008), and the effect sizes detected suggest that many of the differences between compliers and non-compliers were meaningful. This suggests that where significant effects were detected they are likely to be robust and reliable. However, many of the differences we predicted did not reach significance. Power analyses suggest that we would have had to have interviewed significantly more voice hearers (up to 300) to have reached significance. Time and motivation would most certainly have allowed for this number of participants but the referral rate into the study was very low. Despite the study being brought to the attention of a substantial number of health professionals, there

Overview and Discussion

appeared to be a hesitance amongst professionals about asking individuals with this particular symptom to participate in research. Future studies in this area will have to find a means of overcoming this hesitance if sufficient sample sizes are to be achieved.

The generalisability of the data is further limited not just by the size of the sample but also by the nature of the population studied. Previous studies of violence - in particular in individuals with psychotic symptoms - have almost consistently detailed an association between command hallucinations, a concurrent delusional belief and violence (Taylor, 1998; Smith and Taylor, 1999). Noting the importance of this we did incorporate an assessment of delusional belief (in the form of the BPRS-E), but failed to find a difference between the likely delusional beliefs of compliers and non-compliers. It may be that the BPRS-E was not sufficiently detailed or probing to uncover or accurately reflect the magnitude of delusional beliefs, and measures such as the Positive and Negative Symptom Scale (Kay and Opler, 1987), the Maudsley Assessment of Delusions (Taylor, Garety and Buchanan, 1994), or the Delusions Sub-scale of the PSYRATS (Haddock *et al*, 1999). However, many of the participants involved in this study were well known to me (EA) and/or the clinical team to which I belong; in cases that were not known, further information was sought from case notes it is therefore unlikely that the presence of delusions was missed. Neither is it the case that the individuals in this study were 'too well' to have unusual beliefs as, unlike previous studies (Beck-Sander *et al*, 1997) a significant proportion of the sample remained in the 'acute' phase of psychological distress and were in an acute inpatient facility at the time of baseline interview. However, a number of potential participants who may have been more unwell, or may have had a stronger degree of conviction in a set of delusional beliefs were not

Overview and Discussion

available to interview as a result of their RMO denying access. Furthermore, individuals in a forensic setting were arguably underrepresented, again as a result of access issues. It may be then, that had we had greater representation of all of the individuals who report hearing command hallucinations we may well have detected different or additional significant differences between compliers and non-compliers. In the absence of such data, the current findings are best applied to individuals experiencing distressing command hallucinations within community or low-secure mental health facilities.

With regard to our findings, in some areas our predictions were not supported. As discussed in chapter five, some of the differences did not reach significance as a result of being underpowered. However, the failure to detect any differences on interpersonal suggestibility deserves further attention here. Unlike the results discussed already, the absence of a significant difference between compliers and non-compliers on the Gudjonsson Suggestibility Scale (GSS) and the Gudjonsson Compliance Scale (with the exception of the harm-other category), is highly unlikely to be due to lack of power. The effect sizes suggest that there was very little difference between the two groups on either measure. When the GSS was deconstructed into the sub-components (initial yield, subsequent yield and shift) the differences between the groups were not significantly magnified. There are, therefore, two possibilities: that compliance with another (be it person or voice) is not conceptually linked to interrogative suggestibility; and that the way in which the GSS was administered limited its effectiveness. Regarding the first point, the hypothesis that compliers would display a significantly greater degree of suggestibility was based upon my own clinical experience of working with individuals with command hallucinations. Voice hearers often describe initial high levels of

Overview and Discussion

resistance to the voice's commands and horror at what is being suggested (unless it is consistent with their own beliefs of course as would be suggested with those complying with suicide commands). However, voice hearers do discuss the way in which, with time, the increased pressure and 'nagging' of the voice wears them down to the point where they yield to the demands. Intuitively, this seemed to parallel the process of interrogative suggestibility where interpersonal pressure and negative feedback have been shown to bring about a change in the interviewees stance. Perhaps the process of complying with an antisocial command introduces too many additional variables such as the effects of social transgression to make a simple analysis of suggestibility meaningful. Furthermore, in the case of suicide, the results presented here suggest that compliers obey the voice because the instruction is congruent with their mood and perhaps their predominant belief about themselves. The interpersonal 'pressure' is perhaps, therefore, not necessary or not applicable. In terms of the administration of the measure, it did not feel ethical to provide the degree of hostility and negative feedback that is deemed necessary to elicit suggestibility and there is a good chance that this limited the likelihood of a difference between the groups being detected.

This study was designed to be one of the first naturalistic, longitudinal studies of compliance with command hallucinations. Whilst the study enjoyed an excellent retention rate, there were a number of difficulties inherent to the design that made the analysis of the follow-up data difficult to interpret. There was no possibility of leaving participants treatment (psychological and pharmacological) regimes unchanged, and on occasion the process of participating in the research interview altered the individual's beliefs about the voices they were hearing such that they quickly became non-compliant.

Overview and Discussion

Perhaps if this study was replicated with a researcher rather than a clinician as the interviewer, some of these effects may have been limited.

Finally, the findings presented in this thesis are likely to have been enhanced by additional analysis of the data yielded by the CHRIS. Whilst a basic reliability analysis was presented here, the measure produced a wealth of qualitative and categorical data on the function of the individual's behavioural response to the various command hallucinations. This data is currently being written up for publication, but space did not allow it to be presented here.

6.8 Future Research

The findings from this study could be used to pave the way for some future directions in research into compliance with command hallucinations. Many questions remain unanswered. For instance, the way in which traumatic life events are related to command hallucinations clearly needs further exploration, in particular it would be interesting to replicate the apparent relationship between the severity of hallucination and content of commands and the severity of trauma symptomatology with larger groups. Whilst we acknowledge that the innocuous only group are difficult to find (as are, it would seem, those that have never heard command hallucinations) an inclusive approach to recruitment appears to facilitate the detection of these important sub-groups.

We are keen that CHRIS is the subject of future research and further development. It is a tool that lends itself to more detailed analysis of command hallucinations. I mentioned above, the data that has already emerged from the initial use of the measure; data that lends further support to some of the theories that have been applied to command

Overview and Discussion

hallucinations; theories such as the effects of social transgression on compliance, the importance of the belief in the power of the voice to inflict harm (cognitive behavioural theory). Further, there is a good deal of data that would allow us to examine the way in which coping strategies serve as ameliorating factors against the distress and risk associated with hearing command hallucinations, and whether the greater the function of compliance the greater the risk of unquestioning obedience with the voice. It seems likely that use of the CHRIS in the assessment phase of CBT would help to indicate the individuals natural preference in therapy; that is whether they are more inclined towards cognitive reasoning (which seems to be indicated by those who engage in a process of appeasement), practical coping, or an alternatively focussed intervention entirely (e.g. coping with emotional arousal).

The most methodologically robust element of this study was the cross-sectional element; the results can at best only be used to describe the risk of compliance with command hallucinations at one given point in time. Given that a substantial proportion of the participants were inpatients at the time of interview and remained so at one-month follow-up, it is likely that their behaviour was modified significantly by the interventions they were receiving (including increased supervision and monitoring) such that even behaviour one month after interview could not reliably be predicted from baseline interview. However, what did appear to emerge is that compliance with commands to harm-self is common-place amongst a group of voice hearers drawn from a clinical population with 97% having complied at some point in time and a significant proportion (72%) of individuals who report hearing commands to commit suicide have complied. Further, response to these commands appears to remain relatively stable, whereas

Overview and Discussion

responses to harm-other commands appear more fluctuant. Is this because greater emphasis is placed on treating/managing anti-social commands, perhaps because of the society's view about the level of dangerousness associated with these commands in a clinical population? Given the risk of suicide and self-harm (even in response to harm-other commands) amongst those interviewed in this study, and the heightened risk of suicide in individuals with psychosis in general one must ask whether this risk is being adequately considered.

6.9 Conclusion

This study was designed to examine some of the factors underpinning compliance with command hallucinations to harm self and others. In response to the shortcomings of previous research, we aimed for the highest possible level of methodological rigour in order to enhance the generalisability of the findings and facilitate the possibility of future replication. Whilst sample sizes limited the degree to which we could benefit from the strict methodology, the findings remain robust and provide further support for the major theoretical models of command hallucinations.

The findings suggest that compliance with dangerous commands to harm self or others is the result of a complex interaction of mental state, beliefs about self and beliefs about the voice. For a significant proportion of those that hear command hallucinations, the belief that they are being commanded to perform a dangerous act; that another is more dominant to themselves is likely to be related to traumatic experiences earlier in life. The degree to which the psychological effects of such trauma persist appears to be related to

Overview and Discussion

the severity of the content of the command. This relationship clearly needs to be better understood.

What is abundantly clear from this study is that the experience of hearing command hallucinations is perhaps more common than expected and that individuals are more likely to disclose voice content if they are asked explicitly. Eighty three per cent of clinical voice hearers reported experiencing a command hallucination at some point in their voice hearing history. Those who hear command hallucinations are a very distressed population who struggle to make sense of or control their experiences. Is it therefore any wonder that a significant proportion feel compelled to obey, even when they are aware of the consequences of doing so? Perhaps an important message to emerge from this research is the finding that individuals with command hallucinations appear far more likely to harm themselves than others, despite a significant proportion reporting commands to harm others. Such information could be used to alter the widely held view that individuals with this distressing experience are, somehow, a risk to the wider public.

Appendices

Appendix 1

**COMMAND HALLUCINATIONS RATING & INTERVIEW
SCHEDULE
(CHRIS)**

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Introduction

Rationale for the Development of the Interview Schedule (CH-IS) and Coding Sheet (CH-CS)

"People's subjective experience of voices is not an irrelevant by-product but an active and potent influence" (Chadwick and Birchwood, 1994).

Auditory hallucinations are thought to be one of the most common symptoms of psychosis (WHO, 1973). They are associated with considerable distress, and for a significant proportion of individuals, are resistant to antipsychotic medication (Curson, et al, 1988).

Command hallucinations occur when an individual hears voices that "command" them to engage in a specific behaviour (e.g. 'cut yourself', 'kill your Dad'). Whilst research (Fox et al, 2004) has demonstrated that the majority of individuals who report hearing command hallucinations comply with the voice (approximately 75%), little is known about the reasons underpinning compliance. Individuals could be influenced by beliefs about commands (Fox et al, 2004) or responding to the content of commands (Rogers, *et. al.*, 1990). These may be innocuous commands, commands to harm the self and/or to harm others. Research suggests that the 'dangerousness' of the content of commands is not consistently related to compliance, rather there appear to be a range of features that mediate compliance (Hersh and Borum, 1998). For example, individuals are more likely to comply with familiar voices rather than unfamiliar voices and if the voice is perceived as trusting and benevolent (possibly as this increased engagement with the voice). In contrast, Chadwick and Birchwood's (1994) findings suggest that the severity of the command was the single most important determinant of compliance- there was no compliance with life-threatening commands, whereas compliance with mild commands was common place.

