A Systematic Review of Interactive Digital Interventions for Voices & A Grounded Theory Exploration of How Voice-hearers Relate to their Voices Socially: A Mentalisation Theory Perspective

Laura Juliette Williams

Doctorate in Clinical Psychology

The University of Edinburgh

May 2024

Acknowledgements:

Thank you very much to my participants for your time and openness. I really enjoyed hearing about your voices and your experiences, and am grateful for your insights. To the clinicians that supported my recruitment, I was touched by your willingness to help.

I am extremely grateful to my supervisor, Dr Helen Griffiths, for expertly guiding my thinking, keeping me on track and for your vast amounts of patience over the past 2.5 years. I would also like to thank Dr Audrey Millar for your support, reassurance, and for being my Scottish Language expert. Thank you also to Rowena Stewart for your expertise and generosity with your time.

Thanks to my friends, old and new, for walking alongside me on this path in different ways - I am so grateful for all of you. Thank you for sending me memes and pictures to make me laugh, being there when this was hard, and helping me to maintain *some* work-life balance. Big thanks to Leona, for giving up your time to be my second reviewer, and for all your support.

A huge thank you to Ross, for being my rock and letting me make the DClin my priority, you have always been holding me up so I could achieve this dream. Also, thanks for always telling me that I could do this, spending hours sharing words of wisdom and for doing everything in your power to help me get here (including reminding me to use apostrophes about 20 times when proofreading).

I would like to thank my parents for being a constant unwavering supportive presence on my journey to this point. You have always believed that I could do whatever I wanted to do or be whomever I wanted to be, and you have done whatever you could to shine a light on this uncertain path. I could not have done this without you. Thank you for *everything*.

Table of Contents

Lay Summary

Auditory Hallucinations, also referred to as hearing voices, is a common symptom for people that receive a diagnosis of psychosis, but can also be experienced with other diagnoses and in the general population too. According to Mind, psychosis is when you see or interpret reality in a different way to those around you. For people who hear voices, this is hearing a voice that others do not also hear. How people interpret their voices and the beliefs that they hold about them can impact how much distress, anxiety or depression they cause. People's voices can feel very real, and the relationships voice-hearers have with them can also be very real to them. The treatments for hearing voices are constantly developing, cognitive behavioural therapy for psychosis has been one such effective treatment. Recently, there has been greater focus on developing treatments that focus on the voice-hearer talking with the voice to change their relationship with it.

The first paper in this portfolio is a review of previously published studies that look at interactive digital interventions for people that hear voices. The review aimed to summarise the characteristics, types of digital intervention and clinical outcomes of these treatments. 18 papers were found in the search. The types of intervention found in the review were: computerised treatments; app-based treatments; and avatar therapies (which involves a computerised or virtual reality image of the voice being made).

The review also looked at the effect size of the treatments, which is a measure of how meaningful the difference is between the treatment group, and the group that did not receive the treatment (otherwise known as the control group). Some studies measured outcomes for the same group of people before and after the treatment, so the effect size measures how big this change is. Studies that include a control group, and randomly allocate participants to this or the treatment group are known as 'Randomised Controlled Trials' (RCTs). These give as a better idea of how effective a treatment is, so the results of these are more meaningful.

The paper found that avatar therapies had the most evidence of effectiveness, followed by app-based interventions. There was not much high-quality evidence for computerised interventions. This suggests that avatar therapies may be a promising treatment for hearing voices, but more research is needed into all types of digital intervention for firmer conclusions to be made.

The second study is a qualitative exploration of how people relate to their voices socially. This involved interviewing people that currently hear voices about these experiences. The voice-hearers were also interviewed about their early relationships with their parents, using an established pre-determined set of interview questions (called the Adult Attachment Interview), to develop an understanding of how people reflect on this. This was to measure people's capacity for mentalising, which is a term that describes people's ability to understand their own and other's thoughts, emotions and intentions. Participants were also interviewed using an established interview measure about their general experiences of voice hearing, such as how often they hear them and how distressing they are.

The study found that people relate to their voices just as they relate to real people, and that they do this by trying to understand their voices through the processes of establishing the voice's identity and intentions, as well as comparing their experience of the voice to other social experiences. Participants tried to understand their voices' characterisation (voices having distinct characters and identities); they tried to make sense of their voices' ability to change things in the world around them; and their voices' emotions. They also made comparisons between: how their voices changed in time and location; their own goals and their voice's goals; the relationships between different voices they hear as well as how their voices treat other humans; and their voices and people in their external social world. People's capacity for mentalising and how they understood their relationship with their voices was also explored. The study concludes that people make attempts to understand their voices through understanding: who the voice is; what it wants; how it feels and how similar or different it is to their other experiences. Mostly, people seem to be able to mentalise their voices' emotions and intentions, even if reflecting on their early relationships is difficult for them.

Thesis Portfolio Abstract

Background

Auditory Hallucinations (AHs) or 'hearing voices' can be linked to high levels of distress, depression and anxiety (Chadwick & Birchwood, 1994; Hartley et al., 2013). They are relatively common for people diagnosed with a schizophrenia spectrum disorder, with around 70% of individuals reporting them (Waters et al., 2012). Voices have largely been understood from a cognitive perspective, which suggests that the beliefs an individual holds about their voices, in terms of their power, purpose and identity impacts the distress they cause (Chadwick & Birchwood, 1994; Close & Garety, 1998).

Cognitive behavioural therapy for psychosis (CBTp) has been demonstrated to be effective in treating AHs (Van der Gaag et al., 2014). Recently, more psychological therapies aiming to address the relationship between hearer and voice have been developed. These therapies increasingly highlight the importance of psychological formulation that encompasses the voice identity, content and the voice-hearer's significant life events (Longden et al., 2021). This indicates the necessity of understanding factors that lead to more positive and negative voice relationships, including the consideration of how voice-hearers relate to their voices socially, and what aspects of the voice they consider important. However, there can be barriers to accessing face to face treatments, and online therapies have been suggested as a way of addressing this.

Purpose

The systematic review aimed to systematically synthesise the characteristics, modes of delivery and clinical outcomes of interactive digital interventions for AHs. The grounded theory empirical study explored how voice-hearers relate to their voices as social agents, from a mentalisation theory perspective.

Methods

For the empirical study, seven voice-hearers were interviewed about their relationship with their voices, as well as their early attachment relationships using the Adult Attachment Interview (AAI; George et al., 1996). The transcribed interviews were coded according to grounded theory processes concurrently with recruitment and interviewing. Additionally, the AAI was coded for reflective functioning scores using the Reflective Functioning Scale coding manual (Fonagy et al., 1998). Voice-hearing severity and distress was also evaluated using the Psychotic Symptom Rating Scale (PSYRATS; Haddock et al., 1999).

The systematic review involved searching four databases systematically for peer-reviewed journals, and empirical studies of interactive digital interventions for AHs were extracted. Effect

sizes on clinical outcomes were reported and a meta-analysis was completed for avatar therapies featuring an active control.

Results

The systematic review included 18 studies involving 1730 participants. Overall, evidence appeared to be strongest for avatar therapies, with six RCTs reporting improvements in voice-hearing distress with large effect sizes. App-based RCTs that included an ecological momentary assessment (EMA) component also demonstrated some positive improvements in voice-hearing distress. There was limited evidence supporting the use of computerised interventions for AHs.

The theory developed from the grounded theory exploration was that voice-hearers relate to their characterised voices as they would 'real' people. The core process through which they do this was by *Trying to Understand* the voice, with two categories influencing the core processes: *1) Ascribing Agency* and *2) Making Comparisons.* Seven subcategories were also constructed: *1) Evidence of Realness 2) Characterisation 3) Affective Experience 4) Changing over time and place 5) Social Comparison 6) Goal Congruency 7) External Relationships.* These factors related to participants' overall understanding of their voice and the valence of their relationship.

Discussion

Overall, this portfolio confirms the importance of incorporating an understanding of how people relate to their voices into clinical practice. The encouraging results of avatar therapies suggest that digital interventions that consider the relationship with the voice are proving promising. Further high-quality research into digital interventions for AHs are required before they become established, including safety considerations.

Voice-hearers appear to develop their understanding of their voices by ascribing an identity to them, and develop very real relationships with them. This in many ways mirrors our external social relationships, including that voice-hearers develop an understanding of their voices' mental states. Further exploration into links between mentalisation and hearing voices would be merited.

A Systematic Review of Interactive Digital Interventions for Auditory Hallucinations

Williams, L.J.[ab]*, Wolters, L.[c.] and Griffiths, H.[a]

[a] *School of Health in Social Science, University of Edinburgh, Edinburgh, UK;* [b]*NHS Lothian;* [c] *Cambridgeshire and Peterborough NHS Foundation Trust*

Abstract

Introduction

Digital interventions have been suggested as a potential solution to the increase in demand for mental health interventions. Previous systematic reviews have explored the effectiveness of digital interventions for psychosis, but to date none have evaluated this for auditory hallucinations (AHs). This review aimed to systematically synthesise the characteristics, modes of delivery and clinical outcomes presented in the extracted studies.

Method

Four databases were systematically searched for peer-reviewed journals. This review included empirical studies of individuals experiencing AHs with any mental health diagnosis involving digital interventions that aim to reduce psychological distress related to AHs and require the user's active involvement, including RCT and pre-post experimental designs.

Studies were assessed using a quality assessment tool for quantitative studies (Thomas et al., 2004). Effect sizes on clinical outcomes were reported and a meta-analysis was completed for avatar therapies featuring an active control.

Results

18 studies involving 1730 participants were included in the review. Overall, evidence appeared to be strongest for avatar therapies, with six RCTs reporting improvements in voice-hearing distress with large effect sizes and the meta-analysis demonstrating a small significant effect in favour of avatar therapy
(-0.39). App-based RCTs that included an ecological momentary assessment (EMA) component also demonstrated some positive improvements in voice-hearing distress. The evidence supporting computerised interventions for AHs was limited, while improvements in voice-hearing have been reported, there are at present no studies providing strong evidence.

Discussion

The effectiveness of interaction digital interventions for AH remains yet to be established, although avatar therapy interventions hold promise.

Keywords: Auditory hallucinations, digital interventions, apps, avatar therapy, online, systematic review

Introduction

Auditory hallucinations (AHs), or hearing voices, are reported by an estimated 70% of individuals diagnosed with a schizophrenia spectrum disorder (Waters et al., 2012), and are also common in other conditions (Sommer et al., 2012) and the general population (Beavan et al., 2011). They are associated with high levels of distress, depression and anxiety (Chadwick & Birchwood, 1994; Hartley et al., 2013). AHs may remain resistant to treatment with antipsychotics, which are the main line of treatment for psychosis (Kane, 1996), and moreover, there are concerns over the long-term effects of their use (Murray et al., 2016). Cognitive behavioural therapy for psychosis (CBTp) for auditory hallucinations has been demonstrated to be effective with moderate effect sizes (Van der Gaag et al., 2014). However, CBTp requires a lengthy number of sessions, as well as time to train practitioners, which can result in a considerable barrier to access (Haddock et al., 2014). Additional barriers to evidence-based psychological support include geographical constraints and costs of transportation and the stigma associated with seeking mental health treatment (Corrigan, 2004; Dockery et al., 2015).

The high prevalence of mental health difficulties has been widely recognised, and in 2019 an estimated 970 million people were living with mental difficulties or around 25% of the population (Global Burden of Disease Study, 2019). Digital interventions have the potential to support services to cope with this demand and increase access to mental health care (Ebert et al., 2018). They include interventions delivered via digital technologies, such as smartphones, website and online therapies. These have been applied to many mental health problems, including anxiety, pain, trauma, bipolar disorder and psychosis (Philippe et al., 2022). Digital interventions have been suggested by governments around the world as central to delivering an equitable healthcare system (Petersen, 2018) and the recent *Plan for Digital Health and Social Care* states that the long-term sustainability of health and social care will be formed on the basis of good digital foundations (Department of Health and Social Care, 2022). However, Rich et al. (2019) argue that such ambitions require thorough analysis and verification.

Systematic reviews have demonstrated that telehealth delivered by video or telephone is as effective as face to face treatment, both for individual therapy (Greenwood et al., 2022) and for group interventions (Rafieifar et al., 2024). However, in the latter review, none of the included studies targeted psychosis and Greenwood et al. (2022) also found no evidence for schizophrenia. A systematic review of smartphone apps for schizophrenia reported high levels of engagement from participants, however, the authors were unable to report on effectiveness, as four out of their five included studies did not include efficacy data (Firth & Torous, 2015). However, they noted that the existing studies demonstrated that people with schizophrenia are capable and willing to use smartphones to engage in app-based interventions and use them to monitor their symptoms, despite suggestions that symptoms of psychosis might limit feasibility for them. Similarly, Berry et al. (2016) investigated both the hypothetical and actual acceptability of online and mobile phone interventions for severe mental health problems in their systematic review of 49 studies. They concluded that such interventions demonstrated relatively high acceptability, as assessed by satisfaction ratings, module completion rates and intervention use. The review found that acceptability was generally higher in supported than unsupported interventions. The authors also highlighted the need for further research in this area.

As well as increasing access to psychological therapies, digital health interventions have the potential to optimise existing therapies. In recent years, there has been a focus on developing novel interventions that optimise existing treatment and so require fewer sessions and might enable more widespread access to treatment (Thomas et al., 2019). Studies have employed virtual reality (VR) to enhance assessment and intervention in mental health (Bell et al., 2020). VR has been effectively applied to the delivery of exposure-based treatments, and shows great promise in treating a range of mental health difficulties, as discussed in a large systematic review of 284 studies completed by Freeman et al. (2017). However, the authors did not consistently report statistical results and did not report on effectiveness specifically, and noted that there were large gaps in research at this time. For individuals with psychosis, VR has also been used to support social and cognitive skills training, as well as increase treatment motivation (Kip et al., 2019). In their systematic review of 50 studies, Rus-Calafell et al. (2018) found that VR is well-tolerated in participants experiencing psychosis, and that participants did not report distress related to the VR situations. They evaluated the use of VR in neurocognitive assessment, for treating social functioning difficulties, paranoia and hallucinations and rated the majority of their extracted papers as strong evidence. They suggest that while these therapies were in the early days of development, VR has potential in enabling clinicians to help people observe and change feelings, thoughts and behaviours as they happen, under controlled conditions. However, they note that the costs involved for VR systems is a major limitation. As the authors gave a very broad overview of effectiveness, it was difficult to compare effectiveness between studies.