Additional mediating variables have also been suggested. The presence of a concurrent hallucination related-delusion is associated with increased compliance (Junginger, 1995) as is if there is a single voice, the voice speaks in full sentences and does not whisper (Erkwoh, Willmes, Eming-Erdmann and Kunert, 2002). These authors also report that being emotionally involved (not indifferent) following a hallucination is associated with compliance whereas Shore, Anderson and Cutler (1978) noted that calm reactions to voices increased self-mutilation. This discrepancy suggests the relationship between affect and compliance is complex and likely to be dependent on the inter relationships between variables such as mood, voice content and beliefs about voices.

Psychological models of the positive symptoms of psychosis (Garety, Kuipers, Fowler, Freeman and Bebbington, 2001) also posit that the development and maintenance of positive symptoms includes emotional processes. While cognitive models have previously emphasised the primacy of cognition over affect there is evidence to suggest that affect may also determine cognition (Gilbert, 1984). This has led to more reciprocal models that suggest that while beliefs may be vital to the maintenance of affective and

behavioural responses, these responses may strengthen or weaken beliefs in a continuously evolving cycle (Chadwick and Birchwood, 1994). Again, this illustrates the complexity and phenomenological nature of command hallucinations making it necessary to consider how best to assess the command and the subsequent or associated behaviour.

Conceptualising compliance as a dichotomous variable by categorising individuals as compliant or non-compliant could also be somewhat artificial. Anecdotal and research evidence (Beck-Sander, Birchwood and Chadwick, 1997) supports the concept of compliance as a continuous variable whereby an individual may fully comply, partially comply, attempt to 'bargain with' or appease the voice, or ignore the command entirely. Therefore, the likelihood of an individual complying with command hallucinations could be dependent on a number additional of factors including the function of compliance for the individual (i.e. does the individual experience some form of relief when they comply or disobey?), the individual's repertoire of strategies (behavioural or emotional) for coping with command hallucinations and the perceived consequences of the associated behaviour.

Existing measures tend to focus on auditory hallucinations in general and assess the topography of voices (e.g. volume, frequency etc.) or beliefs about voices. Despite evidence to suggest that each individual's experience of command hallucinations is complex, subjective and must be considered in the context of individual's subjective reality there are no tools that comprehensively assess command hallucinations and resulting behaviour. However, psychological interventions are likely to be most effective if factors associated with the maintenance of a behaviour are understood.

The Command Hallucinations Interview Schedule is a structured assessment tool that focuses specifically on the form and content of command hallucinations and associated behaviours whilst also considering emotional processes, coping strategies and the function of associated behaviours. It provides a way of obtaining a clinically meaningful assessment of command hallucinations. Specifically, focusing the assessment on the factors that appear to underpin the maintenance of the voices and associated behaviour and obtaining a detailed phenomenological picture of the experience of command hallucination facilitates the development of a detailed formulation and guides intervention.

The Command Hallucinations Coding Sheet provides a systematic means of defining and categorising key components of command hallucinations, resulting behaviour and the function of that behaviour. The identification and definition of these key components was achieved through a thematic analysis of the qualitative responses to the Command Hallucinations Interview. Such definitions should help to reduce methodological inconsistencies in future research into this complex phenomenon.

Administration Guidelines

The CH-IS

The CH-IS is a semi-structured interview schedule designed to provide a detailed, qualitative description of the person's experience of command hallucinations and the associated emotional and behavioural response.

Description of the CH-IS

The main feature of the CH-IS is that it provides a foundation from which to assess the individual's experience of command hallucinations at the level of the maintenance cycle. The CH-IS consists of nine initial open questions, each of which can be followed by 'probes' to elicit further detail, if appropriate.

The interview schedule is designed to elicit the following information:

- The presence and nature of command hallucinations
- The characteristics (e.g. topography) content (e.g. type) and onset (e.g. triggers) of command hallucinations
- The emotional and behavioural consequences of command hallucinations
- The resulting behaviour (non-compliance, appeasement, partial compliance, or total compliance)
- Coping strategies
- The effects of behavioural responses on topographical variables and emotion
- Wider beliefs about the consequences of compliance/non-compliance

Description of the CH-CS

Eight individuals that reported experiencing command hallucinations were interviewed using the CH-IS. A thematic analysis was conducted to explore the content of the individuals' experiences of command hallucinations and resulting behaviour. The results of this thematic analysis were used to develop the CH-CS.

There are two main applications of the coding sheet. Firstly, it provides the clinician with a means to structure the qualitative information gathered during interview in such a way that an initial formulation can be developed. It is anticipated that this will facilitate the organisation of complex information e.g. if the client has more than one type of command and responds differently to each.

Secondly the key components of the compliance cycle (the type of command, the type of the behavioural response and the primary and secondary functions of the behavioural responses) are clearly defined and exemplified to permit reliable coding. Categorising

these aspects may assist the clinician in monitoring any changes over time. In addition, utilising these clearly defined categories should help to increase methodological rigour in the future research of command hallucinations.

Administration of the CH-IS

The CH-IS is intended for use by clinicians experienced in working with clients with severe and enduring mental health problems and who are competent in conducting clinical interviews with this client group. Consequently, this may result in multiple professional groups administering the CH-IS. However, the interpretation of the qualitative data into a psychological formulation should only be completed by those trained in developing formulations. If the professional who administered the CH-IS is not trained to develop psychological formulations then they should seek clinical supervision for this process.

When administering the CH-IS the clinician should note that the semi-structured interview questions and probes should be employed flexibly with an emphasis on minimising any distress the client may experience and developing a collaborative relationship. This may result in the CH-IS being completed over more than one session/discontinued (if the client becomes distressed/ experiences fatigue) or questions/probes being employed out of the presented sequence. In addition, the probes may be more or less appropriate, depending on the client's responses.

The clinician is reminded that the purpose of the CH-IS is to gain a comprehensive understanding of the client's experience and exploration of any ambiguity is encouraged in order that important information is not excluded. For example, the statement '*I have taken overdoses*' could be interpreted in a variety of ways depending on the context in which it is said:

- As compliance with a Suicide command: '*my voice says kill yourself and I have taken overdoses*'
- As a negotiation with a suicide command: '*my voice says kill yourself and I have taken overdoses.....to harm myself not kill myself*'
- As partial compliance with a harm-self command: '*my voice says cut off your fingers and I have taken overdoses.....to harm myself not kill myself*'
- As functionally unrelated to the command hallucination: My husband left me so '*I have taken overdoses*'.

Due to the complex nature of command hallucinations and resulting behaviours the clinician may experience some difficulties in administering the CH-IS. To minimise this possibility two points should be noted:

- In our experience, many individuals that experience command hallucinations report hearing multiple voices. Often the voices act 'as one', that is they are all interpreted as being malevolent in nature and instruct the same/similar acts. In this

instance, the interviewer should treat the multiple voices as one voice and complete one interview and one coding sheet.

- Some individuals report hearing multiple voices that all issue separate commands or one voice issuing multiple commands. Again the majority of our participants reported negative voices issuing dangerous or distressing commands. In the two instances mentioned above, each voice/command should be asked about separately in the interview (for example, when voice A tells you to cut yourself how do you feel? What do you do? When voice B tells you to hit your father how do you feel? What do you do?) and a coding sheet completed for each in order. An example of this is provided below.

.... I was chopping some vegetables and they told me to stab myself....get the wires from the staff room.....tie your nightgown to the shower and hang yourself.....they don't tell me to hurt other people.'pour boiling water over you, scrape yourself with a sharp knife'. (Suicide and Harm-Self)

- On rare occasions we discovered individuals who reported one voice believed to be malevolent in nature and purpose that issued dangerous or distressing commands and another voice believed to be benevolent in nature and purpose that issued positive commands in order to counteract the malevolent voice. In our experience such benevolent voices can provide a protective function against compliance with dangerous commands. However, given the limited incidence of such cases, the coding sheet does not lend itself to coding the positive voice. In such instances, detailed information should be collected on both voices and a coding sheet completed for both. It is likely that the benevolent voice will be coded as innocuous in content.

The purpose of the CH-IS is to explore the experience of command hallucinations and resulting behaviour in order to contribute towards the development of a formulation. As a formulation requires the clinician to interpret the meaning of the client's experience it is highly recommended that the individual who conducts the interview also completes the Coding Sheet, with supervision if necessary.

At several points on the CH-IS the interviewer is prompted to ask the client to rate an aspect of their experience, if appropriate e.g. intensity of emotional experience associated with command hallucination (question 3). If the interview has provided ratings these should be highlighted in the appropriate section of the Coding Sheet as they could be a useful baseline from which to measure change (e.g. following intervention).

As stated in the administration guidelines clients may report hearing more than one commanding voice. When there are multiple commands, separate coding sheets should be completed for respective commands.

The remainder of the manual is split into three sections addressing the different parts of the compliance cycle: the nature of the command hallucination, the immediate response to the hallucination and the effects of that response (the function of the behaviour). The first part of each section gives some guidance for interviewing, with examples given for the type of information that may be sought. Each section ends with guidance for coding the core component.

SECTION ONE – Characteristics and content of voice/s

This section is completed when the client describes the characteristics and content of the commanding voice that they hear and reflect on their beliefs about onset.

The aim here is to get a detailed description of the command hallucinations, how the client perceives themselves in relation to the hallucinations and an account of the origins of command hallucinations.

Examples from transcripts illustrate the type of information sought for each section:

Characteristics:

- **Topography:** Clients may describe the volume, gender, identity of the voice.

I hear a man-Lazarack, I don't know him but the voice is big- very loud and sometimes I can't understand him 'cos he talks really fast, even though it's loud.

I hear two voices, they are....sometimes speak in foreign languages. The loud one is a man....he is Satan. Satan is more powerful. The girl may be my sister.

- **Location, Duration and Frequency:** Client's may describe the location of the commanding voice, the frequency with which it occurs and the duration of the experience.

It lasts for most of the day....all day everyday.....sounds like they are coming from all directions. They are in the telly and on the radio.....

I don't get a break, it never stops.....he sneaks up on me all day and says things in my ear.

.....they are always there, last for hours. Sometimes I can only hear him when I'm upset but I know he's always there...in my head.

For the purposes of formulation it is useful to identify variability e.g.....*lasts for most of the day....I hear him at least every hour...sometimes for a long time and other days it's really quick...*

- **Power**

Identifying the type of relationship the client has with their voices can be

a) Explicitly stated

The Devil is the most powerful.....

.... is very powerful.....

Or

b) Implicit in the descriptions of the commanding voice

Sometimes Nan has more control but mostly dad is stronger.

c) implied from the identity of the voice

Satan is.....

d) implied from how the voice makes the client feel

.....I feel defeated....they are much stronger...

I get frightened and I panic, feel like I'm going mental. Lose all control.....

Makes me feel terrible.....upset and overwhelmed.

e) implied by the client's beliefs about the consequences of non-compliance

Voice could hurt me and other people and can make bad things happen.....

Content (Commands):

- **Suicide.** Coded when the commanding voice is instructing the client to commit suicide. There should be explicit mention of the purpose of behaviour being to end the individual's life.

.....take all my medication, overdose, jump out of the car...in other words get rid of yourself!

Nan shouts 'It's time to take your life! You shouldn't be here, hang yourself!'

- **Harm-Self.** Coded when the commanding voice instructs the client to harm themselves but not with the intention of committing suicide.

.....cut myself, pick up a knife ...stab yourself 'til you bleed.

I have voices that tell me to hurt myself...cut my wrists stuff like that...then I'll hurt.

- **Harm-Other.** Coded when the commanding voice commands the client to physically or emotionally hurt another person either by acts of physical, sexual or verbal abuse. This would include being instructed to kill another person.

The Devil tells me to harm peopleto hurt my family and the CPN...he wants me to strangle you.....I was told to stab my wife.

Every other day I get voices that tell me to hurt my neighbour.....tell her she's a bitch...

- **Innocuous.** Coded when the commanding voice does not instruct the client to conduct any acts of physical, sexual or verbal aggression to self or others. On some occasions these commands may suggest a positive or protective function.

They tell me to look down when I'm on the toilet, to throw my tea away.....

.....but others tell me to be brave and I shouldn't.

But he says 'look after your family...get on with your life'.

"Come on relax, let it go".

Content (Other):

- **Derogatory Comments:** Coded when the commanding voice makes derogatory comments about the client.

They say nasty things about me. You're ugly, you're fat, you're a bad mum. Failure! Failure!

.....he tells me about things that I did wrong when I was small....he tells me how bad I was.

- **Personal Knowledge.** Coded when the client describes the commanding voice as knowing personal details about the client and/or significant people in the client's life.

They know stuff, they talk about my family sometimes they tell me things I didn't know but I find out they are true.

He talks about my daughter and wife.

He says my husband doesn't love me.....he uses my name all the time.....

Onset: Coded when the client describes their beliefs about the origin of the commanding voice and/or any current triggers that the client can identify.

- **Origin**

It started after a school trip....was experiencing migraineswas ill in bed...suddenly I heard a voice.

I think it's 'cos of damage to my brain at birth.

I think I might hear them 'cos someone is paying me back for things I've done.

- **Triggers**

I am like a bucket.....if I fill it with stress then I hear the voices.

.....maybe it's when I'm depressed.....

I hear them all the timebut more when I'm depressed.

It's worse in the evenings and when I'm not well.

CORE COMPONENT CODING

The content of command hallucinations can be coded into one of four categories on the CH-CS:

- **Suicide.** Coded when the commanding voice is instructing the client to commit suicide.
- **Harm-Self.** Coded when the commanding voice instructs the client to harm themselves but not with the intent of committing suicide.
- **Harm-Other.** Coded when the commanding voice commands the client to physically or emotionally hurt another person either by acts of physical, sexual or verbal aggression.
- **Innocuous.** Coded when the commanding voice does NOT instruct the client to conduct any acts of physical, sexual or verbal aggression. May also include commands that appear to have a positive/protective element.

SECTION TWO – Response to command hallucinations

This section is completed when a client describes their emotional and behavioural response to the commanding voice.

The aim here is to identify the immediate changes in affect that occur when hearing the commanding voice and identify how the client behaves in response to the commanding voice.

Examples from transcripts illustrate the type of information sought for each section:

Emotional Responses: Coded when the client describes the emotional response they experience as a result of hearing the commanding voice.

I feel nasty when I hear, I feel like lashing out. I get frightened and I panic, feel like I'm going mental. Lose all control.....

When I hear them I feel bullied..... I feel terrible. I feel worthless and useless.

I get angry.....nervous.....anxious. I am restless and pissed off, I get frustrated.

I feel stressed and frightened when I hear voices.

Within this section it may be useful to identify the frequency and range of emotional experience. In addition, any variations should be noted.

I sometimes feel frightened but always nervous.

Every time I hear him I feel defeated.

I always feel angry.

Behavioural: Coded when the client acts in response to the command.

On several occasions I have obeyed 'Kill Yourself! Kill Yourself!'...I have tried to hang myself and overdosed....I have gone for the kitchen knives but my girlfriend stopped me.

They tell me to 'tie your nightgown to the shower and hang yourself'.....This week I tied my nightdress to the shower but it fell down.....

Normally I do what the voice tells me tocutting mostly.

They tell me...'take an overdose stab yourself'.....I cut myself with a knife or razor. I have taken tablets but I have always told someone.

When they tell me to hurt my neighbour I cut my arms.....I have stabbed myself in the stomach.

CORE COMPONENT CODING

We have found that there are four ways of categorising the individual's behavioural response to the command:

Compliance: Coded when the client follows the exact instructions of the commanding voice. Sometimes an individual may be planning to follow exact instructions but is stopped by situational variables (e.g. hospitalisation) or a third party. This should still be categorised as compliance. If the client contacts a third party to directly ask for help instead of complying this should not be counted as compliance.

Harm Self: Compliance

When I hear my voice I self-harm. I cut myself with a razor, I have taken tablets to make myself sick.

I've also slammed the car door on my finger and broke it 'cos the voice told me to hurt myself.

Suicide: Compliance

On several occasions I have obeyed 'Kill Yourself! Kill Yourself!'...I have tried to hang myself and overdosed....I have gone for the kitchen knives but my girlfriend stopped me.

Harm-Other: Compliance

They were saying stab him in the head, I wanted to do it anyway but the voices tipped me over the edge and I did it

Innocuous: Compliance

They tell me not to bath, not to go to my friend's house. I always do what they suggest.

Partial Compliance: Coded when the client follows the nature of the command but to a lesser degree. The client's behavioural response does not change category with regards to type of command experienced. Acts that move towards complying such as preparing tablets or getting a knife out of the draw should be coded as partial compliance.

For example:

Harm-Self: Partial Compliance

He says make yourself "take a knife to your arms'I have made myself sick
(The client responds to a harm self command by inducing vomiting which would initially have less severe consequences than cutting arms but still constitutes self-harm).

Harm-Self: Partial Compliance

They say.....stab yourself'.....I cut myself with a knife or razor

(The client responds by cutting which is less severe than stabbing oneself but still constitutes self-harm).

Harm-Other: Partial Compliance

They told me to beat my Dad up so I ended up getting aggressive with him

Suicide: Partial Compliance

I got a rope, I went to the woods and made a nice noose but I ended up getting pissed instead and they shut up then.

Appeasement: Coded when there appears to be a trade off with the voice that results in the client responding in such a way that the response reflects a shift from one type of command category to another (not necessarily less severe).

For Example:**Harm-Other: Appeasement**

When they tell me to hurt my neighbour I cut my arms.....I have stabbed myself in the stomach. (When commanded to harm other the client responds by cutting which is self-harm).

Harm-Self: Appeasement

Twice this week I have defied them and didn't burn but I had to take my cross and chain off. (When commanded to harm-self the client responds by taking off the crucifix which she sees as protection).

Suicide: Appeasement

I do things to keep it happy like bang my head but not kill myself.
(Client responds to a suicide command by self-harming).

Non-Compliance: Coded when the client describes not responding to the actual command.

I won't hurt other people.

They tell me to kill myself but I know I will never do it.

If the client initially tries not to comply but is unsuccessful and does respond in some way that would fit one of the above categories then their response should be categorised as such. Attempts to resist/postpone responses should be noted qualitatively as Coping Strategies.

I won them sometimes and have ignored them

I keep saying 'stop' and try and ignore them.

They said "kill the two of you", I rang the hospital [the individual made no attempt to obey]

On occasion there may be a range of responses that meet more than one category. In such an instance the most severe/dangerous behaviour should be coded even if it is not the initial response.

For example:

When the voices tell me to kill myself, initially I cut myself but they keep getting on at me and so I end up taking all my tablets.

Whilst the initial response was an attempt to appease the voice the individual ultimately attempts suicide. The response would therefore be categorised as compliance.

SECTION THREE: Consequences of behavioural response

This section probes for what happens as a result of the individual's immediate response to the hallucinatory experience.

When interviewing it may be useful to note the range of emotion experienced and the duration of the effects of the client's behavioural response on the voice or the client's emotional state in order to determine how powerful or enduring the effect of their behaviour is.

If I do what they say I feel better but guilty, if I don't then I feel low but proud and glad but I worry a lot about what would happen.

.....when I bang my head or cut myself... it makes me feel better-less stressed..... Later I feel terrible that I've done what they said.

Initially when I cut they are quiet for a few seconds.

Sometimes when I obey them they stop, but not for long.

I feel better.....momentarily, only for seconds.

CORE COMPONENT CODING

Function of the Behavioural Response: This category is coded when the client describes the effects of their behavioural response (real or perceived) on their experience of command hallucinations.

There appear to be numerous functions of an individual's response to command hallucinations. Often individuals will describe numerous functions, although in our experience they spontaneously describe the most reinforcing first. In cases with multiple functions, the first function that is mentioned should be noted as the primary function but all others should be listed.

It is acknowledged that a client may respond differently on different occasions. Therefore, the category allocated should be determined based on how the client responds most of the time while noting there are occasions when the client responds differently.

There may be direct effects on the hallucinatory experience in terms of the nature or content of the voice changing:

If I disobey the voice it gets louder and louder. It doesn't make any sense to obey because she doesn't go. If I disobey Nan then Dad steps in and praises me.

Most of the time I try and ignore them but they get so loud. Sometimes when I obey them they stop..... When I talk to other people.....they calm down....get softer.

.....the voice stops picking on others and turns to me.

the client's emotional state changing

.....when I bang my head or cut myself... it makes me feel better-less stressed..... Later I feel terrible that I've done what they said.

I experience momentary relief and elation!

When I disobey, I feel really anxious but eventually the feeling goes.

When I cut myself I feel better, I still get anxious and angry but not as much as when it tells me to hurt others. I feel better.....

It may be useful to note the range of emotion experienced and the duration of the effects of the client's behavioural response on the voice or the client's emotional state.

If I do what they say I feel better but guilty, if I don't then I feel low but proud and glad but I worry a lot about what would happen.

.....when I bang my head or cut myself... it makes me feel better-less stressed..... Later I feel terrible that I've done what they said.

Initially when I cut they are quiet for a few seconds.

Sometimes when I obey them they stop, but not for long.

I feel better....momentarily, only for seconds.

Subsumed in this section are the individual's beliefs about the consequences of compliance or non-compliance.

Consequences of Compliance: The individual's descriptions are an anticipation of what the consequences might be for complying with a command regardless of whether the client actually complies.

This may reflect a belief about wider social or personal consequences:

I could get in trouble with the police

I'd feel guilty.....couldn't do that.