Avatar therapies aim to optimise treatment for people that experience distressing voices (Leff et al., 2013). The process requires the voice-hearer to create an audio-visual representation of the voice they hear using computer software. A Cochrane review (Aali et al., 2020) of avatar therapies found some suggestions of positive effects from their included studies, but only included one completed trial, one preliminary study and one ongoing trial. They noted that many of the included studies had high risk of bias, which made it difficult to draw firm conclusions from the results.

Clarke et al. (2019) conducted a systematic review and meta-analysis exploring the effect of a range of digital health technologies on psychotic symptoms and suggested that at that time the evaluation of these interventions was just beginning, but considered the potential of web-based programmes, apps and avatar therapy. The authors noted the acceleration of digital health intervention studies occurring at the time the review was completed. While this review provided a broad overview of outcomes for interactive digital interventions for psychosis, it did not provide a specific focus on interventions for AHs, which made it difficult to compare these outcomes due to the heterogeneity of the included study targets.

The number of available interactive digital interventions is increasing rapidly, as is the available evidence to draw from. While previous systematic reviews have shown some promising results for digital interventions for psychosis, there have been recent developments since their completion, and there has not yet been a review of interventions that target auditory hallucinations. This is important as when the effectiveness of CBTp is reviewed by amalgamating different target symptoms rather than evaluating its effectiveness in targeting specific symptoms, this underestimates the effect (Peters, 2014). In order to provide effective treatments, it is essential to further develop and evaluate symptom specific interventions to understand what works and for whom.

Aims

While recent reviews have summarised the use of digital interventions for psychosis, we have not identified reviews that have specifically looked at the effects of Interactive digital interventions with the aim of reducing psychological distress related to hearing voices. Within this review, interactive digital interventions are defined as technology-assisted and therapeutic interventions that require the user's active involvement. Such interventions include:

- Internet or web-based therapies
- Avatar Therapy
- Virtual Reality therapy
- App-based interventions
- Remote talk therapies

This review therefore aims to review the available literature for interactive digital interventions for AHs; summarise the characteristics and modes of delivery; and report on the clinical outcomes of the various subtypes of digital intervention.

Methods

The presented systematic review was pre-registered on PROSPERO (CRD42023442745) prior to commencing the review process.

Search Strategy

A literature search was conducted via the OVID interface, and the following databases were searched for peer-reviewed journals: PsycINFO, EMBASE and MEDLINE. The *ProQuest Dissertation and Theses Global* database was also searched via the ASSIA and Sociological Abstracts interface. In addition, the reference lists of identified articles were searched manually, but no additional eligible studies were identified. No date or language restrictions were applied at this stage.

The following terms were included in the search:

P = "distressing voice*" or "auditory hallucin*" or "auditory verbal hallucin*" or AVH or "command hallucin*" or "voice* hear*" or "hearing voice*"

AND

I = "online intervention*" or "online CBT" or "online therap*" or "online intervention" or "digital therapies" or digital* or internet* or avatar or "Virtual reality" or VR or "web-based" or ehealth or mhealth or telemedicine or telehealth or "e health" or "m health" or "tele medicine" or "tele health" or smartphone* or phone* or mobile or computer* or cellphone* or app or apps or teleconferenc* or videoconferenc*

Eligibility Criteria

Papers were included if they met the following criteria:

1) Empirical studies that recruited individuals experiencing voice-hearing with any mental health diagnosis, and are over 16 years of age.
2) Studies that involved the use of digital interventions that require the user's active involvement with the aim of reducing psychological distress related to hearing voices. This includes:
    - Internet or web-based therapies
    - Avatar Therapy
    - Virtual Reality therapy
    - App-based interventions
    - Remote talk therapies
3) Studies that included primary or secondary outcomes that measure psychological change in the impact of voice-hearing (e.g. distress, disruption, frequency), functioning, anxiety or cognitive functioning as assessed by a difference in scores on the outcome measures.
4) Papers utilising the following quantitative study designs: pre-post (quasi-) experimental designs and Randomised Controlled Trials (RCTs).

Papers were excluded for the following reasons:

1) The main intervention involved a passive digital medical intervention, such as repetitive transcranial stimulation (rTMS) . This involves placing an electromagnetic coil against the scalp to stimulate different areas of the brain, and does not require active user engagement.
2) The intervention was aimed at the individual's carers or family members, rather than the voice-hearer.
3) The intervention was aimed at clinicians.

4) The paper was not in English.

Screening, data extraction and meta-analysis

Search results were exported to Covidence (Veritas Health Innovation, 2024), which supported exclusion of duplicates. All titles and abstracts were screened by the first reviewer (LWi). Extracted papers were assigned random numbers on Microsoft Excel and sorted from high to low by random number, then the top 20% of these were taken out and screened by the second reviewer (LWo). Any disagreements were then discussed and a final decision reached. Where there was difficulty accessing a paper, the University librarian was contacted for support in accessing it.

The next stage of screening was then commenced, with LWi screening all the full texts, and LWo screening a further randomly selected 20% of these. Agreement between reviewers was calculated using Cohen's kappa (κ) (Cohen, 1960). Cohen's κ results can be interpreted as: ≤ 0 indicating no agreement; 0.01-0.20 as none to slight, 0.21-0.40 as fair agreement; 0.41 as moderate; 0.61-0.80 as substantial and 0.81-1.00 as almost perfect agreement.

Characteristic and outcomes were then extracted from the identified papers by LWi, including type of intervention, primary and secondary outcome measures used, diagnoses, participant details and study results (including effect sizes). Sample characteristics are outlined in table 1. Where effect sizes were not reported in the paper, these were calculated by the first reviewer. Unless a different statistic was stated in the paper, effect size was reported and calculated using Cohen's d (Cohen, 1988). Cohen's d is the defined as the difference between means, divided by the standard deviation of either group. For between-subject trials, this was calculated post-intervention, while for repeated measures methodologies, this was the difference between pre- and post-test. Due to limitations in the data available in some of the extracted papers, and therefore an inability to calculate correlations between measures (Lakens, 2013), the within-subjects Cohen's d was calculated as:

$$Cohen's\ d_{av} = \frac{M_{diff}}{((SD1 + SD2)/2)}$$

The classifications for Cohen's d are as follows: small (d = 0.2), medium (d =0.5) and large (d ≥ 0.8).

Where the studies were sufficiently homogeneous, a meta-analysis was completed using Review Manager 5 (Revman) software. The standardized mean difference was calculated using post-intervention means and standard deviations (SDs) (Higgins et al., 2019). A random effects model was used to account for the variance between studies (Dettori et al., 2022).

Quality Assessment

Risk of bias was assessed for these papers using the Quality Assessment Tool for Quantitative Studies developed by the Effective Public Health Practice Project (EPHPP) (Thomas et al., 2004). This assessment tool can be used for a variety of study designs including randomized controlled trials and cohort studies, which made it a suitable tool for this review. The tool evaluates risk of bias over the following eight domains: 1) selection bias, 2) study design, 3) confounders, 4) blinding, 5) data collection methods, 6) withdrawal and drop-outs, 7) intervention integrity, and 8) analyses. Each domain is rated as ‘strong’, ‘moderate’ or ‘weak’ for each of the eight domains based on descriptions of what criteria might achieve each rating for each of the domains. These component ratings are then considered to produce an overall rating of ‘strong’, ‘moderate’ or ‘weak’ for each of the studies. Final ratings are assigned as follows: no ‘weak’ ratings across any domain provides a ‘strong’ global rating; one ‘weak’ rating under any domain provides a ‘moderate’ global rating; and two or more ‘weak’ domain ratings provides a globally ‘weak’ rating. The tool has been demonstrated to have good content and construct validity, as well as inter-rater reliability, and was chosen because it can be used to assess the quality on various study types. Initial quality assessments were completed by LWi and LWo then independently assessed the quality of a randomised 20% of the papers. Both reviewers met to discuss the results and resolve any disagreements.

Results

Database searches resulted in 1741 studies imported for screening (*see fig 1)*, with 1437 articles remaining after duplicates were removed. 1370 papers were removed following title and abstract screening with good agreement between reviewers (k = 0.79). Finally, following full-text screening 18 studies remained, agreement between reviewers was excellent (k = 0.84).

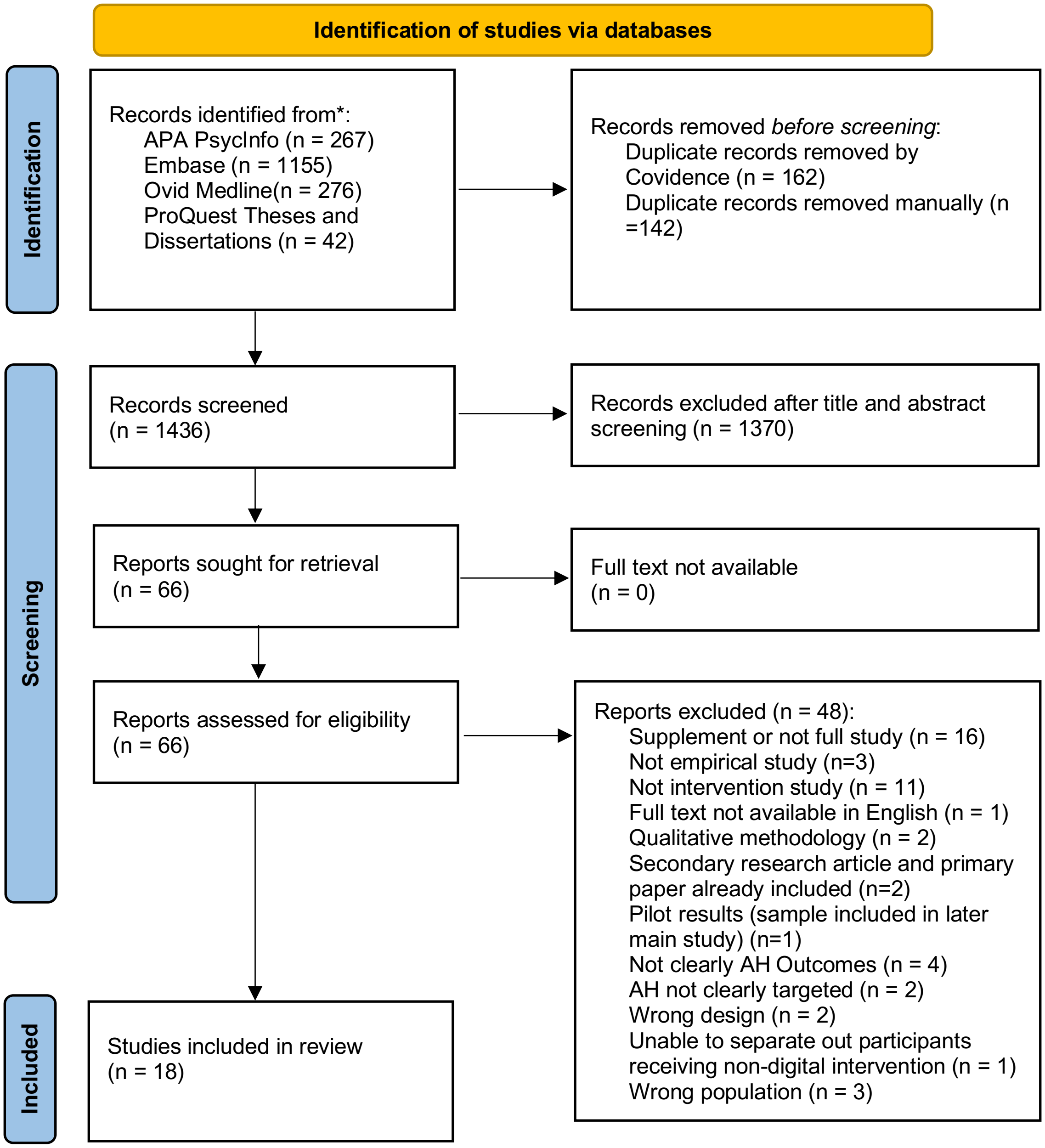


Figure 1. Flow diagram of study identification and inclusion.

Summary of Sample

The identified studies included a total of 1730 participants, with a mean of 91 participants (SD = 239.81) although, notably, one smartphone app intervention included 1048 participants (Jongeneel et al., 2022), which has inflated the total. Fourteen of the included studies reported participant diagnoses on the schizophrenia or psychosis spectrum; one reported presence of

AHs and at-risk mental state without specifying a diagnosis (Dodgson et al., 2021); two studies reported their participants met criteria for hearing voices (Jongeneel et al., 2022; Leff et al., 2013) and one study reported PTSD and bipolar disorder diagnoses as well as psychosis (Buck et al., 2022); one study did not specify the diagnosis of their participants (Bucci et al., 2018).

Table 1 summarises the main characteristics and outcomes of the included papers. Of the 18 studies included, 11 were described as RCTs; five were cohort (one-group pre-post) studies and two were quasi-experimental. In the inactive controlled studies comparison groups were described as treatment as usual (TAU) or usual care in two of the studies; TAU/delayed therapy in two studies and waitlist control or ‘no intervention’ in three studies. In the active control groups two were compared to CBT; one compared to supportive counselling and one compared to an alternative app.

The most commonly used outcome measure for voice-hearing symptomatology was the PSYRATS-AH (Haddock et al., 1999) that was used in 13 of the included studies. Six studies used the BAVQ-R as a primary or secondary outcome measure (Chadwick et al., 2000), to assess constructs around omnipotence and malevolence that can determine response to voices.