....I could get into trouble.

If I killed him, I would have to die too

Or reflect implicit cognitions that emerge from the individual's description of experiencing command hallucinations:

The voices stop when I cut..... At first I resist the voice, then it gets worse..... When I do what the voice says it stops for a while. Consequently, the client may hold the belief - if I comply then the voice stops.

Consequences of Non-Compliance: Coded when the client describes the consequences of non-compliance. This can be either

a) What the client believes would happen

If I don't do what they say the voices would become unbearable, they would get to screaming pitch and tell me to kill myself-I would have to cut my wrists instead of my arms.

If I never did what it said it would never stop-it would drive me mad.

If I don't do what they say I will feel terrible and allot worse they will kill me and the voice would hurt other people.

Or

b) consequences stated by the commanding voice

The voice says something bad will happen to people I care about.....if I don't do this then one of the children will get killed.....something might happen to my mother or we might crash.

The voice tells me it will kill me if I don't do it.

CORE COMPONENT CODING

We have described four key functions:

The individual believes that their behaviour reduces the emotional distress associated with the command hallucination experience: The individual's behavioural response serves to reduce the emotional distress that occurs as a result of the command hallucinations. For example:

when I bang my head or cut myself it makes me feel better; less stressed

I experience momentary relief and elation!

When I disobey, I feel really anxious but eventually the feeling goes.

When I cut myself I feel better, I still get anxious and angry but not as much as when it tells me to hurt others. I feel better.....

To alter the characteristics of the command hallucination: the individual's behavioural response serves to alter the intensity, frequency, duration or content of the command hallucination. For example:

the voice gets quieter when I bang my head or cut myself

If I disobey the voice it gets louder and louder. It doesn't make any sense to obey because she doesn't go.

If I disobey Nan then Dad steps in and praises me (the content is changed from negative to positive)

Most of the time I try and ignore them but they get so loud. Sometimes when I obey them they stop..... When I talk to other people.....they calm down....get softer.

the voice stops picking on others and turns to me.

To prevent perceived consequences of non-compliance: The individual's behavioural response is an attempt to prevent what they perceive to be wider consequences. This might be based on what the individual believes will happen or what the voice threatens will happen

If I don't do what the voice says then someone will die or my dog will die

Wayne [the voice] says that unless I cut all my family will die

To prevent perceived consequences of any form of compliance: This is often a function of non-compliance and occurs when an individual believes that there will be wider consequences if they engage in any form of compliance.

I could get in trouble with the police, or go to prison so I cut my arms instead.

My family would be devastated if I killed myself

If I obey them, they will have won and I don't want to give in like that

SECTION FOUR: Coping

Coping: Coded when the client reports ways in which they manage the experience of hearing command hallucinations. If possible, highlight times that coping strategies are more or less effective i.e. that they enable the client to resist responding behaviourally (even for a short time) or to reduce the emotional distress experienced.

I try to walk it off-pace up and down...I go and visit my son and daughter. I lock the doors to my flat to stop me hurting other people.

I try humming, listening to music on the headphones...When I talk to other people that sometimes helps.

When I hear them I try to feel my surroundings...I might try to read the booklet the doctor gave me or I get my husband to read.....I swear at them and put earplugs in. I think of what the doctor said 'they can't hurt you'.

CORE COMPONENT CODING

Coping strategies can be categorised in the following ways:

Alter the environment or behaviour: This is coded when the individual alters something in their environment to manage the command hallucination, physically does something with themselves in order to manage the experience, or engages in some form of external distraction. The use of drugs or alcohol (even when the implicit function of doing so is to manage their distress) is also included in this category.

I lock the doors to my flat to stop me hurting other people.

I will listen to the radio

I avoid my daughter

I ignore them by keeping busy

Addressing the voice directly: This is coded when the individual engages in some form of dialogue (internally or externally) with the voice

I try to fight it...I keep saying 'stop'.

Sometimes I try to reason with the voice, I tell it that I won't do what it says.

Reason (cognitively) with the voice or with themselves: This should be coded when the individual explicitly states that they engage in a cognitive process in order to reason about whether they should comply or not. This might include self-affirmations.

I try to think what will happen if I do what he says. I weigh it up, I know it would hurt everyone

I think of what the doctor said 'they can't hurt you' "

I think to myself, you are stronger than that

References

- Beck-Sander, A., Birchwood, M., & Chadwick, P. (1997). Acting on command hallucinations: A cognitive approach, *British Journal of Clinical Psychology*, 36, 139–148.
- Chadwick, P. & Birchwood, M. (1994). The omnipotence of voices: A cognitive approach to auditory hallucinations, *British Journal of Psychiatry*, 164, 190-201.
- Curson, D., Patel, M., Liddle, P.F., et al (1988). Psychiatric morbidity of a long-stay hospital population with chronic schizophrenia and implications for future community care, *British Medical Journal*, 297, 819-822.
- Erkwoh, R., Willmes, K., Eming-Erdmann, A. & Kunert, H. J. (2002). Command hallucinations: who obeys and resists when? *Psychopathology*, 35, 272-279.
- Fox, J. (2002). Command hallucinations in individuals within forensic and non-forensic populations. Unpublished Doctoral Thesis, Cardiff University.
- Garety, P. A., Kuipers, E., Fowler, D., Freeman, D. and Bebbington, P. E. (2001). A cognitive model of the positive symptoms of psychosis, *Psychological Medicine*, 31, 189-195.
- Gilbert, P. (1984). *Depression: From Psychology to Brain State*, London, Lawrence Erlbaum Associates in Chadwick, P. & Birchwood, M. (1994). The omnipotence of voices: A cognitive approach to auditory hallucinations, *British Journal of Psychiatry*, 164, 190-201.
- Hersch, K. & Borum, R. (1998). Command hallucinations, compliance and risk assessment, *J Am Acad Psychiatry Law*, Vol. 26, No. 3, 353-359.
- Junginger, J. (1995). Command hallucinations and the prediction of dangerousness, *Psychiatric Services*, 46, 911-914.
- Rogers, R., Gillis, J. R., Turner, R. E., & Frise-Smith, T. (1990). The clinical presentation of command hallucinations in a forensic population, *American Journal of Psychiatry*, 147, 1304–1307.
- World Health Organisation (1973). *Schizophrenia: A Multitudinal Study*, Geneva: WHO.

**COMMAND HALLUCINATIONS INTERVIEW SCHEDULE (CH-IS)
CODING SHEET**

Client's Name: _____ **Date of Birth:** _____

Identification Number: _____ **Date Interviewed:** _____

Interviewer Name: _____ **Interviewer Designation:** _____

Length of Previous Contact with Client (Hours): _____

Client Context at Time of Interview:

Community Inpatient ☐

Community Out patient ☐

Forensic Inpatient ☐

Forensic Outpatient ☐

Other _____

Coding Sheet Completed

By: _____ **Date** _____

Multiple Commanding Voices Identified YES ☐ NO ☐

If yes, then note if treated as one voice or give rationale for focusing on specific commanding voice:

Always refer to the guidelines when coding

Characteristics:

Power

Examples of Command(s)

Comments

Knowledge_

Origin _____

Triggers: _____

Note: If the client experiences multiple types of commands. Please describe and note rationale for focusing on one command for the remainder of the interview:

CH-IS CODING SHEET

Always refer to the guidelines when coding

Type of Command on which the interview focused:

Suicide ☐ Harm-Self ☐ Harm Other ☐ Innocuous ☐

SECTION TWO: Responses

Emotional (note variation):

Behavioural (note variation):

Coping

Main Type of Behavioural Response:
Compliance☐ Partial Compliance☐ Appeasement ☐ Non-Compliance ☐

Other types of behavioural response that can occur:

CH-IS CODING SHEET
Always refer to the guidelines when coding

SECTION TWO (cont): Responses

Effects of Behavioural Response(s)- (note variability)
On Voices

On Emotional State

Effects of coping strategies: On Voices (note variability)

On Emotional State

Note any implicit cognitions that influence behaviour:

CH-IS CODING SHEET
Always refer to the guidelines when coding

SECTION THREE: Beliefs about Consequences

Consequences of Compliance

**Consequences of Non-Compliance:
Client's beliefs**

Stated by CH

Function of Behavioural Response:
Secondary

Primary

To reduce emotional distress associated with CH

To alter topography of CH

To prevent wider perceived consequences of non-compliance

**To prevent the perceived consequences of compliance,
partial-compliance or negotiation**

Tertiary Function/Other Function

Appendix 2

Command Hallucinations and Risk of Violence and Self-harm:

What distinguishes compliers from non-compliers?

Dear Colleague

We are in the process of undertaking a large scale research project to investigate the factors underpinning compliance with command hallucinations. In order to examine this phenomenon accurately and in detail we have devised a structured interview (The Command Hallucinations Interview Scale) that attempts to capture the main components of an individual's response to command hallucinations.

A thematic analysis of the responses to this interview schedule has already been completed in order that we could begin to categorise responses. We are now interested in the extent to which these categories are reliable.

You will find enclosed a copy of the manual that describes how to administer the interview and how to categorise the resulting information. You will also find enclosed ten randomly selected examples of responses to the interview questions in the form of transcripts and vignettes.

We kindly ask you to **read the manual and the transcripts thoroughly** and then, using the manual as a resource, complete core component coding sheets for each participant. You will notice that some participants describe numerous types of commands, in such cases a coding sheet should be completed for each type of command. Further information as to how to manage multiple commands is included in the manual.

You are reminded that whilst these transcripts have been anonymised, they remain confidential and you are asked to respect this confidentiality and to return all of the enclosed material to the principle researcher with your responses.

If you have any questions or queries regarding this exercise or the research project in general please do not hesitate to contact me.

Yours sincerely

Dr Liz Andrew
Clinical Psychologist & Research Fellow

Appendix 3

SL14 Favourable opinion following consideration of further information
Version 2, October 2004



Canolfan Gwasanaethau Busnes
Business Services Centre

South East Wales Local Research Ethics Committee Panel C

Direct Line: 02920 402420

E-mail: Carl.phillips@bsccardiff.wales.nhs.uk

Dr Elizabeth M Andrew
Clinical Psychologist & Research Fellow
Pontypridd & Rhondda NHS Trust & Cardiff University
School of Psychology
Cardiff University
Park Place
CF10 3YG

16 May 2005

Dear Dr Andrew

Full title of study: *Command hallucinations and risk of violence or self-harm: what distinguishes compliers from non-compliers*

REC reference number: 05/WSE03/52

Protocol number:

Thank you for your letter of 10 May 2005, responding to the Committee's request for further information on the above research and for submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised.

The Committee has designated this study as having "no local investigators". There is no requirement for [other] Local Research Ethics Committees to be informed or for site-specific assessment to be carried out at each site.

Conditions of approval

The favourable opinion is given provided that you comply with the conditions set out in the attached document. You are advised to study the conditions carefully.



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Appendix 4

Command Hallucinations and the Risk of Violence and Self-Harm: What distinguishes compliers from non-compliers?

Brief Information Sheet

Who I am?

My name is Dr. Liz Andrew, I am a Clinical Psychologist working in Pontypridd. I also work in Cardiff University.

I would like to invite you to take part in a study that is trying to understand why people hear voices. This leaflet will give you some brief information that will help you to decide whether you want to take part.

The Study

Lots of people that I see in my work hear voices. Some people say that these voices give them commands; they tell them to do things. Sometimes the voice can tell the person to do day-to-day things like making a cup of tea but sometimes the voice can command more dangerous or risky things like telling the person to hurt themselves or other people. This can be very frightening or upsetting. We are trying to find out why people hear these voices, how they feel when they hear them and why some people find it hard to ignore the voices or disobey their commands.

What is involved?

We are interested in speaking to anyone that hears voices.

If you are interested in this study you should either contact me directly or ask a member of staff to send your details to me. When I get your details we will arrange to meet up and I can tell you about the study in more detail. **This does not mean you have to take part.** However, if you do decide to take part I will ask you some questions about yourself, your background, about the voices you hear and how you cope with them. We will also do some reasoning tests.

Taking part in the study is totally voluntary and it is important that you take some time to think about the study. If you do decide to take part you can withdraw at any time without giving a reason for doing so. Any information you give will be confidential unless you are a serious risk to yourself or others.

You will be paid for your time.

If you would like any more information please do not hesitate to contact me on:

01443 443777 or 02920 870072

Appendix 5

Direct Tel: 01443 443777/02920 870072

**Command hallucinations and risk of violence or self-harm:
what distinguishes compliers from non-compliers?**

Participant Details

Please complete this form if you are interested in finding our more about taking part in the above named research project. **Providing your details does not mean you have to take part** it will just allow the researcher to meet with you and give you more information.

These details will not be kept if you decide not to take part.

Name

Address.....

Contact telephone number

Most convenient place to meet.....

Name of key worker/care co-ordinator.....

Contact telephone number of key worker.....

Please return this form to:

**Dr. Liz Andrew, Clinical Psychologist & Research Fellow
School of Psychology
Cardiff University
Park Place
CF10 3YG**

Or telephone on the number above

Appendix 6

Command Hallucinations and Risk of Violence and Self-harm:

What distinguishes compliers from non-compliers?

You are being invited to take part in a research study that is being conducted by Dr. Liz Andrew, Clinical Psychologist in Pontypridd and Rhondda NHS Trust and Research Fellow at Cardiff University. Before you decide whether to take part it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please feel free to ask any questions if there is something you are not sure about or if you would like more information. Take time to decide if you want to take part.

What is the purpose of the study?

A significant number of the people we see in our clinics report hearing voices. Some people say that these voices give them commands; the voices tell them to do things. Sometimes the voices can command the voice hearer to do a day-to-day activity like making a cup of tea but sometimes the voices can command more dangerous or risky things like telling the voice hearer to hurt themselves or other people. We are interested in finding out why people hear these particular voices, how they feel when they hear the voices and why some people find it hard to ignore the voices or disobey their commands.

Why have I been chosen?

You have been invited to take part because you may have told one of the professionals involved in your care that you hear voices. We are interested in speaking to anyone who hears voices regardless of what the voices say to them. We are hoping to interview at least 300 people in total.

Do I have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time without giving a reason. If you do decide to withdraw the care that you receive will not be affected in any way.

What is involved if I do agree to take part?

If you do decide to take part you will be asked to meet with a researcher (who is a Chartered Clinical Psychologist). This meeting will take place at the location where you normally receive your care, this might be a day hospital, CMHT base or outpatients

clinic. You will be asked some personal information such as your age, your marital status, and your family background. The researcher will then ask you about your experience of hearing voices and how you cope with that experience. She will also ask you to complete some tests of memory and reasoning ability. In all you may have to complete up to 10 questionnaires. This should take no longer than two hours. You can choose whether you want to complete this in one or two sessions. If you hear voices that tell you to do things the researcher will ask you to meet with them at two future time points: after one month and after six months. These sessions will be much shorter lasting approximately twenty minutes.

You will be paid expenses.

If you do decide to take part we will also ask if we can have access to your psychiatric notes. This is just to help us find out information about your medication and psychiatric history.

What are the possible disadvantages of taking part?

This study is a psychological study so there are no invasive procedures and no known risks involved in taking part. However, some people find it difficult or upsetting to talk about the voices that they hear or to talk about difficult life events. Sometimes when people have talked about the voices they notice that, for a little while, the voices can be louder or can say different things. On the other hand some people notice that talking about the voices actually helps.

Dr. Andrew (the interviewer) is a Clinical Psychologist who works mostly with people that hear voices. If you wish she will be able to suggest strategies that may help to ease your distress.

What are the possible advantages of taking part?

Whilst there may be no direct clinical benefit to you from taking part in the study the information you provide will be used to further our knowledge about why people hear voices. More importantly we hope to be able to develop psychological therapies that help people have more control over the voices they hear.

If you wish, after you take part in the study the interviewer will give you information about potential places for additional help. The interviewer is also able to give feedback to your key worker if you think it will be helpful.

Will my taking part in this study be confidential?

All of the information you provide will be confidential and you will not be able to be identified by anyone other than the interviewer. The questionnaires that you complete will be seen only by research team and will be kept in a locked filing cabinet to which only the researchers have access. The questionnaires will be kept for up to five years.

There are certain rare circumstances when confidentiality will be broken. If the interviewer believes you are at serious risk of hurting yourself or someone else they have a professional duty to inform a member of staff involved in your care.

Who is funding the research?

This research study is being funded by the NHS National Research and Development Programme on Forensic Mental Health.

What if I have any complaints about the research?

If you have any concerns or complaints about the way in which this research is being carried out you should contact either a member of staff involved in your care or a member of the research team.

Further Information

If you have any questions about taking part in this study or require any more information please do not hesitate to contact Dr. Liz Andrew on **02920 870072** or **01443 493240**.

Thank you for taking the time to read this.

Your help is greatly appreciated

You will be given a copy of this information sheet to keep.

Appendix 7

Direct Tel: 01443 443777/02920 870072

Command hallucinations and risk of violence or self-harm: what distinguishes compliers from non-compliers?

Debrief Information

Dear Participant

You have just taken part in a psychological study. In doing so, you have contributed towards our understanding of auditory hallucinations and command hallucinations in particular.

The study aims to explore firstly the reasons why some people find the experience of hearing voices distressing and secondly why some people can ignore commands given by these voices whilst others cannot. Given that some people find it very difficult to ignore commands to hurt themselves or others, the findings of this study should be very important in trying to understand how we can help people in the future. Ultimately, it is hoped that a greater, more specific range of treatment approaches can be offered to individuals for whom hearing voices and commands is not a pleasant experience.

You will have answered lots of questions about yourself, your life, and the voices that you hear in the last hour or so. This may be the first opportunity you have had to talk about these things in detail. People have different experiences having talked about these issues. Some will experience a slight increase in distress and find themselves thinking about things for a short while. For some, the voices that they hear can change; they can get louder or say different things – this is a normal response; it is all part of making sense of what is happening and should not last long. Most people will not experience any changes or distress. If you do experience prolonged distress or find your feelings after this interview unmanageable please do not hesitate to contact me and we can discuss your options. Alternatively you can use some of the information here to help you.

Thank you once again for your participation.

Dr. Liz Andrew
Chartered Clinical Psychologist and Research Fellow

Understanding Voices

Where to get more information or help

There are lots of places where you can get information to help you understand the experience of hearing voices.

The Hearing Voices Network is able to provide lots of information about hearing voices and also helps people to start up or find local self-help groups. Groups can be helpful as talking with other voice hearers gives you the opportunity to share experiences and learn from others about the way they cope with the voices.

The Hearing Voices Network www.hearing-voices.org

Tel: 0161 834 5768 for more information

In some areas, Hearing Voices Groups are also run by the mental health services provided by the NHS. Ask your key worker for information about services in your area.

If you have access to the internet (it is freely available in most libraries) you can chat to other voice hearers online at: <http://groups.yahoo.com/groups/voice-hearers>

MIND also has lots of information about experiences such as hearing voices, holding unusual beliefs. A list of the local branches of MIND is given in this pack.

Understanding Voices

What is it like to hear voices?

It can be difficult to explain what it is like to hear "voices". It may be the same as hearing a voice in the normal way through your ears, the difference being that the "voice" has no physical cause - but like normal voices, there is variety and every experience is different. As well as hearing voices through the ears, people can also hear voices as if they are thoughts entering the mind from somewhere outside themselves. This is not the same as having a sudden idea, which people usually recognise as coming from themselves, rather the thoughts are not their own and seem to come from outside their own consciousness. A good example of this is the experience of recalling a rhyme or tune, which you find yourself repeating unconsciously under your breath and which keeps going through your head again and again. You can even find yourself humming it. You never took a decision to start thinking of it and it's difficult to stop thinking about it. The difference between the tune and the voice which appears as words in your mind is that the voice may go on to speak coherently to you and even engage you in conversation. You, yourself do not appear to be responsible for it and you have no idea what this "voice" is going to say next.

Everybody's experience of hearing voices is different. Voices can be experienced inside the head, from outside the head or even in the body. It may be one voice or many voices. The voice may talk to you or about you. Voices can be like dreams. We all dream and experience words, images and even sensations. When we are bored we can drift off and have a short dream. When we dream all sorts of strange things can happen to us, but we still believe they're really happening. Hearing voices can be like that; a waking dream but something that is experienced as real. For voice hearers, the voices might be present all day and have the effect of preventing them from doing things in their daily life. The person might feel as if the voices will punish them if they don't do what the voice wants them to do.

Who hears voices?

There are certain circumstances in which people seem more likely to hear voices. Research suggests that over half of people who recently lost a friend or loved one report hearing voices. Voices can also be triggered by traumatic life events or extreme emotion.

Research has shown that there are many people who hear voices (up to 10% of the general population), some of whom cope with their voices well without psychiatric intervention. It has also been found that there are people who regard the voices they hear as a positive part of their lives. There are people who hear voices that they find

inspirational and comforting. Importantly, we have been able to learn from these people and have found that talking about the voices, making sense of them and using effective coping strategies can help to lessen the distress.

Hearing voices can be regarded as a meaningful, real (although sometimes painful, fearful and overwhelming) event. Sometimes in thinking about the voices, it can become clear that the voices are speaking to the person in some way about their life, emotions and environment. For instance, people experiencing distress as a consequence of abusive or commanding voices can sometimes recognise the voices they hear as those of actual abusers or bullies and the voices have the same effect of attacking their sense of self-esteem and worth.