AUTHORS AND YEAR	TYPE OF TECHNOLOGY (E.G. AVATAR, WEB-BASED CBT, VIRTUAL REALITY)	STUDY METHODS[a]	CONTROL[a] GROUP	PARTICIPANT (N) DEMOGRAPHICS (I.E. AGE, GENDER [% FEMALE]) BY ALLOCATION	PARTICIPANT DIAGNOSES	LENGTH OF TREATMENT	PRIMARY OUTCOMES[a]	SECONDARY OUTCOMES[a]	FINDINGS[a]	PRIMARY OUTCOME MEASURES EFFECT SIZE (COHEN'S d)
Bell et al. (2020b)	Smartphone app (SAVVy)	RCT	TAU	SAVVy + TAU: N = 17, 64.7% female, Age (M = 39.12) TAU: n = 17, 47.1% F , Age (M = 42.58)	Bipolar disorder w. psychotic feat, Major depression w. psychotic feat, Schizophrenia	EMA monitoring = 6 days followed by EMI phase 1 = 10 days, followed by EMI phase 2 = 10 days Total intervention = 20 days	PSYRATS-AH	DASS-21; SEPS; Coping with voices day to day & Awareness of patterns in voices VAS	Trend towards improvement in AH distress (PSYRATS-AH) scores with moderate effect size (F(1,31) = 3.00, p=0.09). This was after outlying data from participant experiencing difficult life events was removed. Small, non-significant effects favouring treatment group on subjective psychosis experience (SEPS) (F(1,31) = 0.55, p =.46), and small non-significant effects favouring the control group in depression and anxiety (DASS-21) (F(1,31) = 1.87, p =.18),	PSYRATS-AH Hedges g = 0.55 (medium)
Bucci et al. (2018)	Smartphone	RCT	Alternative app (Clintouch)	ACTISSIST: N = 24, 37.5% Female, Age at first symptoms (M= 20.21, SD = 7.37) ClinTouch: n =12, 75% Female, Age at first symptoms (M= 18.33, SD = 7)	(Not specifically reported) Psychosis	12 weeks	Feasibility	PANSS, PSYRATS, CDSS, GAF, PSP, ERS, EQ-5D-5L	ACTISSIST was feasible and there were improvements in key outcome measures e.g. Schizophrenia symptom severity (PANSS; negative, general and total scores) and depression (Calgary; mild, moderate and total) in the ACTISSIST group. PSYRATS-AH effect size was small in favour of actissist (d=0.21, CI = -0.59, 0.17)	PSYRATS-AH d= 0.21 (small) PANSS total d= −0.85 (large) CDSS total d= −0.65 (medium) GAF d= 0.07 (medium) PSP d= 0.47 (small) ERS d= 0.43 (small) EQ-5D-5L d= −6.38 (large)
Buck et al. (2022)	Smartphone	Cohort (Pre-post)	N/A	Total N = 17, 29% female, Age (M= 55.12) Sample reporting AH = 10.	Schizophrenia or psychotic disorder, bipolar disorder, major	1 month	Feasibility and acceptability	IMRS; QLES-Q; HPSVQ (only those reporting AH included in results);	Participants experienced small improvements in self-directed recovery (d=0.30), auditory hallucinations (d=0.23) and quality of life (d=0.25). However, analyses of significant change were underpowered to detect effects.	HPSVQ d = 0.23 (small) IMRS d =0.30 QLES-Q d = 0.25QLES-Q d = 0.25

					depressive disorder, PTSD			ISI; BDI-II; BMQ; GPTS		ISI d= 0.13 BDI-II d= 0.12 BMQ d= 0.10 GPTS d= 0.10
Craig et al. (2018)	Avatar	RCT	Supportive counselling	Avatar therapy: N = 75, 24% female, age =42.5 (SD=10.1) Supportive counselling: N=75, 40% female, age =42.9 (SD = 11)	Paranoid schizophrenia, schizoaffective disorder, bipolar disorder, unspecific psychosis, depression with psychotic symptoms	1-6 sessions	PSYRATS-AH	BAVQ, VAAS, VPDS	Reduction in AHs as measured by the PSYRATS-AH scores was significantly greater for AVATAR than for supported counselling at 12 weeks (estimated mean difference –3·82, SE 1·47, 95% CI –6·70 to –0·94; p=0·009; d=0·8). However, at 24 weeks the supported counselling group showed further improvements that meant there was no longer a significant difference between groups.	PSYRATS-AH d = 0.8 (large)
Dellazizzo et al. (2021)	Avatar	RCT	CBTp	VR N= 37, 21.6% female, age m=43.6 SD = 12 CBT, N = 37, 27% female, Age M =41.4 (SD = 13.4)	Schizophrenia, schizoaffective disorder	9 weekly sessions	PSYRATS-AH	BAVQ, BDI-II, PANSS, Q-LES-Q-SF	There was no statistically significant difference between VRT and CBTp for AHs as both treatment groups showed significant reductions in PSYRATS-AH scores (p <0.001 for VR, p = 0.001 for CBT). However VRT did achieve larger effects especially on overall AVH (d = 1.08 for VRT vs 0.555 for CBT). VRT also showed significant results on persecutory beliefs about voices and quality of life. Effects were maintained up to the 1-year follow-up.	PSYRATS-AH d =1.08 (large)
Dodgson et al. (2021)	Tablet	Cohort (pre-post)/mixed methods	N/A	N = 22, 13.6% female, Age M= 24.18 (SD = 4.52)	Not reported, met criteria for at-risk mental state with AVH	4-6 sessions	PSYRATS-AH	CAARMS, DASS, ICECAP-A, CHOICE	There was a significant difference between pre- and post scores for voice-hearing distress with a medium effect size (p=0.03, d=0.77). Outcomes on the measure of at risk mental state showed significant reductions from baseline, with largest effect sizes for auditory and visual hallucination severity ratings (d = 0.70–0.77).	PSYRATS-AH d=0.77 (medium)
Du Sert et al. (2018)	Avatar	Randomised partial cross-over trial	TAU/Delayed Therapy	Total sample reported: N =15, 33.3% female, Age M=42.9 (SD = 12.4)	Schizophrenia, schizoaffective disorder	7 weekly sessions	PSYRATS-AH, BAVQ-R, PANSS, BDI, QLESQ-SF	N/A	There was a reduction in AH symptoms (p<0.01) and voice-related distress as measured by PSYRATS scores (p<0.001) between baseline and posttreatment. There was also a reduction in general	PSYRATS-AH d = 1.2 (large)

									symptoms, depressive symptoms and quality of life. (p<0.05). Improvements were maintained at follow up	BAVQ d = 1.01 (large) PANSS d = 0.41 (medium) BDI d = 0.59 (medium) QLESQ-SF d = 0.56 (medium)
Ellett et al. (2022)	Online mindfulness group	Cohort (Pre-post)	N/A	N = 17, 35.3% female, Age N= 41.73 (SD = 12.52)	Schizophrenia spectrum disorder	12 group sessions	GAD-7, PHQ-9, BAVQ-R	Subjective assessment of therapeutic groups	Significant reductions in depression and anxiety pre- and post- therapy. On the BAVQ-R malevolence and omnipotence reduced significantly with large effect sizes (d=0.8 & d=0.7 respectively) and resistance emotion reduced significantly with a large effect size (d=0.6). There was no significant difference in resistance behaviour.	BAVQ resistance emotion =d 0.7. (medium) PHQ-9 & GAD7d= 0.8 (large)
Gottlieb et al. (2013)	Web-based CBT "Coping With Voices"	Cohort (Pre-post)	N/A	N = 17, 38% female, Age M = 40.10 (SD = 13.63)	Schizophrenia, schizoaffective disorder	10 modules completed at own pace	PSYRATS-AH	PSYRATS-D, BPRS, BAVQ-R, BDI-II	Statistically significant improvements on pre- and post- intervention on total AHs (p=0.007) and significant reductions in overall psychiatric symptoms on BPRS (p = .001). There were no significant changes in maladaptive beliefs related to voices on the BAVQ (p=.902).	PSYRATS-AH, d= 0.65 (medium)
Gottlieb et al. (2017)	Web-based CBT "Coping With Voices"	RCT	Usual care	Web-based CBT: N = 19, 52.6% female, age = (M =43.79, SD = 13.16) Usual care: N =18, 22.2% female, Age (m= 40.28, SD = 11.69)	Schizophrenia, schizoaffective disorder or psychosis not otherwise specified diagnosis	10 modules completed at own pace	BPRS, PSYRATS AH	SLOF; CBT knowledge; Paranoia Scale; BCIS; BAVQ; BDI-II; BAI	There were no differences between the coping with voices and usual care groups on the AH measures at follow-up. However participants in the coping with voices group showed greater increases in social functioning, and knowledge about CBTp.	PSYRATS-AH d= 0.17 (small) BPRS AH d= 0.09 (small)
Granholm et al. (2012)	Smartphone	Quasi-experimental	Noncompleters	Completers: N = 42, 31% female, Age M = 48.7 (SD = 9.1) Non-completers : N = 13 (gender not	Schizophrenia, schizoaffective disorder	12 weeks	Daily ambulatory monitoring (incl. questions about voice	PANSS, BDI-II, ILSS, ANART	There was a significant reduction in AHs as reported be the ambulatory monitoring. However, there were no differences in any of the secondary outcome measures reported from baseline to end of treatment. PANSS	Effect size calculation not possible for ambulatory monitoring.

				reported), Age - 48.9 (SD = 7.9)			hearing frequency)		hallucinations subscale had no significant change (p=0.967, d = 0.04).	PANSS, d = 0.04 (small) BDI-II d= -0.01 (small) ILSS d = 0.65 (medium)
Harper (2014)	Web-based CBT	Quasi-experimental	N/A	N = 23, 40% female, Age M = 40.9 (SD = 13.3)	Schizophrenia, schizoaffective disorder, major depressive disorder w/ psychotic symptoms	10 sessions	BPRS, PANSS & PSYRATS	BAVQ-R, social and community functioning	Significant reduction in the intensity of AHs (F(1, 21)= 6.436, p=.019) and reduction in total psychiatric symptoms as measured by PANSS scores (F(1,16)=5.801,p=.028). No significant differences in beliefs about voices (F(1, 21)=3.709, p=.068) or community and social functioning.	PSYRATS-AH, d= 0.6 (medium) BPRS, d = 0.86 (large) PANSS, d = 0.60 (medium)
Jongeneel (2022)	Smartphone	Cohort (pre-post)	N/A	N = 1, 048, 75.3% female, Age M = 35.34 (SD = 14.03)	No diagnosis reported, people who hear voices	Not reported	7-point Likert scales for voice distress and emotionality and vividness of voice memories		AH distress was significantly reduced after a 'silencing' session (p <.001, d = 0.49). Momentary emotionality of voice memories (p < .001, d = 0.74), and the vividness of memories (p < .001, d = 0.71), decreased significantly after Challenging sessions.	Silencing d = 0.49 (medium) Emotionality of voice memories d = 0.74 (medium) Vividness of memories d= 0.721 (medium)
Leff et al. (2013)	Avatar	RCT (crossover)	TAU/Delayed Therapy	Avatar therapy: N= 14 Delayed therapy: N = 12 Full sample n=26, female = 38.5%, age not reported	Not reported, met criteria for hearing persecutory voices for at least 6 months	6 sessions	PSYRATS-AH, BAVQ-R, CDS		There were significant improvement in AHs on PSYRATS-AH (p=0.003) and beliefs about voices (BAVQ) (p = 0.004), for the immediate avatar therapy group versus delayed therapy. There was also an improvement in the repeated measures delayed therapy group (PSYRATS total, P = 0.006 and BAVQ total, p = 0.014)	PSYRATS-AH d =0.8 (large) BAVQ (immediate therapy within-subjects) d = 0.71 (medium) CDS d = 0.51 (medium)

Liang et al. (2022)	Virtual reality based-based computer AT system (CATS) - Avatar	RCT	CBTp	CATS: N = 32, 56.25% female, age = 25.3 (SD = 5.3) CBT: N = 33, 48.48% female, age = 26.5 (SD = 6.8)	Schizophrenia	7-9 sessions	PSYRATS-AH, P300 amplitude	PSYRATS-D, BAVQ-R, PANSS, HAMD, HAMA, Q-LES-Q-SF, SES	Significant within-groups improvement in AH symptoms ($p< 0.001$, d = 1.230), but there was no evidence to suggest CATS is superior to CBT (p=0559). P300 amplitude was noted to correlate with AVH response.	PSYRATS-AH d = 1.23 (large)
Lopez-Luengo & Muela-Martinez (2016)	Computerised training	RCT	No intervention	Computerised training: N = 8, 25% female, age M = 34 (SD = 11.64) Control: N = 8, 12.5% female, age M= 29.25 (SD - 7.65)	Schizophrenia, shizoaffective, bipolar	Phase 1: 8 x 20min sessions Phase 2: 4 repeated sessions Phase 3: 12 repeated sessions	BPRS, PSYRATS-AH		Significant improvements on measure of psychiatric symptoms (BPRS) (z = −2.205; p = .027). Participants that engaged with attention training experienced significantly less frequent (z =−2.414; p = .016), less distressing (z = −2.22; p= .026) and less intense AHs than the control group. There were also improvements in errors made during cognitive tests.	PSYRATS-AH total not reported. Amount of distress subscale d = 0.50 (medium) BPRS: d = 0.82 (large)
Ludtke et al. (2020)	Web-based CBTp (EviBaS)	RCT	Waitlist control	Psychological online intervention: N =16, 81% female, age = 41.69 (SD =9.88) Waitlist: N = 39, 46% female, age =41.36 (9.25)	nonaffective psychotic disorder	11 modules in full intervention (1 mindfulness module)	DV-SA; LSHS-R; MAAS	Cognitive tests; PANSS (clinical variable, not outcome)	Participants completing the mindfulness module reported significantly higher mindfulness and lower hallucinations, but there was no significant effect of group allocation on distress by voices direct effect: (b = −0.309, SE = 0.756, t = 0.409, p = 0.685).	DS-VA $\boldsymbol{\eta}$2p = 0.06 (medium) LSHS-R $\boldsymbol{\eta}$2p = 0.214 (large) MAAS $\boldsymbol{\eta}$2p = 0.115 (medium)
Stefaniak et al. (2019)	Avatar	RCT	Waitlist control	Intervention group: N = 13, 54% female, age M = 33.4 (SD = 6.5) Control group: N = 10, 60% female, age M = 32.9 (SD = 8.7)	Paranoid schizophrenia, schizophrenia catatonic, schizophrenia residual, personality disorder	8 sessions (6 involving the avatar)	PSYRATS, VPDS		Statistically significant improvements between groups for PSYRATS-AH controllability and frequency ($p<0.05$); and VPDS-power and superiority. Pre-post analysis after control group received intervention also showed improvements in PSYRATS-AH domains immediately after therapy (mean difference 10:57, 95% CI 13:16 to 7:97; p < 0.0001), and lower PSYRATS-AH scores were maintained at follow-up.	PSYRATS AH d = 1.50 (large) VPDS d = 1.34

Table 1. *Paper Findings and Characteristics.*

[a]***Abbreviations:***

App, Application; ANART, American National Average Reading Test (Grober et al., 1991); BAVQ-R, The Revised Beliefs About Voices Scale (Chadwick et al., 2000); BAI, Beck Anxiety Inventory (Beck et al., 1993); BDI-II: Beck Depression Inventory–Second Edition (Beck, 1996); BCIS, Beck Cognitive Insight Scale (Beck et al., 2004); BMQ: Brief Medication Questionnaire (Svarstad et al., 1999);