Many people who hear voices and have contact with psychiatric services will be offered medication to help them with their experiences and emotions. Most people find these medications beneficial but it has been found that up to a third of people continue to hear distressing voices. The more we learn about voices, the more we realise that talking about them can also help. Psychiatrists, Psychologists and Nurses in the UK and the Netherlands are developing techniques to help voice hearers focus on their experience and get to know their voices better. These approaches help the voice hearer to make space for the voices, to listen but not to necessarily follow, to engage, but in their own time and space – essentially, to learn how to control the voices. Alternatively, if the person does not want to hear the voice as often these professionals can help the voice hearer find strategies to distract themselves from the voices.

Practical information for people who hear voices: Some useful tips

- **Earplugs** When the voices start talking some people find it useful to use earplugs in either one or both ears. These can help by making the voice quieter or by blocking it out.
- **Walkman** A walkman can work the same way as earplugs. Choose a tape that you really enjoy and keep your walkman with you to use when the voices start. The music can distract you or drown the voices out.
- **Socialising** Some people find it useful to ring a friend or arrange to go out with a friend when the voices start.
- **Exercise** It can help to go out for a walk or do some other form of gentle exercise.
- **Reading** Reading a book, magazine or newspaper – especially out loud – can help you to focus on something other than what the voices are saying.
- **Relaxation** People are more likely to hear voices when they are anxious, angry, upset or stressed so relaxation can help to decrease voice activity. If you find it hard to relax by yourself a relaxation tape may help.
- **Sleep** Nearly everyone would hear voices if they were deprived of sleep for long enough. It is important to try and get enough sleep (at least six hours per night) every night. Try to set up a bedtime routine that includes cutting out caffeine after 2pm, winding down from the day and relaxing, having a pleasant place to sleep that is free from distractions. Try to go to bed at the same time every night and wake up at the same time each morning.

Practical information for people who hear voices: Talking about the voices

For some people that hear voices the experience can be overwhelming and can be difficult to reason. Open discussion with others can offer a means of helping you to accept your voices and lessen your distress.

- Communication between voice hearers gives you the opportunity to share experiences and to learn from one another. This can be achieved by joining or setting up self help groups, such as those established by the Hearing Voices Network throughout the UK.
- Voice hearers say it is important to discuss voices. In talking about them it is possible to learn to recognise their games and tricks, as well as their pleasant aspects, and to identify patterns and triggers for the voices. This can help you to be better prepared for future onset of voices.
- Voice hearers may think they are alone in hearing voices. This makes the experience unpleasant and produces feelings of shame or the fear of going mad. Talking to others can help you to normalise the experience.
- It can be helpful for voice hearers to seek explanations for their voices. Understanding what contributes towards the experience of hearing voices can help you to develop the most appropriate coping strategies.
- When you hear voices that are malicious it is difficult to accept the existence of a positive, helpful dimension to the experience. Contact with other voice hearers can lead to the discovery that positive voices do exist.
- Putting a structure around the relationship with the voices helps minimise feelings of powerlessness. It is useful to see that you can set your own limits and restrain the voices from excessive disruption in your life.
- Sharing experiences enables voice hearers to get to know what medicines others are using, how useful these are, and what their side effects may be. It is important,

for example, to know whether a particular medicine is helpful in reducing the hearing of voices or easing anxiety and confusion.

- Voice hearers who have learned to adjust to their experiences report that the process has contributed to their personal growth.
- Communicating about voices does have its disadvantages. Voice hearers can feel very vulnerable, some voice hearers find great difficulty in opening up about their experiences, though it can be easier with other voice hearers. Another drawback is that the voices may occasionally become worse albeit temporarily. All in all, though, voice hearers have reported that the advantages outweigh the disadvantages.

Appendix 8

Area of risk		Singular occurrence	Repetitive occurrence
Verbal Aggression	<ul style="list-style-type: none"> Insulting remarks or swear words to others Shouting insulting words or swear words Threatening violence to self Threatening violence to others Threats to kill 		
Aggression against property	<ul style="list-style-type: none"> Minor incident – banging table, slamming door Slamming door hard, ripping of clothes, kicking table or chairs Causing purposeful damage to objects, urination on objects, smearing faeces Throwing objects in a potentially dangerous manner Setting fire to objects causing minor damage, using object as a weapon Serious arson attempt 		
Physical Aggression	<ul style="list-style-type: none"> Makes menacing/threatening gestures to others Grabs at people Pushes/pulls others Hits, kicks, scratches, pulls hair causing mild injury to others Attacks others causing serious injury (e.g. loss of teeth, fractures, deep cuts) Attacks others causing death, coma or multiple injuries 		
Sexual Aggression	<ul style="list-style-type: none"> Making sexual gestures to others Making menacing sexual gestures/threats to others Grabs or touches other/s in a sexually aggressive way (rubbing against someone) Grabs at others' clothing (e.g. pulling down someone's skirt or trousers) Attacks someone for sexual purposes (no weapon involved) – results in no injury or minor injury to victim Abduct/hold hostage (e.g. barring the door) someone for sexual purposes Attacks someone for sexual purposes resulting in moderate injuries (broken bone, loss of teeth) Attacks someone for sexual purposes resulting in serious injury (death, coma, multiple injury) 		
Self-harm	<ul style="list-style-type: none"> Talks about harming self (in a non-aggressive manner) Hits self with no injury Scratches self, pulls out hair, throws self on floor Bangs head/fists on wall, inflicts minor cuts, bruises, burns etc. Serious injury to oneself (deep or repeated cuts, fractures, head injury) 		
Suicide	<ul style="list-style-type: none"> Attempted suicide that was unlikely to have been successful – sought help Made serious suicide attempt – was likely to have been successful if had not been discovered 		
Sexual Vulnerability	<ul style="list-style-type: none"> Lack of clothing or inappropriate clothing Attempting to kiss others without invitation Attempting to touch others in a sexual manner Exposure of breasts or genitalia Stripping of clothing in public Walking through public areas in full nudity Masturbating in public 		

Group								
GH					CH			
N		N			N			
		Mean	Median	SD		Mean	Median	SD
Somatic	25	1.88	1.00	1.364	49	1.47	1.00	1.002
Anxiety	25	3.24	3.00	1.234	49	3.53	4.00	1.101
Depress	25	2.84	3.00	1.434	49	3.67	4.00	1.125
Suicide	25	1.36	1.00	.907	49	2.45	3.00	1.459
Guilt	25	2.12	1.00	1.616	49	2.61	3.00	1.579
Hostil.	25	2.24	2.00	1.332	49	2.24	2.00	1.234
elevate	25	1.68	1.00	1.282	49	1.14	1.00	.645
grandios	25	1.56	1.00	1.044	49	1.22	1.00	.685
suspicious	25	3.08	3.00	1.320	49	3.00	3.00	1.155
halluc	25	3.84	4.00	.943	49	4.16	4.00	1.179
unusual thought	25	3.04	4.00	1.620	49	1.71	1.00	1.258
bizarre	25	2.08	1.00	1.631	49	1.49	1.00	.916
neglect	25	1.76	1.00	1.234	49	1.65	1.00	1.110
orientation	25	1.24	1.00	.663	49	1.18	1.00	.667
disorganis.	25	1.88	1.00	1.364	49	1.22	1.00	.587
blunt	25	2.48	3.00	1.558	49	2.14	2.00	1.242
emotional withdrawal	25	1.96	1.00	1.274	49	1.76	1.00	1.199
retard	25	1.56	1.00	1.121	49	1.49	1.00	1.003
tension	25	2.72	3.00	1.100	49	2.22	2.00	1.343
uncoop	25	1.12	1.00	.440	49	1.06	1.00	.317
excite	25	1.56	1.00	1.083	49	1.35	1.00	.830
distract	25	2.56	3.00	1.635	49	2.22	2.00	1.295
hyperacti	25	1.12	1.00	.440	49	1.04	1.00	.286
manner	25	1.32	1.00	.900	49	1.00	1.00	.000
total	25	49.20	49.00	11.920	49	46.76	47.00	9.364

References

- Agid, O., Shapira, B., Zislin, J., Ritsner, M., Hamin, B., Murad, H., Troudart, T., Bloch, M., Heresco-Levy, U., Lerer, B. (1999). Environment and vulnerability to major psychiatric illness: a case control study of early parental loss in major depression, bipolar disorder and schizophrenia. *Molecular Psychiatry*, 4, 163-172.
- American Psychiatric Association (1987). *The Diagnostic and Statistical Manual of Mental Disorders 3rd Edition - Revised*. APA: Washington.
- American Psychiatric Association (1994). *The Diagnostic and Statistical Manual of Mental Disorders 4th Edition*. APA: Washington.
- Andrew, E. Gray, N. and Snowden, R. (2008). The relationship between trauma and beliefs about voices. *Psychological Medicine*, 38, 1409-1417.
- Bannister, D. (1968). The logical requirements of research into schizophrenia. *British Journal of Psychiatry*, 114, 181-188.
- Barrett, T. R., Etheridge, J. B., (1992). Verbal hallucinations in normals, I: People who hear "voices". *Applied Cognitive Psychology*, 6, 379-387.
- Barton, N. (2006). *Command Hallucinations: The development and evaluation of a semi-structured interview schedule*. Unpublished Doctoral Thesis. Cardiff University.
- Beck, A. T., Rush, A. J., Shaw, B. F., and Emery, G. (1979). *Cognitive Therapy of Depression*. Guilford Press: New York.

Beck-Sander, A., Birchwood, M., Chadwick, P. (1997). Acting on command hallucinations: A cognitive approach. *British Journal of Clinical Psychology*, 36, 139–148.

Benjamin, L. S. (1989). Is chronicity a function of the relationship between the person and the auditory hallucination? *Schizophrenia Bulletin*, 15, 291-310.

Bentall, R. P. (1990). *Reconstructing Schizophrenia*. London: Methuen.

Bentall, R. P., (1990). The illusion of reality: A review and integration of psychological research on hallucinations. *Psychological Bulletin*, 107, 82-95.

Bentall, R. P. (2003) *Madness explained: psychosis and human nature*. Penguin: UK.

Bentall, R.P., Fernyhough, C (2008). Social predictors of psychotic experiences: specificity and psychological mechanisms. *Schizophrenia Bulletin*, 34, 1012-1020.

Bentall, R. P., Slade, P. D., (1985). Reality testing and auditory hallucinations: a signal detection analysis. *British Journal of Clinical Psychology*, 24, 159-169.

Bhugra, D., Leff, J., Mallett, R., Der, G., Corridan, B., Rudge, S. (1997). Incidence and outcome of Schizophrenia in whites, African-caribbeans and Asians in London. *Psychological Medicine*, 27, 791-798.

Birchwood, M., Gilbert, P., Gilbert, J., Trower, P., Meaden, A., Hay, J., Murray, E., Miles, J., (2004). Interpersonal and role-related schema influence the relationship with the dominant 'voice' in schizophrenia: a comparison of three models. *Psychological Medicine*, 34, 1571-1580.

Birchwood, M., Meaden, A., Trower, P., Gilbert, P., Plaistow, J. (2000). The power and omnipotence of voices: subordination and entrapment by voices and significant others. *Psychological Medicine*, 30, 337 – 344.

Bleuler, E. (1924). *Textbook of Psychiatry*. New York: Macmillan.

Braham, L.G., Trower, P., Birchwood, M. (2004) Acting on command hallucinations and dangerous behavior: A critique of the major findings in the last decade. *Clinical Psychology Review*, 24, 513–528.

Breier, E., Astrachan, B.M., (1984). Characterisation of schizophrenic patients who commit suicide. *American Journal of Psychiatry*, 141, 206-209.

Brierre de Boismont, A. (1856). Report on two meetings of Societe Medico Psychologique, 29/10/1855 and 26/11/1855. *Annales Medico-Psychologiques*, third Series, 2, 126-140.

Buchanan, A., Reed, A., Wessely, S., Garety, P., Taylor, P., Grubin, D., Dunn, G. (1993). Acting on delusions: The phenomenological correlates of acting on delusions. *British Journal of Psychiatry*, 163:77- 81.

Buccheri, R., Trygstad, L., Dowling, G., (1997). Command hallucinations to harm in schizophrenia. *Journal of Psychosocial Nursing*, 45, 47-54.

Byrne, S., Birchwood, M., Trower, P.E., Meaden, A. (2006). *A Casebook of Cognitive Behaviour Therapy for Command Hallucinations: A Social Rank Theory Approach*. Routledge: East Sussex.

- Carpenter, W. T., Bartko, J. J., and Strauss, J. S., (1979). Signs and symptoms as predictors of outcome: A report from the international pilot study of schizophrenia. *American Journal of Psychiatry*, 35, 940-945.
- Chadwick, P, Birchwood, M., Trower, P. (1996) *Cognitive Therapy for Delusions, Voices and Paranoia*. Wiley and Sons: Chichester
- Chadwick, P., and Birchwood, M. J. (1995). The omnipotence of voices II. The Beliefs About Voices Questionnaire (BAVQ). *British Journal of Psychiatry*, 166, 773-776.
- Chadwick, P., and Birchwood, M.J., (1994). The omnipotence of voices: a cognitive approach to hallucinations. *British Journal of Psychiatry*, 164, 190-201.
- Chadwick, P., Lees, S., and Birchwood, M. (2000). The revised Beliefs About Voices Questionnaire (BAVQ-R). *The British Journal of Psychiatry*, 177, 229-232.
- Chadwick, P., Lees, S., Birchwood, M. (2000). The Revised Beliefs About Voices Questionnaire (BAVQ-R). *The British Journal of Psychiatry*, 177, 229-232.
- Chadwick, P.D. J., Birchwood, M. J., and Trower, P., (1996). *Cognitive Therapy for Delusions, Voices and Paranoia*. Wiley and Sons: Chichester.
- Cheung, P., Schweitzer, I., Crowley, K., (1997). Violence in schizophrenia: role of hallucinations and delusions. *Schizophrenia Research*, 26: 181-190.
- Ciampi, L. (1980) The natural history of schizophrenia in the long term. *British Journal of Psychiatry*, 136, 413-420.
- Claridge, G. (1985). *Origins of Mental Illness*. Oxford: Blackwell.

Clark, I. (2001). *Psychosis and Spirituality*. Whurr Publishers: London.

Close, H., & Garety, P., (1998). Cognitive assessment of voices: Further developments in understanding the emotional impact of voices. *British Journal of Clinical Psychology*, 37, 173-188.

Curson, D., Patel, M., Liddle, P.F., Barnes, T., (1988). Psychiatric morbidity of a long-stay hospital population with chronic schizophrenia and implications for future community care. *British Medical Journal*, 297, 819-822.

Davison, G. & Neale, J. (1998). *Abnormal Psychology*. New York: Wiley & Sons.

Dunn, G. (1989). *Design and analysis of reliability studies*. Oxford University Press: New York.

Eaton, W. W., Romananoski, A., Anthony, J. C. and Nestadt G. (1991). Screening for psychosis on the general population with a self-report interview. *Journal of Nervous and Mental Disease*, 179, 689-693.

Erkwoh R, Willmes K, Eming-Erdmann A, Kunert HJ (2002) Command hallucinations: Who obeys and who resists them? *Psychopathology*. 35, 272-279.

Falloon, I., Talbot, R. E., (1981). Persistent auditory hallucinations: coping mechanisms and implications for management. *Psychological Medicine*, 11, 329-339.

Farmer A.E., McGuffin P., (1988). The pathogenesis and management of schizophrenia. *Drugs*, 35(2):177-85.

- Field, H., Waldfogel, S., (1995). Severe Ocular Self-Injury. *General Hospital Psychiatry*, 17, 224-227.
- Foa, E. B., (1995). *Posttraumatic Stress Diagnostic Scale*. Minneapolis, MN: National Computer Systems.
- Fowler, D., Garety, P., and Kuipers, E. (1995). *Cognitive Behaviour Therapy for Psychosis: Theory and Practice*. Wiley: Chichester.
- Fox, J., Gray, N., Lewis, H., (2004). Factors determining compliance with command hallucinations with violent content: The role of social rank, perceived power of the voice and voice malevolence. *Journal of Forensic Psychiatry and Psychology*, 15(3), 511-531.
- Freedman, J.L., Wallington, S.A., Bless, E., (1967). Compliance without pressure: The effect of guilt. *Journal of Personality and Social Psychology*, 11, 232-239.
- Frith, C. (1979). Consciousness, information processing and schizophrenia. *British Journal of Psychiatry*, 134, 225-235.
- Frith, C. (1992). *The Cognitive Neuropsychology of Schizophrenia*. Hove: Lawrence Erlbaum Associates.
- Garety, P. A., Hemsley, D. R. (1987). Characteristics of delusional experience. *European Archives of Psychiatry and Neurological Science*, 236, 294-298.
- Garety, P. A., Kuipers, E., Fowler, D., Freeman, D., Bebbington, P. E., (2001). A cognitive model of the positive symptoms of psychosis. *Psychological Medicine* 31, 189-195.

Garety, P.A., Bebbington, P., Fowler, D., Freeman, D., Kuipers, E. (2007). Implications for neurobiological research of cognitive models of psychosis: a theoretical paper. *Psychological Medicine*, 37, 1377-1391.

Gilbert, P. (1989). *Human Nature and Suffering*. Hove, Sussex: Erlbaum.

Good, M. (1997). Lethal Interaction of Clozapine and Busprione? *American Journal of Psychiatry*, 154, 1472.

Goodwin, D.W., Alderson, P., Rosenthal, R., (1971). Clinical significance of hallucinations in psychiatric disorders. *Archives of General Psychiatry*, 24, 76-80.

Gray, N. S., McGleish, A., MacCulloch, M. J., Hill, C., Timmons, D. and Snowden, R. J. (2003). Prediction of violence and self-harm in mentally disordered offenders: A prospective study of the efficacy of HCR-20, PCL-R, and psychiatric symptomatology. *Journal of Consulting and Clinical Psychology*, 71, 3, 443-451.

Gray, N.S., Snowden, R., MacCulloch, S., Phillips, H., Taylor, J., & MacCulloch, M. (2004). Relative efficacy of criminological, clinical, and personality measures of future risk of offending in mentally disordered offenders: A comparative study of HCR-20, PCL:SV, and OGRS. *Journal of Consulting and Clinical Psychology*, 72, 3, 523-530.

Gudjonsson, G. (1989). Compliance in an interrogation situation: A new scale. *Personality and Individual Differences*, 5, 53-58.

- Gudjonsson, G., (1997a). *The Gudjonsson Suggestibility Scales Manual*. Hove, UK: Psychology Press.
- Haddock, G., MaCarron, J., Tarrier, N., Faragher, E. (1999). Scales to measure dimensions of hallucinations and delusions: the psychotic symptoms rating scales (PSYRATS). *Psychological Medicine*, 29, 879-889.
- Hall, D.C., Lawson, B.Z., Wilson, L.G. (1981). Command hallucinations and self amputation of the penis and hand during a first psychotic breakdown. *Journal of Clinical Psychiatry*, 42: 322-324.
- Harkavy-Friedman, J.M., Kimhy, D., Nelson, E.A., Venarde, D.E., Malaspina, D., Mann, J. (2003). Suicide attempts in schizophrenia: the role of command auditory hallucinations for suicide. *Journal of Clinical Psychiatry*, 64, 871-874.
- Hellerstein, D., Frosch, W., Koenigsberg, H.W. (1987). The clinical significance of command hallucinations. *American Journal of Psychiatry*, 144 (2), 219-221.
- Hersh, K., Borum, R. (1998). Command hallucinations, compliance and risk assessment. *Journal of American Academy of Psychiatry and the Law*, 26 (3), 353-359.
- Holmes, D., Tinnin, L.W., (1995). The problem of auditory hallucinations in combat PTSD. *Traumatology*.
- Honig, A., Romme, M., Ensink, B.J., Escher, S., Pennings, M. Devries, M.W., (1998). Auditory hallucinations: A comparison between patients and nonpatients. *Journal of Nervous and Mental Disease*, 186, 646-651.

- Horowitz, M., Wilner, N., and Alvarez, W. (1979). Impact of Event Scale: A measure of subjective distress. *Psychosomatic Medicine*, 41, 209-218.
- Huckle, P., Jones, G. (1993). Mentally ill sex offenders. *British Journal of Psychiatry*, 162, 568.
- Jackson, M.C., and Fulford, K. W. M., (1997). Spiritual experience and psychopathology. *Philosophy, Psychiatry and Psychology*, 1, 41-65.
- Johns, L.C., Nazroo, J.Y., Bebbington, P., Kuipers, E. (2002). Occurrence of hallucinatory experiences in a community sample and ethnic minorities. *British Journal of Psychiatry*, 180, 174-178.
- Johnstone, E. C., Crow, T. J., Johnson, A. L., Macmillan, J. F., (1986). The Northwick Park study of first episodes of schizophrenia: I. Presentation of the illness and problems relating to admission. *British Journal of Psychiatry*, 148, 115-120.
- Jones, G., Huckle, P., Tanaghow, A. (1992). Command hallucinations, schizophrenia and sexual assaults. *Irish Journal of Psychological Medicine*, 9, 47-49.
- Joyal, C., Putkonen, A., Paavola, P., Tiihonen, J. (2004). Characteristics and circumstances of homicidal acts committed by offenders with schizophrenia. *Psychological Medicine*, 34, 433-442.
- Junginger, J. (1990). Predicting compliance with command hallucinations. *American Journal of Psychiatry*, 147, 245-247.

Junginger, J. (1995). Command hallucinations and the prediction of dangerousness. *Psychiatric Services*, 46 (9), 911–914.