BPRS, Brief Psychiatric Rating Scale (Overall & Gorham, 1962); CAARMS, Comprehensive Assessment of At Risk Mental States (Yung et al., 2002); CDS, Calgary Depression Scale (Addington et al., 1993); CDSS, Clinical Decision Support Systems; CHOICE, CHoice of Outcome In Cbt for psychoses (Greenwood et al., 2010); DASS-21, Depression Anxiety Stress Scale-21 (Lovibond & Lovibond, 1995); DV-SA, Delusion and Voices Self-Assessment (Pinto et al., 2007); ERS, Empowerment Rating Scale (Rogers et al., 1997); EQ5D, EuroQol-5D-5L (The EuroQol Group, 1990); GAD-7, General Anxiety Disorder-7 (Spitzer et al., 2006); GAF, Global Assessment of Functioning (Hall, 1995); GPTS, Green Paranoid Thoughts Scale(Green et al., 2008); HAMA, Hamilton Anxiety Scale (Hamilton, 1959); HAMD, Hamilton Depression Scale (Hamilton, 1960); HPSVQ: Hamilton Program for Schizophrenia Voices Questionnaire (Van Lieshout & Goldberg, 2007); ICECAP-A, ICEpopCAPability measure for Adults (Flynn et al., 2015); ILSS, Independent Living Survey (Wallace et al., 2000); IMRS, Illness Management and Recovery Scale (Färdig et al., 2011); ISI: Insomnia Severity Index (Bastien et al., 2001); LSHS-R, Launay Slade Hallucination Scale Revised (Launay & Slade, 1981); MAAS, Mindful Attention and Awareness Scale (Brown & Ryan, 2003); PANSS, Positive and Negative Syndrome Scale (Kay et al., 1987); The Paranoia Scale (Fenigstein & Vanable, 1992); PSP, Personal Social Performance (Morosini et al., 2000); PSYRATS (AH or D), Psychotic Symptoms Rating Scales (Auditory Hallucination and Delusions subscales;(Haddock et al., 1999); QLES-Q, Quality of Life Enjoyment and Satisfaction Questionnaire (Endicott et al., 1993); SEPS, Subjective Experiences of Psychosis Scale (Haddock et al., 2011); SES, Rosenberg self-esteem scale (Rosenberg, 2015); SLOF, Specific Levels of Functioning (Schneider & Struening, 1983); RCT, Randomised Controlled Trial; TAU, Treatment as Usual; VAS, Visual Analogue Scale; VAAS, The voices acceptance and Action Scale (Shawyer et al., 2007), VPDS, Voice Power Differential Scale (Birchwood et al., 2000).

Trial Quality

The included studies were assessed as mainly moderate or weak quality. The overall quality ratings were four rated as *strong*, eight rated as *moderate,* and six rated as *weak.* The EPHPP quality assessment tool (Thomas et al., 2004) has the tendency to overinflate risk of performance or detection bias, as the studies included were interventions that aimed to improve voice-hearing symptoms, meaning that blinding the participant is challenging in this scenario. While this did not affect the overall quality rating for single-blind studies, it resulted in moderate or low-quality ratings for studies that used no blinding at all, even if they scored well in other domains. In the studies that included an active control, it was either reported that participants were not blinded or unclear whether they were made aware of the research question during informed consent.

Studies	**Selection Bias**	**Study Design**	**Confounders**	**Blinding**	**Data Collection Methods**	**Withdrawals and drop-outs**	**Global Rating**
Bell et al. (2020b)	2	1	1	2	1	1	1
Bucci et al. (2018)	2	1	3	2	1	1	2
Buck et al. (2022)	2	2	1	2	1	1	1
Craig et al. (2018)	2	1	1	2	1	2	1
Dellazizzo et al. (2021)	2	1	1	3	1	3	3
Dodgson et al. (2021)	2	2	1	3	1	1	2
du Sert et al. (2018)	2	1	1	3	1	2	2
Ellett et al. (2022)	2	2	1	3	1	1	2
Gottlieb et al. (2013)	2	2	1	3	1	1	2
Gottlieb et al. (2017)	2	1	3	2	1	1	2
Granholm et al. (2012)	2	2	3	3	3	2	3
Harper (2014)	2	2	1	3	1	3	3
Jongeneel (2022)	3	2	1	3	3	3	3

Leff et al. (2013)	2	1	1	2	1	2	1
Liang et al. (2022)	2	1	1	3	1	1	2
Lopez-Luengo & Muela-Martinez (2016)	3	1	1	2	1	3	3
Ludtke et al. (2020)	2	1	1	2	3	1	2
Stefaniak. et al. (2019)	3	1	3	3	1	3	3

Table 2. *Paper Findings and Characteristics.*

**Numerical ratings are as follows: 1 = 'Strong, 2 = 'moderate', 3 = weak.*

Narrative Synthesis

Articles were grouped by interactive digital intervention for the purposes of narrative synthesis, as outlined in Table 3.

Interactive Digital Technology (n=18)		
Tablet or Computer-based Interventions (n = 7)	**Smartphone Interventions (n = 5)**	**Avatar therapies (n = 6)**
Dodgson et al. (2021)	Bell et al. (2020)	Craig et al. (2018)
Ellett et al. (2022)	Bucci et al. (2018)	Dellazizzo et al. (2021)
Gottlieb et al. (2013)	Buck et al. (2022)	du Sert et al. (2018)
Gottlieb et al. (2017)	Granholm et al. (2012)	Leff et al. (2013)
Harper (2014)	Jongeneel et al. (2022)	Liang et al. (2022)
Lopez-Luengo and Muela-Martinez (2016)		Stefaniak et al. (2019)
Ludtke et al. (2020)		

Table. 3*. Studies by mode of delivery*

Tablet or Computer-based Interventions

Description

In the present review, three of the computer or tablet-based intervention studies were RCTs (Gottlieb et al., 2017; Lopez-Luengo & Muela-Martinez, 2016; Ludtke et al., 2020), and the remaining studies relied on repeated measures pre-post designs (n = 4)(Dodgson et al., 2021; Ellett et al., 2022; Gottlieb et al., 2013; Harper, 2014). Four of the studies used the PSYRATS-AH (Haddock et al., 1999) as their main measure of voice-related distress, with four studies also using the BAVQ-R (Chadwick et al., 2000).

Of the presented studies, three were evaluations of the 'Coping with Voices' programme (Gottlieb et al., 2017; Gottlieb et al., 2013; Harper, 2014), described as a 10-session computerised game-based web-based intervention that is based on Cognitive Behavioural Therapy for Psychosis (CBTp) principles. The programme involves exercises and games that support participants to develop coping techniques to manage their voices.

Two studies evaluated an internet-based CBTp intervention in the EviBaS Trial (Ludtke et al., 2020; Westermann et al., 2020). This is organised into 11 modules, a number which address various symptoms associate with psychosis including voice-hearing, and other modules that target symptoms indirectly such as a mindfulness and metacognition modules. Another study looked at a mindfulness-based online format, in the form of an online therapy group (Ellett et al., 2022). The intervention was delivered over 12 90-minute sessions, facilitated by two Clinical Psychologists.

The sole tablet-based study (Dodgson et al., 2021) explored the use of a digital toolkit called Managing Unusual Sensory Symptoms (MUSE) that is a manualised intervention presented on a tablet. The toolkit includes eight modules, two treatment interventions providing psychoeducation about voices and how the mind works. The intervention normally takes place over four to six sessions and is delivered by a care-coordinator or other healthcare practitioner. It is intended that MUSE is used jointly by the practitioner and participant.

Only one of the included computer-based studies took an attention training approach to reducing AHs in people with psychosis (Lopez-Luengo & Muela-Martinez, 2016). The intervention is comprised of three RehaCom modules of attentional rehabilitation: attention and concentration; vigilance; and divided attention. Participants were required to train over an initial eight sessions, then repeat modules over a further 16 sessions while including listening to a recorded radio programme or random voice environment. This intervention and aims to support participant to move their attention from their voices to environmental stimuli therefore removing interference from AHs.

Participants in each of the studies received different levels of support. The MUSE (Dodgson et al., 2021) intervention was delivered by a clinician using the tablet and the online mindfulness group (Ellett et al., 2022) was delivered by psychologists. In the RehaCom intervention (Lopez-Luengo & Muela-Martinez, 2016) a trainer was present in order to monitor participants' activity and provide psychoeducational feedback, while a trained psychology students guided participants throughout the online intervention and provided feedback once or twice (Ludtke et al., 2020). Similarly, in the pilot investigation of the

‘Coping with Voices’ programme (Harper, 2014) there was a support person present for assistance in each of the sessions. While in later investigations of the programme (Gottlieb et al., 2017; Gottlieb et al., 2013) there was a programme assistant present to set participants up on a lab-based computer, but then they were encouraged to work privately.

Outcomes

The Web-based CBT interventions has demonstrated mixed results. (Gottlieb et al., 2013) found significant changes in AHs with medium effect sizes (d = 0.65) after the intervention was delivered. However, in the RCT conducted by Gottlieb et al. (2017) no differences were found in voice hearing symptoms between their intervention and treatment as usual conditions with small effect sizes (d = 0.17 for PSYRATS-AH and d = 0.09 on the BPRS AH). Both were classified as moderate quality, as was the EviBaS RCT reported by Ludtke et al. (2020) who found lower hallucinations generally after their web-based CBT intervention. They found no significant effect of group allocation on amount of voice distress, however they did report medium effect sizes of the intervention on voice distress ($\boldsymbol{\eta}$2p = 0.06) and on mindfulness ($\boldsymbol{\eta}$2p = 0.115) and large effect sizes for decreased likelihood of hallucinations ($\boldsymbol{\eta}$2p = 0.214). The RCT of computerised attention training conducted by Lopez-Luengo and Muela-Martinez (2016) did not report the overall outcome for voice distress and did not report effect sizes or sufficient data for this to be calculated. However, they reported improvements in frequency, distress and intensity of voices. The quality of this study was rated as low, which suggests that very limited conclusions can be drawn from these findings.

Similarly, the online mindfulness study (Ellett et al., 2022) reported mainly subscales of the BAVQ-R, and did not report an overall outcome for voice distress, but demonstrated significant improvements in malevolence, omnipotence and resistance emotion (d = 0.8, d = 0.7 and d = 0.6 respectively). However, the overall quality of this study was rated as moderate. In the MUSE study (Dodgson et al., 2021), they reported a significant difference in AHs and a medium effect size (d = 0.77). They also found significant reductions on measure of at-risk mental state from baseline, with large effect sizes for the severity of auditory and visual hallucinations (d = 0.70–0.77). While this study reported some positive results, this study was also rated as being of moderate quality evidence. Additionally, both studies were pre-post designs, therefore changes in the outcomes could result from extraneous variables.

Harper (2014) reported a medium effect size for voice hearing (d = 0.6) and symptoms of psychosis (d = 0.6), and large effect sizes for psychiatric symptoms (d = 0.86) on a coping with voices web-based CBTp trial, however the quality of this study was also rated low.

Overall, the three RCTs demonstrated very limited evidence for computerised interventions, with one web-based CBT intervention demonstrating no improvement in AH distress (Gottlieb et al., 2017) and another demonstrating reductions in voice distress but no significant effect of group allocation (Ludtke et al., 2020). While the RCT of computerised training (Lopez-Luengo & Muela-Martinez, 2016) reported improvements in frequency, distress and intensity of AHs, but did not report effect sizes. Overall, the quality of evidence for computerised interactive digital technologies were of medium to low quality, which makes it difficult to draw any strong conclusions regarding effectiveness.

Smartphone interventions

Description

There were five smartphone interventions identified within the review. Two of the five interventions also involved an ecological momentary assessment (EMA) element (Bell et al., 2020; Buck et al., 2022) that allows the app to provide more tailored coping strategies based on this. The EMA element of the SAVVy app (Bell et al., 2020) required participants to complete questionnaires ten times per day about voice precipitants, distress and coping responses, the results of which were then used to inform individualised coping strategies that were then programmed into the app. While the FOCUS app (Buck et al., 2022) deployed EMA notifications three times per day and targeted interventions were prompted based on participants' responses. Similarly, Actissist deployed self-appraisal questions to participants three times per day to inform targeted coping strategies (Bucci et al., 2018) . Three studies initiated the intervention through automated prompts that offer coping strategies (Bell et al., 2020; Bucci et al., 2018; Buck et al., 2022), while Granholm et al. (2012) offered three sets of interactive text exchanges for each participant utilising CBT techniques.

Jongeneel et al. (2022) Temstem app uses language games to reduce voice-hearing distress. The app provides a 'silencing' option that aims to inhibit voice activity through an incompatible language production or motor language task. The other option is a 'challenging' function that uses dual tasking technique of placing demand on the working memory with a language game while recalling unpleasant voice content, which aims to reduce emotionality, vividness and credibility of the AH (Jongeneel et al., 2020).

The studies included varying degrees of clinician or researcher input, that may also have impacted the results. Bell et al. (2020) provided an initial introductory session about how to use the app and four further sessions to discuss the results of the EMA questionnaires. For FOCUS and Actissist researchers only met participants at baseline and follow-up (Bucci et al., 2018; Buck et al., 2022). Granholm et al. (2012) provided an initial 30-minute initial training session for participants, and repeated training sessions and prompt messages from the researchers for participants having difficulty engaging with the app. The Temstem app (Jongeneel et al., 2022) did not require the participant to meet with a researcher, and psychoeducation was instead provided by an avatar named Tim.

Outcomes

The strongest evidence for app-based interventions for AHs came from the RCTs conducted by Bell et al. (2020) and Bucci et al. (2018). While the former was rated as being high quality, the latter was rated as moderate quality evidence, due to disparate gender representations in the control and experimental samples. There was a trend toward improvement in AH symptoms in all the app studies (Bell et al., 2020; Bucci et al., 2018; Buck et al., 2022; Jongeneel et al., 2022) with small to medium effect sizes ($g = 0.55$, $d = 0.23$, $d = 0.21$ and $d = 0.49$ respectively). While the cohort study completed by Buck et al. (2022) showed small improvements in AHs and quality of life, and received a high-quality rating, this could only provide evidence of change over time and their sample was underpowered to detect significant effects.

Granholm et al. (2012) also reported an improvement in AHs according to their ambulatory monitoring, but there was insufficient data to calculate an effect size for this. The quality of evidence for both Granholm et al. (2012) and Jongeneel et al. (2022) was rated as low, with both studies being subject to bias on multiple domains, therefore these two studies contribute poor evidence.

Avatar therapies

Description

AVATAR therapy is an innovation by Julian Leff (2013) that involves a therapist supporting the participant to create a computerised avatar of the voice that they hear, which is then used in the therapy. The therapist then uses the avatar to role-play as the voice to the participant in the sessions, while also offering therapeutic support in a trialogue. Later iterations of the therapy have also included the use of an immersive VR headset (Dellazizzo et al., 2021; du Sert et al., 2018; Liang et al., 2022).

The six studies identified were all described as RCTs, two were described as single-blind (Craig et al., 2018; Leff et al., 2013) and in the remaining four lack of blinding was either described as a limitation, or was not mentioned at all (Liang et al., 2022).

Outcomes

All the avatar therapy studies reported large effect sizes for the improvement of voice-hearing distress, as measured by PSYRATS-AH. The strongest evidence for avatar therapy was demonstrated in the Craig et al. (2018) RCT, which reported improvements in AH symptoms with large effect sizes (d = 0.8) that were maintained at follow-up. This was rated as high quality using the assessment tool. The earlier pilot randomised trial (Leff et al., 2013) also received an overall high rating and demonstrated large effect sizes on their primary outcome measure, the PSYRATS-AH (d = 0.8). However, their sample size was small (N=26) and they relied on partial-crossover methodology. Likewise, du Sert et al. (2018) had an even smaller sample size (N = 15) and similarly relied on a partial-crossover methodology. They reported a large effect size (d = 0.8) for avatar therapy, however they received a ‘moderate’ quality rating, suggesting that only limited conclusions can be drawn from these results.

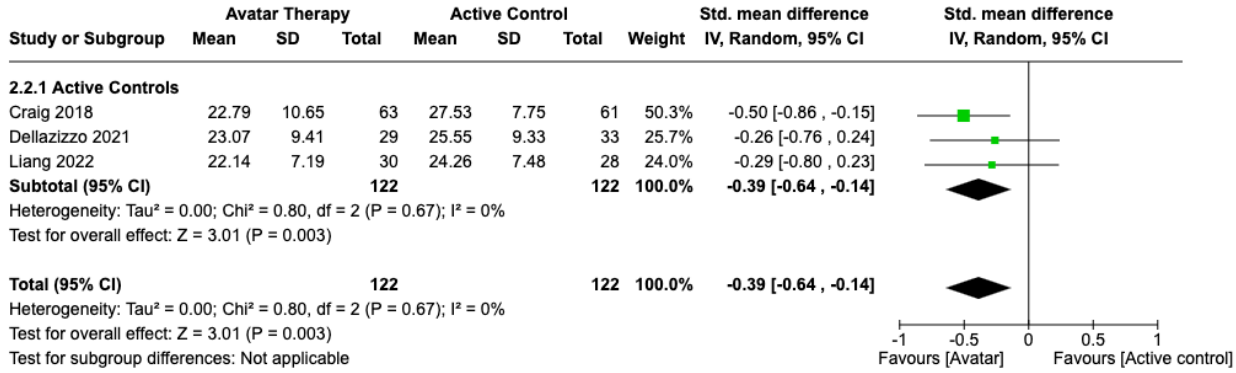
Large effect sizes were also reported in the two more recent RCTs of avatar therapy on the PSYRATS-AH, with the following effect sizes: d = 1.23 (Liang et al., 2022), d= 1.08 (Dellazizzo et al., 2021) and d = 1.6. The two trials received quality ratings of moderate and low respectively, with the quality of Dellazizzo et al. (2021) being particularly compromised by a high attrition rate. Finally, effect sizes for Stefaniak et al. (2019) were calculated as large effect sizes for their outcome measures (d=1.5 on PSRATS-AH and 1.34 on VPDS). However, the study suffered from numerous methodological limitations, and at times information was difficult to glean given the limited information provided within the paper, therefore this trial received a low global rating of quality assessment which impacts the applicability of these results.

Meta-analysis

As most of the studies were heterogenous, it was only considered appropriate to include the avatar therapies in a meta-analysis. Studies were included in the meta-analysis only if they were described as RCTs and had active control groups.

Meta-analysis for avatar therapies

The results of the meta-analysis can be seen in (figure 1) for avatar therapy compared with active controls, including supported counselling (Craig et al., 2018) and CBTp (Dellazizzo et al., 2021; Liang et al., 2022). The overall standard mean difference was -0.39 (95% CI: -0.64, -0.14) in favour of avatar therapy, which was significant Z = 2.42 (p=0.02).



	Avatar Therapy			Active Control				Std. mean difference
Study or Subgroup	**Mean**	**SD**	**Total**	**Mean**	**SD**	**Total**	**Weight**	**IV, Random, 95% CI**
2.2.1 Active Controls								
Craig 2018	22.79	10.65	63	27.53	7.75	61	50.3%	-0.50 [-0.86 , -0.15]
Dellazizzo 2021	23.07	9.41	29	25.55	9.33	33	25.7%	-0.26 [-0.76 , 0.24]
Liang 2022	22.14	7.19	30	24.26	7.48	28	24.0%	-0.29 [-0.80 , 0.23]
Subtotal (95% CI)			**122**			**122**	**100.0%**	**-0.39 [-0.64 , -0.14]**
Heterogeneity: Tau² = 0.00; Chi² = 0.80, df = 2 (P = 0.67); I² = 0%								
Test for overall effect: Z = 3.01 (P = 0.003)								
Total (95% CI)			**122**			**122**	**100.0%**	**-0.39 [-0.64 , -0.14]**
Heterogeneity: Tau² = 0.00; Chi² = 0.80, df = 2 (P = 0.67); I² = 0%								
Test for overall effect: Z = 3.01 (P = 0.003)								
Test for subgroup differences: Not applicable								

Figure 1. *Forest plot of avatar therapy versus active control.*

Discussion

Overall Findings

This systematic review aimed to summarise the current evidence for interactive digital interventions for AHs including the clinical outcomes of the intervention subtypes, characteristics and modes of delivery. Overall, avatar therapies appear to provide the strongest evidence of effectiveness for reducing the distress of AHs, with all six of the studies being RCT designs, two studies being rated as strong quality, and trials all reporting large effect sizes for improvements in voice-hearing distress. Additionally, the meta-analysis demonstrated a small, significant effect in favour of avatar therapy compared to active controls. However, many of these trials suffered from methodological biases that necessitate cautious interpretations. Furthermore, avatar therapies require the presence of trained therapists able to provide this intervention, and therefore still encounter similar barriers to accessing treatment as traditional face-to-face interventions (Dockery et al., 2015). However, a second phase of the AVATAR trial has been undertaken, that utilised this technique remotely, which, depending on these outcomes, may also provide the same accessibility benefits of other online therapies (Rus-Calafell et al., 2022).

The evidence for app-based interventions remains limited, generally reporting small trends towards improvement on the PSYRATS-AH, but only based on a small number of samples, with generally low global quality ratings that limit the validity of their claims. Due to the methodological differences between the apps, and that one of the trials did not report sufficient data to calculate the effect size (Granholm et al., 2012), it is difficult to determine which types of app are associated with greater improvement in outcomes. Further high quality RCTs are required to evaluate whether an app-based approach can be successfully used to treat AHs.

The evidence for computerised interventions for AHs has been of low quality overall for AHs, which limits the conclusions that can be drawn from the results. While web-based CBT have shown improvements in AHs in pilot trials (Gottlieb et al., 2013; Harper, 2014), when investigated with a more rigorous RCT, no differences were found between the intervention and TAU (Gottlieb et al., 2017; Ludtke et al., 2020). The evidence for computerised training was of low quality (Lopez-Luengo & Muela-Martinez, 2016), and the sample size small, therefore despite the suggestion of positive results, more research is required to determine whether this is a useful approach. While Dodgson et al. (2021) found improvements in AHs when using a clinician-delivered tablet-based intervention, there were methodological limitations within the study, and the requirement of a trained clinician to deliver the intervention limits its utility for increasing accessibility.

Ellett et al. (2022) found significant improvements on subscales of the BAVQ-R for an online mindfulness intervention, however as this was a pre-post design, this can only be considered evidence of change over time. In the context of limited evidence for mindfulness for AHs in general (Strauss et al., 2015), a dearth of evidence for online mindfulness for AHs is unsurprising.

There are differences between studies in the level of input provided by the research team and trained therapists, ranging from therapist involvement being an integral feature of the avatar trials to no contact with a researcher or clinician (Jongeneel et al., 2022). Meyerowitz-Katz et al. (2020) explored the attrition rates for app-based interventions for chronic diseases, finding high drop-out rates even with high levels of clinician support, which they described as concerning. Meanwhile, Garrido et al. (2019) completed a meta-analysis for digital interventions for anxiety and depression in young people, also finding high dropout rates for participants. They suggested that this may impact the ability of current interactive digital interventions to support clinical change unless they also involve high levels of supervised use or therapist support.

The current systematic review did not consider feasibility of the digital health interventions directly. However, attrition rates were considered indirectly in assessing the attrition domain of the quality assessment. A recent systematic literature search has considered adverse event monitoring for digital health interventions for people with psychosis (Allan et al., 2024). They found that 4.9% of the 593 adverse event reports from 18 digital intervention studies were related to the interventions themselves and that they led to exacerbation of psychosis or mood difficulties in some cases. While they concluded that the results support the overall safe use of digital interventions, they suggest that adverse events should be routinely monitored and evaluated. While this review did not consider adverse event reporting of interaction digital interventions, future reviews of digital interventions for AHs should consider adverse event reporting specifically.

Strengths and Limitations

This was the first study to review interactive digital interventions for AHs, and considered the full breadth of the currently available modes of delivery. This may suggest avenues that may be helpful to pursue for future research, and seems to suggest that avatar therapies may hold much promise for the future treatment of AHs.

This review was subject to several limitations. Supplementary research articles were not included within this review, as these were mainly an overview and did not include detailed methodologies, therefore it would not have been possible to assess the quality of the evidence. The result of this is that it has not been possible to include all the latest advancements. However, this serves as a summary of the present position of interactive digital interventions. Additionally, this study did not include qualitative investigations of interactive digital interventions for AHs, which means that user perspectives were neglected from this review.

The EPHPP quality tool (Thomas et al., 2004) arguably inflates quality of RCTs automatically (Armijo-Olivo et al., 2012), as they are automatically assigned a stronger score. Regardless, this assessment tool still seemed to differentiate between studies in terms of quality and has the benefit of providing excellent inter-rater reliability for the global rating, in part due to the provision of less subjective assessment criteria than the Cochrane Collaboration Risk of Bias Tool (Armijo-Olivo et al., 2012; Higgins & Green, 2008).

The effect size was not always calculated in the included studies, and the authors generally did not provide their method for calculating this. For the purpose of this review, there was often insufficient data provided to calculate d_{rm} for within-subjects Cohen's d, therefore d_{av} was substituted, which may impact on the results reported (Lakens, 2013).

Some of the included studies targeted other symptoms of psychosis as well as AHs, but were included if there was a specific element of the invention that targeted AHs. Bucci et al. (2018) reported combined results for all participants, therefore it is not possible to specifically observe the effect on those that experience AHs. However, Buck et al. (2022) reported the majority of their results for general psychosis symptoms, but did exclude non-voice hearers from the HPSVQ, their measure of voice distress.

Clinical Implications

The evidence to date for interactive digital interventions for AHs remains limited, and at present there is not sufficient evidence of effectiveness for the use of computerised or app-based interventions. Similarly, avatar therapies are in their infancy, and the quality of evidence remains limited, however, avatar therapies show great promise, as has previously been asserted by Freeman et al. (2017) for VR interventions. Further high quality RCTs of digital interventions for AH would be needed to establish evidence of effectiveness. At this time, further evaluation in routine clinical settings would evidence real-world feasibility.

Many of the digital interventions described required the presence of a trained clinician to deliver the therapies, which would limit their utility in increasing access to care. App-based and computer-based interventions require less clinician input, but with the result of higher attrition rates. Utilising these interventions in routine clinical settings would require consideration of methods for encouraging engagement and monitoring safety for their users.

Future Research

Future studies should aim to increase the availability of high quality data through large sample single-blinded RCTs using active controls. It would also be of benefit to determine how much contact from researchers is needed to ensure effectiveness, engagement and safety, as this will help to establish the utility of interactive digital interventions as stand-alone treatments. Developing a qualitative understanding of what supports voice-hearers to engage with these technologies could be a potential area to consider. Future studies might also consider whether there are safe alternatives to therapist contact when setting up the app, for example Jongeneel et al. (2022) utilising an avatar on their app to provide psychoeducation.

Results are pending for ongoing large-scale RCTs for avatar therapy trials (Garety et al., 2021; Smith et al., 2022) that might allow further consideration of the effectiveness of such interventions. Further consideration of whether avatar therapy can successfully delivered in routine clinical settings would also be of benefit to consider whether this has wider utility outside of clinical trials.

Conclusions

There remains little strong evidence for the utility of interactive digital interventions for AHs, and much more research is required to understand factors that might influence effectiveness of those that are not therapist-led. Avatar therapies appear to hold the most promise at present, but more evidence is awaited to make firmer judgements.

References:

Aali, G., Kariotis, T., & Shokraneh, F. (2020). Avatar Therapy for people with schizophrenia or related disorders. *Cochrane Database of Systematic Reviews*(5).

Addington, D., Addington, J., & Maticka-Tyndale, E. (1993). Assessing depression in schizophrenia: the Calgary Depression Scale. *The British Journal of Psychiatry*, *163*(S22), 39-44.

Allan, S., Ward, T., Eisner, E., Bell, I. H., Cella, M., Chaudhry, I. B., Torous, J., Kiran, T., Kabir, T., & Priyam, A. (2024). Adverse Events Reporting in Digital Interventions Evaluations for Psychosis: A Systematic Literature Search and Individual Level Content Analysis of Adverse Event Reports. *Schizophrenia Bulletin*, sbae031.

Armijo-Olivo, S., Stiles, C. R., Hagen, N. A., Biondo, P. D., & Cummings, G. G. (2012). Assessment of study quality for systematic reviews: a comparison of the Cochrane Collaboration Risk of Bias Tool and the Effective Public Health Practice Project Quality Assessment Tool: methodological research. *Journal of Evaluation in Clinical Practice*, *18*(1), 12-18.

Bastien, C. H., Vallières, A., & Morin, C. M. (2001). Validation of the Insomnia Severity Index as an outcome measure for insomnia research. *Sleep Medicine*, *2*(4), 297-307.

Beavan, V., Read, J., & Cartwright, C. (2011). The prevalence of voice-hearers in the general population: a literature review. *Journal of Mental Health*, *20*(3), 281-292.

Beck, A. T. (1996). *Manual for the Beck Depression Inventory-II*. Psychological Corporation.

Beck, A. T., Baruch, E., Balter, J. M., Steer, R. A., & Warman, D. M. (2004). A new instrument for measuring insight: the Beck Cognitive Insight Scale. *Schizophrenia Research*, *68*(2-3), 319-329.