Junginger, J. (1996). Psychosis and violence: the case for content analysis of psychotic experience. *Schizophrenia Bulletin*, 22, 91-103.

Kaplan, H.I., B.J. Sadock, (1988). *Synopsis of Psychiatry: behavioural sciences, clinical psychiatry*. 5th edition. Baltimore: Williams and Wilkins.

Karp J.G., Whitman, L., Convit A. (1991). Intentional ingestion of foreign objects by male prison inmates. *Hospital and Community Psychiatry* 42, 533-535.

Kasper, M. E., Rogers, R., Adams, P. A. (1996). Dangerousness and command hallucinations: An investigation of psychotic inpatients. *Bulletin of the American Academy of Psychiatry and the Law*, 24 (2), 219–224.

Kay, S.R., Opler, L.A. (1987). The positive and negative syndrome scale (PANSS) for schizophrenia. *Schizophrenia Bulletin*, 13, 507-518.

Kennedy, H.; Kemp, L., Dyer, D. (1992). Fear and anger in delusional (paranoid) disorder: The association with violence. *British Journal of Psychiatry*, 160:488-192, 1992.

Kingdon, D. G., and Turkington, D. (1994). *The Cognitive Behavioural Therapy of Schizophrenia*. Lawrence Erlbaum: Hove.

Kolb, L.C., Brodie, K.H., (1982). *Modern Clinical Psychiatry* (10th Edition). Philadelphia: W.B. Saunders.

Kraepelin, E. (1913). *Psychiatrie, ein lehrbuch fur Studierende und Artzt.* [Psychiatry, a text book for students and practitioners] Vol 3. Leipzig: Barth.

Krakowski, M., Czobor, P. (1994). Clinical symptoms, neurological impairment, and prediction of violence in psychiatric inpatients. *Hospital and Community Psychiatry*, 45:700-705.

Krakowski, M.; Jaeger, J.; and Volavka, J. (1988) Violence and psychopathology: A longitudinal study. *Comprehensive Psychiatry*, 29:174-181.

Laing, R. D., (1965). *The Divided Self.* London: Pelican.

Lee, T., Chong, S., A., Chan, Y.H., Sathyadevan, G., (2004). Command hallucinations among Asian patients with schizophrenia. *Canadian Journal of Psychiatry*, 49, 838-842.

Leuch, S., Kane, J.M., Kissling, W., Hamman, J., Etschel, E., Engel, R. (2005). Clinical Implications of Brief Psychiatric Rating Scale scores. *British Journal of Psychiatry*, 187, 366-371.

Leudar, I., and Thomas, P. (2000). *Voices of Reason, Voices of Insanity: Studies of Verbal Hallucinations.* Routledge: London.

Maury, A. (1855). Les Mystiques extatiques et les stigmatises. *Annales Medico-Psychologiques, Third Series, 1*, 157-176.

McNeil, D., Binder, R., Greenfield, T., (1988). Predictors of violence in civilly committed acute psychiatric patients. *American Journal of Psychiatry*, 145(8), 965-70.

- McNeil, D., Eisner, J., Binder, R., (2000). The relationship between command hallucinations and violence. *Psychiatric Services*, 51 (10), 1288-1292.
- Miller, L.J., O'Connor, E., DiPasquale, T. (1993). Patients' attitudes towards hallucinations. *American Journal of Psychiatry*, 150, 584-588.
- Monahan, J. Mental disorder and violent behavior: Perceptions and evidence. *American Psychologist*, 47:511-521, 1992.
- Morrison, A. (2001). The interpretation of intrusions in psychosis: An integrative cognitive approach to hallucinations and delusions. *Behavioural and Cognitive Psychotherapy*, 29, 257-276.
- Morrison, A., and Haddock, G., (1997). Cognitive factors in source monitoring and auditory hallucinations. *Psychological Medicine*, 27, 669-679.
- Nuechterlein, K. H., and Dawson, M. E., (1984). A heuristic vulnerability-stress model of schizophrenic episodes. *Schizophrenia Bulletin*, 10, 300-312.
- People who hear "voices". *Applied Cognitive Psychology*, 6, 379-387.
- Posey, T.B., and Losch, M. E., (1983). Auditory hallucinations of hearing voices in 375 normal subjects. *Imagination, Cognition and Personality*, 3, 99-113.
- Read, J, & Fraser, A. (1998a). Abuse histories of psychiatric inpatients: To ask or not to ask? *Psychiatric Services*, 49, 355-359.

Read, J., Agar, K., Argyle, N., Volkmar, A., (2003). Sexual and physical abuse during childhood and adulthood as predictors of hallucinations, delusions and thought disorder. *Psychology and Psychotherapy: Theory, Research, Practice*, 76, 1-23.

Roberts, J. (1979). *Seth Speaks: The eternal validity of the soul*. Englewood Cliffs, NJ: Prentice Hall.

Rogers, R., Gillis, J. R., Turner, R. E., Frise-Smith, T. (1990). The clinical presentation of command hallucinations in a forensic population. *American Journal of Psychiatry*, 147, 1304–1307.

Rogers, R., Nussbaum, D., & Gillis, R. (1988). Command hallucinations and criminality. *Bulletin of the American Academy of Psychiatry and the Law*, 16, 251–258.

Rogers, P., Watt, A., Gray, N.S., MacCulloch, M., Gournay, K., (2002). Content of command hallucinations predicts self-harm but not violence in a medium secure unit. *Journal of Forensic Psychiatry*. 13: 251–262.

Romme, M. A. J., & Escher, A. (1989). 'Hearing Voices', *Schizophrenia Bulletin*, 15 (2), 209-216.

Romme, M. A., Honig, A., Noorthoorn, E.O., Escher, A. D., (1992). Coping with voices: An emancipatory approach. *British Journal of Psychiatry*, 161, 99-103.

Rowan A.B., Malone R.P. 1997. Tics with risperidone withdrawal. *Journal of the American Academy of Child and Adolescent Psychiatry*. 36: 162-163.

- Rudnick, A. (1999). Relation between command hallucinations and dangerous behaviour. *Journal of American Academy of Psychiatry and the Law*, 27(2), 253–258.
- Sanderson, A. (1997). Spirit releasement in practice. Unpublished transcript of talk at a Scientific and Medical Network AGM.
- Schneider, K. (1957). Primare and sekundare symptomen bei schizophrenie. *Forschritte der Neurologie Psychiatrie* 25, 487.
- Schneider, K. (1957). Primare and sekundare symptomen bie schizophrenie. *Forschritte der Neurologie Psychiatrie*, 25, 487.
- Shawyer, F., Mackinnon, A., Farhall, J., Sims, E., Blaney, S., Yardley, P., Daly M., Mullen, P., Copolov, D., (2008). Acting on Harmful Command Hallucinations in Psychotic Disorders: An Integrative Approach. *Journal of Nervous and Mental Disease*, 196, 390–398.
- Shawyer, F., Mackinnon, A., Farhall, J., Trauer, T., Copolov, D. (2003) Command hallucinations and violence: Implications for detention and treatment. *Psychiatry Psychology and Law*. 10: 97–107.
- Sidgewick, H., Johnson, A., Myers, F. W. H. et al (1984). Report of the census of hallucinations. *Proceedings of the Society for Psychical Research*, 26, 259-394.
- Slade, P. D. (1974). The external control of auditory hallucinations: an information theory analysis. *British Journal of Social and Clinical Psychology*, 13, 73-39.

Slade, P.D., and Bentall, R. P., (1988). *Sensory Deception: Towards a Scientific Analysis of Hallucinations*. London: Croom Helm.

Smith, A.D. & Taylor, P.J. (1999) Serious sex offending against women by men with schizophrenia. Relationship of illness and psychotic symptoms to offending. *British Journal of Psychiatry*, 174: 233-237.

Soppitt, R.W., Birchwood, M., (1997). Depression, beliefs, voice content and topography: A cross-sectional study of schizophrenic patients with auditory verbal hallucinations. *Journal of Mental Health*, 6, 525-532.

Swanson, J., Borum, R., Swatz, M., (1996). Psychotic Symptoms and disorders and risk of violent behaviour in the community. *Criminal Behaviour and Mental Health*, 6, 309 – 329.

Taylor, P. J. (1998). When symptoms of psychosis drive serious violence. *Social Psychiatry and Psychiatric Epidemiology*, 33: S47-S54.

Taylor, P. J., Garety, P., Buchanan, A. (1994). Maudsley assessment of delusions schedule. In: Monahan J, Steadman HJ, editors. *Violence and mental disorder: developments in risk assessment*. Chicago (IL): University of Chicago Press pp 161– 182

Thompson, J.S., Stuart, C.L., Holden, C.E., (1992). Command hallucinations and legal insanity. *Forensic Reports*, 5, 29-43.

Tien, A. (1991). Distributions of hallucinations in the population. *Social Psychiatry and Psychiatric Epidemiology*, 26, 287-292.

Trower, P., Birchwood, M., Meaden, A., Byrne, S., Nelson, A., Ross, K. (2004). Cognitive therapy for command hallucinations: randomised controlled trial. *British Journal of Psychiatry*, 184, 312-320.

Van Os, J., Hanssen, M., Bijl, R.V., Ravelli, A., (2000). Strauss (1969) revisited: a psychosis continuum in the general population? *Schizophrenia Research*, 45, 11-20.

Velligan, D., Prihoda, T., Dennehy, E., Biggs, M., Shores-Wilson, K., Crismon, M.L., Rush, A.J., Miller, J., Suppes, T., Trivedi, M., Kashner, T.M., Witte, B., Toprac, M., Carmody, T., Chiles, J., Shon, S., (1995). Brief Psychiatric Rating Scale Expanded Version: How do new items affect factor structure? *Psychiatry Research*, 135, 217-228.

Ventura, J., Lukoff, D., Nuechterlein, K.H., Liberman, R.P., Green, M.F., Shaner, A., (1993). Manual for the Expanded Brief Psychiatric Rating Scale. *International Journal of Methods in Psychiatric Research*, 3, 227-244.

Vidgen, A. M. (2001). Beliefs about voices and their relationship to depression, affect and self-esteem. Unpublished Doctoral Thesis.

Walsh, E., Buchanan, A & Fahy, TR. (2002a). Violence and schizophrenia: examining the evidence. *British Journal of Psychiatry*, 180: 490-495

World Health Organisation. ICD-10 Classification of Mental and Behavioural Disorders. Clinical conditions and Diagnostic Guidelines. Geneva: WHO, 1992.

Zisook, S., Byrd, D., Kuck, J., & Jeste, D. V. (1995). Command hallucinations in outpatients with schizophrenia. *Journal of Clinical Psychiatry*, 56, 462-465.

Zubin, J., and Spring, B. (1977). Vulnerability: a new view of schizophrenia. *Journal of Abnormal Psychology*, 86, 103-126.