Beck, A. T., Epstein, N., Brown, G., & Steer, R. (1993). Beck Anxiety Inventory manual. *Psychological Corporation.*

Bell, I. H., Nicholas, J., Alvarez-Jimenez, M., Thompson, A., & Valmaggia, L. (2020). Virtual reality as a clinical tool in mental health research and practice. *Dialogues in Clinical Neuroscience*, *22*(2), 169-177.

Bell, I. H., Rossell, S. L., Farhall, J., Hayward, M., Lim, M. H., Fielding-Smith, S. F., & Thomas, N. (2020). Pilot randomised controlled trial of a brief coping-focused intervention for hearing voices blended with smartphone-based ecological momentary assessment and intervention (SAVVy): Feasibility, acceptability and preliminary clinical outcomes. *Schizophrenia Research*, *216*, 479-487.

Berry, N., Lobban, F., Emsley, R., & Bucci, S. (2016). Acceptability of interventions delivered online and through mobile phones for people who experience severe mental health problems: a systematic review. *Journal of Medical Internet Research*, *18*(5), e121.

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*(2), 337-344.

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, *84*(4), 822.

Bucci, S., Barrowclough, C., Ainsworth, J., Machin, M., Morris, R., Berry, K., Emsley, R., Lewis, S., Edge, D., Buchan, I., & Haddock, G. (2018). Actissist: Proof-of-concept trial of a theory-driven digital intervention for psychosis. *Schizophrenia Bulletin*, *44*(5), 1070-1080. https://doi.org/https://dx.doi.org/10.1093/schbul/sby032

Buck, B., Nguyen, J., Porter, S., Ben-Zeev, D., & Reger, G. M. (2022). FOCUS mHealth Intervention for Veterans with Serious Mental Illness in an Outpatient Department of Veterans Affairs Setting: Feasibility, Acceptability, and Usability Study. *JMIR Mental Health*, *9(1) (no pagination)*, Article e26049.

Chadwick, P., & Birchwood, M. (1994). The omnipotence of voices: A cognitive approach to auditory hallucinations. *The British Journal of Psychiatry*, *164*(2), 190-201.

Chadwick, P., Lees, S., & Birchwood, M. (2000). The revised beliefs about voices questionnaire (BAVQ–R). *The British Journal of Psychiatry*, *177*(3), 229-232.

Clarke, S., Hanna, D., Mulholland, C., Shannon, C., & Urquhart, C. (2019). A systematic review and meta-analysis of digital health technologies effects on psychotic symptoms in adults with psychosis. *Psychosis*, *11*(4), 362-373.

Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement*, *20*(1), 37-46.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences (2nd ed.).* L. Erlbaum Associates.

Corrigan, P. (2004). How stigma interferes with mental health care. *American Psychologist*, *59*(7), 614.

Craig, T. K., Rus-Calafell, M., Ward, T., Leff, J. P., Huckvale, M., Howarth, E., Emsley, R., & Garety, P. A. (2018). AVATAR therapy for auditory verbal hallucinations in people with psychosis: a single-blind, randomised controlled trial. *The Lancet Psychiatry*, *5*(1), 31-40.

Dellazizzo, L., Potvin, S., Phraxayavong, K., & Dumais, A. (2021). One-year randomized trial comparing virtual reality-assisted therapy to cognitive-behavioral therapy for patients with treatment-resistant schizophrenia. *Schizophrenia*, *7*(1), 9.

Department of Health and Social Care. (2022). *A plan for digital health and social care*. Department of Health & Social Care

Dettori, J. R., Norvell, D. C., & Chapman, J. R. (2022). Fixed-effect vs random-effects models for meta-analysis: 3 points to consider. *Global Spine Journal*, *12*(7), 1624-1626.

Dockery, L., Jeffery, D., Schauman, O., Williams, P., Farrelly, S., Bonnington, O., Gabbidon, J., Lassman, F., Szmukler, G., & Thornicroft, G. (2015). Stigma-and non-stigma-related treatment barriers to mental healthcare reported by service users and caregivers. *Psychiatry Research*, *228*(3), 612-619.

Dodgson, G., Aynsworth, C., Mitrenga, K. J., Gibbs, C., Patton, V., Fernyhough, C., Dudley, R., Ewels, C., Leach, L., Alderson-Day, B., & Common, S. (2021). Managing unusual sensory experiences: A feasibility trial in an at Risk Mental States for psychosis group. *Psychology and Psychotherapy: Theory, Research and Practice*, *94*(3), 481-503.

du Sert, O. P., Potvin, S., Lipp, O., Dellazizzo, L., Laurelli, M., Breton, R., Lalonde, P., Phraxayavong, K., O'Connor, K., Pelletier, J. F., Boukhalfi, T., Renaud, P., & Dumais, A. (2018). Virtual reality therapy for refractory auditory verbal hallucinations in schizophrenia: A pilot clinical trial. *Schizophrenia Research*, *197*, 176-181.

Ebert, D. D., Van Daele, T., Nordgreen, T., Karekla, M., Compare, A., Zarbo, C., Brugnera, A., Øverland, S., Trebbi, G., & Jensen, K. L. (2018). Internet-and mobile-based psychological interventions: applications, efficacy, and potential for improving mental health. *European Psychologist*, *3*(2), 167-187.

Ellett, L., Dannahy, L., & Chadwick, P. (2022). Engagement, clinical outcomes and therapeutic process in online mindfulness for psychosis groups delivered in routine care. *Psychology and Psychotherapy: Theory, Research and Practice*, *95*(2), 467-476.

Endicott, J., Nee, J., Harrison, W., & Blumenthal, R. (1993). Quality of Life Enjoyment and Satisfaction Questionnaire: a new measure. *Psychopharmacology Bulletin*, *29*(2), 321-326.

Färdig, R., Lewander, T., Fredriksson, A., & Melin, L. (2011). Evaluation of the Illness Management and Recovery Scale in schizophrenia and schizoaffective disorder. *Schizophrenia Research*, *132*(2-3), 157-164.

Fenigstein, A., & Vanable, P. A. (1992). Paranoia and self-consciousness. *Journal of Personality and Social Psychology*, *62*(1), 129.

Firth, J., & Torous, J. (2015). Smartphone apps for schizophrenia: a systematic review. *JMIR mHealth and uHealth*, *3*(4), e4930.

Flynn, T. N., Huynh, E., Peters, T. J., Al-Janabi, H., Clemens, S., Moody, A., & Coast, J. (2015). Scoring the ICECAP-A capability instrument. Estimation of a UK general population tariff. *Health Economics*, *24*(3), 258-269.

Freeman, D., Reeve, S., Robinson, A., Ehlers, A., Clark, D., Spanlang, B., & Slater, M. (2017). Virtual reality in the assessment, understanding, and treatment of mental health disorders. *Psychological Medicine*, *47*(14), 2393-2400.

Garety, P., Edwards, C. J., Ward, T., Emsley, R., Huckvale, M., McCrone, P., Rus-Calafell, M., Fornells-Ambrojo, M., Gumley, A., & Haddock, G. (2021). Optimising AVATAR therapy for people who hear distressing voices: study protocol for the AVATAR2 multi-centre randomised controlled trial. *Trials*, *22*(1), 366.

Garrido, S., Millington, C., Cheers, D., Boydell, K., Schubert, E., Meade, T., & Nguyen, Q. V. (2019). What works and what doesn't work? A systematic review of digital mental health interventions for depression and anxiety in young people. *Frontiers in Psychiatry*, *10*, 759.

Global Burden of Disease Study. (2019). *GBD Results Tool.* Seattle: Institute for Health Metrics and Evaluation.

Gottlieb, J. D., Gidugu, V., Maru, M., Tepper, M. C., Davis, M. J., Greenwold, J., Barron, R. A., Chiko, B. P., & Mueser, K. T. (2017). Randomized controlled trial of an internet cognitive behavioral skills-based program for auditory hallucinations in persons with psychosis. *Psychiatric Rehabilitation Journal*, *40(3)*, 283-292.

Gottlieb, J. D., Romeo, K. H., Penn, D. L., Mueser, K. T., & Chiko, B. P. (2013). Web-based cognitive-behavioral therapy for auditory hallucinations in persons with psychosis: A pilot study. *Schizophrenia Research*, *145*(1-3), 82-87.

Granholm, E., Ben-Zeev, D., Link, P. C., Bradshaw, K. R., & Holden, J. L. (2012). Mobile assessment and treatment for schizophrenia (MATS): A pilot trial of an interactive text-messaging intervention for medication adherence, socialization, and auditory hallucinations. *Schizophrenia Bulletin*, *38(3)*, 414-425.

Green, C., Freeman, D., Kuipers, E., Bebbington, P., Fowler, D., Dunn, G., & Garety, P. (2008). Measuring ideas of persecution and social reference: the Green et al. Paranoid Thought Scales (GPTS). *Psychological Medicine*, *38*(1), 101-111.

Greenwood, H., Krzyzaniak, N., Peiris, R., Clark, J., Scott, A. M., Cardona, M., Griffith, R., & Glasziou, P. (2022). Telehealth versus face-to-face psychotherapy for less common mental health conditions: systematic review and meta-analysis of randomized controlled trials. *JMIR Mental Health*, *9*(3), e31780.

Greenwood, K. E., Sweeney, A., Williams, S., Garety, P., Kuipers, E., Scott, J., & Peters, E. (2010). CHoice of Outcome In Cbt for psychosEs (CHOICE): the development of a new service user–led outcome measure of CBT for psychosis. *Schizophrenia Bulletin*, *36*(1), 126-135.

Grober, E., Sliwinsk, M., & Korey, S. R. (1991). Development and validation of a model for estimating premorbid verbal intelligence in the elderly. *Journal of Clinical and Experimental Neuropsychology*, *13*(6), 933-949.

Haddock, G., Eisner, E., Boone, C., Davies, G., Coogan, C., & Barrowclough, C. (2014). An investigation of the implementation of NICE-recommended CBT interventions for people with schizophrenia. *Journal of Mental Health*, *23*(4), 162-165.

Haddock, G., McCarron, J., Tarrier, N., & Faragher, E. (1999). Scales to measure dimensions of hallucinations and delusions: the psychotic symptom rating scales (PSYRATS). *Psychological Medicine*, *29*(4), 879-889.

Haddock, G., Wood, L., Watts, R., Dunn, G., Morrison, A. P., & Price, J. (2011). The Subjective Experiences of Psychosis Scale (SEPS): psychometric evaluation of a scale to assess outcome in psychosis. *Schizophrenia Research*, *133*(1-3), 244-249.

Hall, R. C. (1995). Global assessment of functioning: a modified scale. *Psychosomatics*, *36*(3), 267-275.

Hamilton, M. (1959). The assessment of anxiety states by rating. *British Journal of Medical Psychology, 32,* 50-55.

Hamilton, M. (1960). A rating scale for depression. *Journal of Neurology, Neurosurgery, and Psychiatry*, *23*(1), 56.

Harper, K. M. (2014). An investigation of an internet-based cognitive behavioral therapy program for auditory hallucinations.DP - 2014. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, *75*(4-B(E)), No Pagination Specified.

Hartley, S., Barrowclough, C., & Haddock, G. (2013). Anxiety and depression in psychosis: a systematic review of associations with positive psychotic symptoms. *Acta Psychiatrica Scandinavica*, *128*(5), 327-346.

Higgins, J. P., & Green, S. (2008). *Cochrane handbook for systematic reviews of interventions*. Retrieved March 2024 from https://training.cochrane.org/handbook

Higgins, J. P., Li, T., & Deeks, J. J. (2019). Choosing effect measures and computing estimates of effect. *Cochrane Handbook for Systematic Reviews of Interventions*, 143-176.

Jongeneel, A., Libedinsky, I., Reinbergen, A., Tromp, N., Delespaul, P., Riper, H., van der Gaag, M., & van den Berg, D. (2022). Momentary effects of Temstem, an app for voice-hearing individuals: Results from naturalistic data from 1048 users. *Internet Interventions*, *30*, 100580.

Jongeneel, A., van Veen, S. C., Scheffers, D., Riper, H., van den Hout, M. A., van der Gaag, M., & van den Berg, D. (2020). Linguistic dual tasking reduces emotionality, vividness and credibility of voice memories in voice-hearing individuals: Results from a controlled trial. *Schizophrenia Research*, *216*, 249-254.

Kane, J. M. (1996). Treatment-resistant schizophrenic patients. *The Journal of Clinical Psychiatry*, *57*, 35-40.

Kay, S. R., Fiszbein, A., & Opler, L. A. (1987). The positive and negative syndrome scale (PANSS) for schizophrenia. *Schizophrenia Bulletin*, *13*(2), 261-276.

Kip, H., Kelders, S. M., Weerink, K., Kuiper, A., Brüninghoff, I., Bouman, Y. H., Dijkslag, D., & van Gemert-Pijnen, L. J. (2019). Identifying the added value of virtual reality for treatment in forensic mental health: a scenario-based, qualitative approach. *Frontiers in Psychology*, *10*, 406.

Lakens, D. (2013). Calculating and reporting effect sizes to facilitate cumulative science: a practical primer for t-tests and ANOVAs. *Frontiers in Psychology*, *4*, 62627.

Launay, G., & Slade, P. (1981). The measurement of hallucinatory predisposition in male and female prisoners. *Personality and Individual Differences*, *2*(3), 221-234.

Leff, J., Williams, G., Huckvale, M. A., Arbuthnot, M., & Leff, A. P. (2013). Computer-assisted therapy for medication-resistant auditory hallucinations: Proof-of-concept study. *The British Journal of Psychiatry*, *202*(6), 428-433.

Liang, N., Li, X., Guo, X., Liu, S., Liu, Y., Zhao, W., Wen, Y., Li, Y., Li, F., Wu, H., Li, J., Li, Q., Guo, J., & Xu, Y. (2022). Visual P300 as a neurophysiological correlate of symptomatic improvement by a virtual reality-based computer AT system in patients with auditory verbal hallucinations: A Pilot study. *Journal of Psychiatric Research*, *151*, 261-271.

Lopez-Luengo, B., & Muela-Martinez, J. A. (2016). Preliminary study of a rehabilitation program based on attentional processes to treat auditory hallucinations. *Cognitive Neuropsychiatry*, *21*(4), 315-334.

Lovibond, P. F., & Lovibond, S. H. (1995). *Manual for the depression anxiety stress scales (2nd Ed.)*. Psychology Foundation.

Ludtke, T., Platow-Kohlschein, H., Ruegg, N., Berger, T., Moritz, S., & Westermann, S. (2020). Mindfulness Mediates the Effect of a Psychological Online Intervention for Psychosis on Self-Reported Hallucinations: A Secondary Analysis of Voice Hearers From the EviBaS Trial. *Frontiers in Psychiatry*, *11*, 228.

Meyerowitz-Katz, G., Ravi, S., Arnolda, L., Feng, X., Maberly, G., & Astell-Burt, T. (2020). Rates of attrition and dropout in app-based interventions for chronic disease: systematic review and meta-analysis. *Journal of Medical Internet Research*, *22*(9), e20283.

Morosini, P., Magliano, L., Brambilla, L. a., Ugolini, S., & Pioli, R. (2000). Development, reliability and acceptability of a new version of the DSM-IV Social and Occupational Functioning

Assessment Scale (SOFAS) to assess routine social funtioning. *Acta Psychiatrica Scandinavica*, *101*(4), 323-329.

Murray, R. M., Quattrone, D., Natesan, S., Van Os, J., Nordentoft, M., Howes, O., Di Forti, M., & Taylor, D. (2016). Should psychiatrists be more cautious about the long-term prophylactic use of antipsychotics? *The British Journal of Psychiatry*, *209*(5), 361-365.

Overall, J. E., & Gorham, D. R. (1962). The brief psychiatric rating scale. *Psychological Reports*, *10*(3), 799-812.

Peters, E. (2014). An oversimplification of psychosis, its treatment, and its outcomes? *The British Journal of Psychiatry*, *205*(2), 159-160.

Petersen, A. (2018). *Digital health and technological promise: A sociological inquiry*. Routledge.

Philippe, T. J., Sikder, N., Jackson, A., Koblanski, M. E., Liow, E., Pilarinos, A., & Vasarhelyi, K. (2022). Digital health interventions for delivery of mental health care: systematic and comprehensive meta-review. *JMIR Mental Health*, *9*(5), e35159.

Pinto, A., Gigantesco, A., Morosini, P., & La Pia, S. (2007). Development, reliability and validity of a self-administered questionnaire on subjective opinion about delusions and voices. *Psychopathology*, *40*(5), 312-320.

Rafieifar, M., Hanbidge, A. S., Lorenzini, S. B., & Macgowan, M. J. (2024). Comparative Efficacy of Online vs. Face-to-Face Group Interventions: A Systematic Review. *Research on Social Work Practice*, *32*(1), 13–31.

Rich, E., Miah, A., & Lewis, S. (2019). Is digital health care more equitable? The framing of health inequalities within England's digital health policy 2010–2017. *Sociology of Health & Illness*, *41*, 31-49.

Rogers, E. S., Chamberlin, J., & Ellison, M. L. (1997). Measure empowerment among users of mental health services. *Psychiatric Services*, *48*(8), 1042-1047.

Rosenberg, M. (2015). *Society and the adolescent self-image*. Princeton University Press.

Rus-Calafell, M., Ehrbar, N., Ward, T., Edwards, C., Huckvale, M., Walke, J., Garety, P., & Craig, T. (2022). Participants' experiences of AVATAR therapy for distressing voices: a thematic qualitative evaluation. *BMC Psychiatry*, *22*(1), 356.

Rus-Calafell, M., Garety, P., Sason, E., Craig, T. J., & Valmaggia, L. R. (2018). Virtual reality in the assessment and treatment of psychosis: a systematic review of its utility, acceptability and effectiveness. *Psychological Medicine*, *48*(3), 362-391.

Schneider, L. C., & Struening, E. L. (1983). SLOF: a behavioral rating scale for assessing the mentally ill. *Social Work Research and Abstracts*, *19*(3), 9-21.

Shawyer, F., Ratcliff, K., Mackinnon, A., Farhall, J., Hayes, S. C., & Copolov, D. (2007). The voices acceptance and action scale (VAAS): Pilot data. *Journal of Clinical Psychology*, *63*(6), 593-606.

Smith, L. C., Mariegaard, L., Vernal, D. L., Christensen, A. G., Albert, N., Thomas, N., Hjorthøj, C., Glenthøj, L. B., & Nordentoft, M. (2022). The CHALLENGE trial: the effects of a virtual reality-assisted exposure therapy for persistent auditory hallucinations versus supportive counselling in people with psychosis: study protocol for a randomised clinical trial. *Trials*, *23*(1), 773.

Sommer, I. E., Slotema, C. W., Daskalakis, Z. J., Derks, E. M., Blom, J. D., & van der Gaag, M. (2012). The treatment of hallucinations in schizophrenia spectrum disorders. *Schizophrenia Bulletin*, *38*(4), 704-714.

Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of Internal Medicine*, *166*(10), 1092-1097.

Stefaniak, I., Sorokosz, K., Janicki, A., & Wciorka, J. (2019). Therapy based on avatar-therapist synergy for patients with chronic auditory hallucinations: A pilot study. *Schizophrenia Research*, *211*, 115-117.

Strauss, C., Thomas, N., & Hayward, M. (2015). Can we respond mindfully to distressing voices? A systematic review of evidence for engagement, acceptability, effectiveness and mechanisms of change for mindfulness-based interventions for people distressed by hearing voices. *Frontiers in Psychology*, *6*, 140400.

Svarstad, B. L., Chewning, B. A., Sleath, B. L., & Claesson, C. (1999). The Brief Medication Questionnaire: a tool for screening patient adherence and barriers to adherence. *Patient Education and Counselling*, *37*(2), 113-124.

The EuroQol Group. (1990). EuroQol-a new facility for the measurement of health-related quality of life. *Health Policy*, *16*(3), 199-208.

Thomas, B., Ciliska, D., Dobbins, M., & Micucci, S. (2004). A process for systematically reviewing the literature: providing the research evidence for public health nursing interventions. *Worldviews on Evidence-Based Nursing*, *1*(3), 176-184.

Thomas, N., Bless, J. J., Alderson-Day, B., Bell, I. H., Cella, M., Craig, T., Delespaul, P., Hugdahl, K., Laloyaux, J., & Larøi, F. (2019). Potential applications of digital technology in assessment, treatment, and self-help for hallucinations. *Schizophrenia Bulletin*, *45*(Supplement_1), S32-S42.

Van der Gaag, M., Valmaggia, L. R., & Smit, F. (2014). The effects of individually tailored formulation-based cognitive behavioural therapy in auditory hallucinations and delusions: a meta-analysis. *Schizophrenia Research*, *156*(1), 30-37.

Van Lieshout, R. J., & Goldberg, J. O. (2007). Quantifying self-reports of auditory verbal hallucinations in persons with psychosis. *Canadian Journal of Behavioural Science*, *39*(1), 73.

Veritas Health Innovation. (2024). *Covidence systematic review software*. Available at www.covidence.org.

Wallace, C. J., Liberman, R. P., Tauber, R., & Wallace, J. (2000). The independent living skills survey: a comprehensive measure of the community functioning of severely and persistently mentally ill individuals. *Schizophrenia Bulletin*, *26*(3), 631-658.

Waters, F., Allen, P., Aleman, A., Fernyhough, C., Woodward, T. S., Badcock, J. C., Barkus, E., Johns, L., Varese, F., & Menon, M. (2012). Auditory hallucinations in schizophrenia and nonschizophrenia populations: a review and integrated model of cognitive mechanisms. *Schizophrenia Bulletin*, *38*(4), 683-693.

Westermann, S., Ruegg, N., Ludtke, T., Moritz, S., & Berger, T. (2020). Internet-based self-help for psychosis: Findings from a randomized controlled trial. *Journal of Consulting and Clinical Psychology*, *88*(10), 937-950.

Yung, A., Phillips, L., McGorry, P., Ward, J., Donovan, K., & Thompson, K. (2002). Comprehensive assessment of at-risk mental states (CAARMS). *University of Melbourne, Department of Psychiatry, Personal Assessment and Crisis Evaluation Clinic, Melbourne, Australia*.

A Grounded Theory Exploration of How Voice-Hearers Relate to their Voices Socially: A Mentalisation Theory Perspective

Williams, L.J[*1,2], Millar, A.,[2] and Griffiths, H.[1]

[1] School of Health in Social Science, University of Edinburgh, Edinburgh, UK

[2] NHS Lothian

Abstract

Objectives

The aim of this study was to explore how voice-hearers relate to their voices socially from a mentalisation theory perspective, while considering the role of characterisation.

Design

A social constructivist grounded theory approach was used (Charmaz, 2014) to develop an understanding of the social processes involved when voice-hearers relate to their voices.

Method

Seven voice-hearers were recruited from a psychiatric rehabilitation team and community mental health teams. They were interviewed about their relationship with their voices. Voice-hearing severity and distress was additionally evaluated using the Psychotic Symptom Rating Scale (PSYRATS; Haddock et al., 1999). Participants were also interviewed about their early attachment relationships using the Adult Attachment Interview (AAI; George et al., 1996). Interviews were then hand transcribed and coded according to grounded theory processes. The AAI was coded for reflective functioning scores using the Reflective Functioning Scale coding manual devised by Fonagy et al. (1998).

Results

The core category of the theory developed was that voice-hearers relate to their characterised voices as they would 'real' people. The core process through which they do this was by *Trying to Understand* the voice, with 2 categories influencing the core processes: *1) Ascribing Agency* and *2) Making Comparisons.* Seven subcategories were also constructed: *1) Evidence of Realness, 2) Characterisation, 3) Affective Experience, 4) Changing over time and place, 5) Social Comparison, 6) Goal Congruency, 7) External Relationships.* These factors related to participants' overall understanding of their voice and the valence of their relationship. Most of the participants were coded on the lower end of reflective functioning capacity scale, suggesting difficulties with mentalising about their attachment relationships; it was therefore not possible to consider whether this impacted voice relationship dynamics, but people did appear to ascribe mental states to their voices.

Conclusion

Ascribing an identity and a sense of realness to the voice contributes to how the person understands their voice and how to relate to them. People also understand their voices through how congruent they are with them, with the other voices and with their external social world.

Keywords: Auditory Hallucinations, Voice-Hearing, Voice Characterisation, Personification, Mentalisation, Attachment

Introduction

The Hearing Voices Movement, pioneered through the work of Romme and Escher (1989), reframed our understanding of the phenomenon of auditory hallucinations (AH) or 'hearing voices' from the traditional biomedical perspective conceptualisation as a hallucination to be eradicated, to understanding the personal meaning of the voice to the voice hearer (Corstens et al., 2014). Miller et al. (1993) have demonstrated that voice-hearers can experience their voices as reducing social isolation, while Jackson et al. (2011) have described voice-hearers developing close and trusting relationships with their voices. Qualitative explorations of voice-hearers' narratives have allowed greater understanding of the uniqueness and variation of these experiences. In their interviews of 10 voice-hearers, Mawson et al. (2011) considered the extent to which these voices reflect external relationships and the impacted on the voice-hearer's sense of self. Furthermore, Chin et al. (2009) discussed how voice-hearers engage in the process of personification, or defining the character ascribed to their voices, and identified how voice-hearers considered their position compared to the voice in terms of control and power. The phenomenon of characterisation and perspective of people's voices as interactive agents has become increasingly established (Alderson-Day et al., 2021; Wilkinson & Bell, 2016), as well as the understanding that voices can be social entities (Alderson-Day & Fernyhough, 2016). As of yet, there has not been an in-depth exploration of how voice-hearers socialise with these characterised agents. The current study aims to explore voice-hearers' perspectives of the processes individuals undertake when socialising with their voices as characterised entities.

Understanding Voices

Voices have been understood through a cognitive perspective where an individual's beliefs about their voices' power, purpose and identity influences the distress they cause (Chadwick & Birchwood, 1994; Close & Garety, 1998). Chadwick and Birchwood (1994) also suggest that typically the voice-hearer believes that the voices are sentient beings that interact with deliberate intent, and tend to be seen as more powerful than the voice-hearer.

Voices have also been understood through relational frameworks, with several theories emerging to describe this (Benjamin, 1989; Birtchnell, 1996; Gilbert & Allan, 1998; Hayward et al., 2011). Benjamin (1989) suggested that people's relationships with their can be understood through reciprocal processes, such as responding to actions perceived as hostile from the voice with hostility, or submitting to actions perceived as controlling. She proposed that voice-hearers have personally coherent relationships with their voices, and these can reflect their external world, such as echoing interactions with their family, and that at times voice relationships can be more fulfilling than reality. Thomas et al. (2009) found that 29 of the 32 'clusters' of interpersonal behaviour described by Benjamin's (1974) model could be applied to interpersonal behaviour with voices as meaningfully as their external relationships. They found that appraisals of voice hostility predicted reciprocal hostile responses however perceptions of voice control only had weak associations with voice-hearer submission (Thomas et al., 2009). However, the sample size in this study was small, and comprised largely of presentations considered more chronic, which may limit the applicability of these findings.

Birtchnell (1996, 1999) proposed that relating to voices occurs on two axes: power (lower or upper) and proximity (close and involved, or distant and separate). Sorrell et al. (2010) reported that distancing oneself from the voice is associated with increased distress. Hayward (2003) found that relating to significant others and to voices can follow similar patterns on these dimensions, and may result from voice-hearers' impoverished experiences of social relationships and therefore limited repertoire. Comparably, Gilbert and Allan (1998)'s social rank theory suggests that humans will either dominate or subordinate others to manage competition for resources, and that people develop perceptions of their position in the hierarchy. They suggested that a person that perceives themselves as submissive and their voice as dominant will be compelled to comply with their commands. Birchwood et al. (2000) confirmed that voice-hearer and voice relationships are congruent with their external social network, but with greater differentials of power and rank for voice relationships, favouring the voice.

Hayward et al. (2011) argued that our understanding is expanding from cognitive models that conceive voices as a sensory stimulus that the voice-hearer holds assumptions about, to understanding voices through an interpersonal framework, as a personified entity, that the voice-hearer has a relationship with (Deamer & Hayward, 2018). Hayward (2003) suggests that there appear to be parallels between individuals' representations of social relationships and how they interpret their voices, and it has been suggested that voices can indicate a person's life history and how they relate to their social world (Beavan, 2011).

Voices as Social Agents

Voices have been described as having speech-like qualities; being meaningful to the voice-hearer; and having a distinct 'person-like' identity that is, being 'personified' or 'characterised' (Anthony, 2004; Ward et al., 2022). A survey completed by Woods et al. (2015) found that around 70% of people who hear voices associate them with 'characterful qualities'. Recent studies describe personified voices as having specific character traits such as gender, intentions, beliefs, agency (the voice causing outcomes) and personal experiences (Alderson-Day et al., 2021; Edwards et al., 2023).

Wilkinson and Bell (2016) have argued that how voices are represented as agents can support our understanding of how and why they occur. They suggest that there is a spectrum of agency with degrees of depth: absent agency (nonverbal auditory hallucinations); agency without individualisation (utterances not identified as from a specific person); internally individualised identity (anonymous but specific agents e.g. unknown old woman, or voices with an internally generated name e.g. 'Simon'); and externally individualised identity (voices with specific identities linked to the outside world). The authors suggest that we have a natural drive to represent agents and in certain circumstances to represent specific agents that remain consistent over time. Alternatively, Nayani and David (1996) have posited that AHs become more complex over time and that new, more pleasant voices may develop over time that offset the effects of the distressing voices. However, Alderson-Day et al. (2021) found complex personification at the point of first clinical contact, and there therefore does not appear to be an association with time (Ward et al., 2022).

Alderson-Day et al. (2021) interviewed voice-hearers accessing Early Intervention in Psychosis services, exploring the properties that people reported with their voices. They found that around 40% of their participants reported complex personification, or voices that appear to have more than one person-like quality, and that this appears to be associated with experiencing voices as companiable. Participants also reported other senses associated with the voices, such as visual, olfactory and feeling a presence with the voice. However, the authors identified a limitation of their study was the lack of generalisability to more chronic presentations.

Attachment and Voices

Attachment Theory (Ainsworth et al., 2015; Bowlby, 1969) posits that our early relationships, which are determined by our caregiver's responsiveness to us, influence our adult interpersonal styles and distress regulation strategies through our internal representations about the self and others in relationships. Individuals that grow up with responsive caregivers develop secure attachment styles and this is associated with greater ability to self-soothe and to form attachments with others, and more positive self-image. Conversely, people that grow up with inconsistent or intrusive primary attachment figures are more likely to develop an insecure-anxious attachment style that is associated with worse self-image and fearing rejection. Likewise, if the caregiver is consistently critical or neglectful, people may develop an insecure-avoidant attachment style, that is associated with avoidance of relationships and negative beliefs about others (Crowell & Treboux, 1995; Shaver & Mikulincer, 2002).

Associations between attachment and psychosis are now well established, including how a person's attachment style influences their voice-hearing experience. Gumley et al. (2014) determined that roughly 50% of people with first episode psychosis could be classified as having an avoidant attachment style, and 31% could be classified as unresolved (relating to a loss). While a recent systematic review undertaken by Carr et al. (2018) found a 76% prevalence of insecure attachment styles in individuals with psychosis, compared to 38% in non-clinical samples. Berry et al. (2012) found small but significant associations between attachment anxiety and voice-hearing severity and distress, but no association for attachment avoidance. While Ponizovsky et al. (2013) also found a relationship between anxious attachment and distress, in addition they found a relationship between attachment avoidance and distress. However, this study used separate measures of hallucinatory symptomatology and distress, while Berry et al. (2012) specifically measured voice-hearing distress using the Psychotic Symptom Rating Scale (PSYRATS; Haddock et al., 1999; PSYRATS; Haddock et al., 2011). Berry et al. (2012) have suggested that more extensive interviewing to understand people's relationships with voices might give an indication of how people understand their rejection, criticism, and threats.

Mentalising

Mentalising, operationalised as reflective functioning (RF), refers to a person's ability to understand their own and others' mental states and how these impact on cognitions, emotions and behaviour (Fonagy et al., 2002). There is some overlap between the concepts of mentalising and 'theory of mind' (ToM) in the literature (Katznelson, 2014), as both refer to attributing mental states to explain and predict behaviour (Sprong et al., 2007), but with mentalising being more concerned with affective states (Fonagy et al., 2018). ToM has been found to be impaired in people diagnosed with schizophrenia (Brüne, 2005; Frith, 1992). Mentalising ability is thought to emerge in the context of secure attachment (Fonagy et al., 2002; Meins et al., 1998) and Weijers et al. (2018) have linked childhood abuse to an impaired or delayed development of mentalising in non-affective psychosis. Weijers et al. (2018) also found an association between severity of childhood abuse and levels of positive and negative symptoms of psychosis, and that the relationship between childhood abuse and negative symptoms was partly mediated by mentalising impairment. Stress or arousal is an additional factor that determines mentalising capacity, and therefore can fluctuate in response to threat (Luyten & Fonagy, 2015).

Debbané et al. (2016b) posit that self-mentalising, or mentalising of one's own mental states and bodily sensations moderates the risk of developing psychosis. They theorise that for individuals who are clinically at risk for psychosis, insecure attachment styles may impact on neurobiological pathways that support self-mentalising. As such, they may be less able to detect bodily signals and so may misattribute internal stimuli to external sources, resulting in the development of positive symptoms. This corresponds with earlier cognitive theories that conceive voices as internally generated events misinterpreted as from an external source (Bentall, 1990). However, a correlation between mentalising and severity of positive and negative symptoms has not been demonstrated (MacBeth et al., 2011; Weijers et al., 2018). It must be noted that existing models of psychosis and mentalisation have tended to suggest general associations and present research has not yet demonstrated the mechanism of how mentalising capacity influences the expression of specific symptoms.

MacBeth et al.'s (2011) study of RF in psychosis, found that the RF scores of participants with first episode psychosis were comparable to the scores of individuals with other severe mental health difficulties (Fonagy et al., 1996). MacBeth and colleagues (2011) found that RF was lower for people with an insecure-avoidant attachment style than those with an insecure-anxious style, however they did not find a relationship between psychotic symptomatology and RF. Fonagy and Allison (2013) have argued that capacity for mentalising is fundamental in developing relationships, and this has been found to be impaired in people with mental health difficulties. Achim et al. (2012) demonstrated that mentalising was impaired in participants with first episode psychosis, specifically when mentalizing social interactions, but their study mainly focused on emotional mental states rather than understanding intentions or beliefs. Wilkinson and Bell (2016) have argued that theory of mind is a 'higher-order function of successful agent representation', as an individual agent must first be represented to be able to attribute beliefs, desires and intentions to it. They suggest that difficulties representing an agent are likely to 'cascade up' to theory of mind deficits.

Study Rationale

The recent movement towards relational approaches to understanding voices has led to the development of psychological therapies aiming to address the relationship between hearer and voice, such as Relating Therapy (Hayward et al., 2017), AVATAR therapies (Craig et al., 2018; Ward et al., 2020) and Talking with Voices (Longden et al., 2021a). The overall aim of such interventions is to support the voice-hearer to develop a more harmonious relationship with their voice through dialogues between the voice-hearer, the voice and the therapist, to reduce the distress they cause. The Talking with Voices therapy involves the development of a formulation that includes the voice identity, characteristics and the voice-hearer's significant life events (Longden et al., 2021a).

A recent element of the AVATAR therapy trial found a significant association between identifying the voice as a highly characterised social agent with increased voice engagement both during the therapy and in everyday life (Ward et al., 2022). Edwards et al. (2023) evaluated the use of the Voice Characterisation Checklist in the AVATAR trial to assess degree of voice characterization amongst trial participants. They found that that a large proportion of their sample reported voices that were personified to some degree, and assert that developing a greater understanding of characterisation, including how voice-hearers understand their voice's thought and intentions, can support meaning-making. They also suggested that future work might benefit from considering potentially related concepts such as theory of mind.

There is a growing body of literature exploring voice characterisation. Recent studies have suggested that this influences frequency of engagement with their voices (Edwards et al., 2023; Ward et al., 2022), and that people distinguish personified voices by their ability to provide companionship, rather than their commanding qualities or connection with trauma (Alderson-Day et al., 2021). This suggests that there are factors relating to characterisation that play a role in how people relate to their voices. As greater emphasis is being placed on the role of voice-hearers' relationship with their voice, not just the beliefs they hold about them (Hayward et al., 2011), it becomes increasingly important to understand the process of how people relate to their characterised voices.

Given recent findings and development around how voice-hearers personify their voices and ascribe agency to them, this study is the first to explore this from the perspective of mentalisation theory. As such, the presented study is an exploration that seeks to provide an initial investigation of how people relate to their voices as characterised agents.

The following research questions were considered:

1. How do people relate to their voices as social agents?
2. Does mentalising capacity influence how people relate to their voices?

Method

Design

This study was interested in developing an in-depth understanding of people's relationships with their voices, specifically exploring *how* their voices are perceived as having active agency, *how* individuals socialise with their voices, and *how* those relationships are negotiated. As the focus of this research was developing an in-depth understanding of this area, qualitative methodology was considered most appropriate (Corbin & Strauss, 2014).

Grounded Theory methodology (GT; Charmaz, 2014; Glaser & Strauss, 1967; McLeod, 2011) allows theory to be derived in previously unexplored areas, it also allows the researcher to develop explanations of dynamic social processes (Willig, 2001). While Glaser and Strauss (1967)'s grounded theory advises that the researcher remain a 'blank slate' while conducting the research, Charmaz (2014) acknowledges the influence of the researcher's preconceptions and experiences in the research process and that they are co-constructing social realities with participants. As the research involved a relational scope, and was influenced by an understanding of mentalisation theory, a constructivist GT approach was deemed most appropriate.

Ethics

The University of Edinburgh provided sponsorship for the study. Approvals were granted by the South East Scotland Research Ethics Committee (REC number: 23/SS/0019) and by NHS Lothian Research and Development. It was subsequently logged with the School of Health in Social Science Ethics Committee (Appendix 11).

Participants and Recruitment

Mental Health services were contacted within the local NHS Health Board to provide them with information about the study, with the researcher visiting teams within the locality and providing them with posters (Appendix 6) and participant information sheets (PIS; Appendix 4). NHS care providers were asked to refer participants that met the inclusion criteria and who gave consent to provide the researcher with their contact information. The inclusion criteria were: Over 16 years of age; an English speaker; have heard a voice that others do not at least once per week, for at least 6 months; have a diagnosis of a schizophrenia or psychosis spectrum disorder, or an affective disorder with psychotic symptoms. Exclusion criteria for the study included: A primary diagnosis of a substance disorder; lacking capacity to give consent; a hearing impairment that impaired ability to participate; or the client being on the researcher's clinical caseload.

The researcher then contacted potential participants to explain the study in greater detail, confirm that they met the study criteria and that they were interested in taking part. If the participant did not already confirm receipt of this from the referring clinician and the participant was interested in research participation, the researcher posted a PIS to them. After the participant had the PIS for at least 24 hours, the researcher contacted them again to confirm willingness to take part and agree the location or format for the interview preferred by the participant.

At the initial meeting, the researcher first consented the participants by ensuring that they had understood the study materials, had the opportunity to ask questions and had capacity to consent. At this stage the participant was reminded that they could withdraw at any time, until their data had been transcribed and coded. Written informed consent was then obtained.

Individuals were recruited from the mental health rehabilitation service and community mental health services (CMHTs). Seven people agreed to participate in the study (five men and two women), ranging from 33 to 60 years of age. Of the 14 participants approached, two reported no longer hearing voices at screening, three declined to participate, and two found it difficult to focus on the screening questions and information regarding the study, and it was unclear whether they had the capacity to provide informed consent.

Table 1. Participants' demographic information and RF scores. *Names or potentially identifiable details have been pseudonymised.

Participant	Gender	Ethnicity	Marital status	Age	Years hearing voices	Referral Source	PSYRATS-AH Total	RF Score (Category)	Main Voice Description and Agency Type*
1	Male	White Scottish	Single	36	15	Rehab Inpatients	21	1 (Lacking in RF)	'Daniel' and Grandad. Voices. Characterised with clear identities and intentions.
2	Male	White Scottish	Single	33	11	Community Rehabilitation	33	1 (Lacking in RF)	Unidentified voices with unclear intentions.
3	Male	White Scottish	Single	46	28	CMHT	32	5 (Ordinary RF)	Unidentified voices with distinct pgott.
4	Male	White Scottish	Single	41	21	Rehab Inpatients	33	1 (Lacking in RF)	Jesus, that has been two different Jesuses at different times. Characterised.
5	Female	White Scottish	Married	59	24	Rehab Inpatients	33	0 (Negative RF)	Bob is the main voice (when she is at home). Clear intentions, character and appearance.
6	Female	White Scottish	Single	60	39	CMHT	37	1 (Lacking in RF)	The Doctor, named Tom. Clear intentions and personality.
7	Male	Scottish Traveller	Single	40	14	Rehab Inpatients	21	1 (Lacking in RF)	Mum (but not real world mum). Clear intentions, but less clear personality.

Procedure

Semi-structured interviews were used to allow the researcher to follow themes of interest (Charmaz, 2014). The primary interview was comprised of questions relating to individual's social relationship with their voice, and included adapted questions from the Adult Attachment Interview (AAI; George et al., 1996). These adaptations involved changing AAI questions from asking about early attachment figures, to asking about their voice, such as *"Can you give me 5 adjectives that describe your relationship with your voice?"* and *"Have your feelings about any abuse or unpleasant things the voice has said changed over time?"*. Two additional interviews were carried out including the AAI and the PSYRATS-AH (Haddock et al., 1999).

The PSYRATS-AH (Haddock et al., 1999) is a subscale of the PSYRATS that is a standardised semi-structure interview measure for assessing the severity and distress of auditory hallucinations. Answers provided by the interviewee are scored on a scale from 0-4 (absent to more severe) and provides an overall total score out of 44. There are no suggested cut-off scores for the PSYRATS, however Haddock et al. (1999) presented the median total score as 28, based on 71 participants with schizophrenia. The PSYRATS has demonstrated excellent test and inter-rater reliability, and validity (Haddock et al., 1999). In this study, the PSYRATS-AH was used to observe comparisons between participants on their reporting of distress and severity on a standardised measure, and whether similar comparisons could be made with how they described relating to their voices in the interview.

The AAI (George et al., 1996) is an 18 question semi-structured interview that asks participants to reflect on their early attachment relationships with their caregivers (Hesse, 1999) and to consider how they responded to emotional or physical hurt and sickness and how their caregiver responded. They are also asked about their experiences of rejections and threats related to discipline. RF values were coded from the AAI by HG from the Reflective Functioning Scale coding manual (Fonagy et al., 1998). Coding involves following standardised criteria to rank participants' answers to specific demand questions that encourage mentalisation, for example *why do you think your parents behaved the way they did?"* within the AAI, and scores are ranked from '-1' (negative RF) to '9' (Exceptional RF). Individual ratings and the entire transcript are then considered to produce an overall RF score that also ranges from -1 (negative RF) to 9 (exceptional RF). Fonagy et al. (1996) reported the mean RF ratings for psychiatric inpatients (N=82) and a control group (N=85), which were 3.7 (SD=1.8) and 5.2 (SD=1.5) respectively. The RF scale has demonstrated adequate inter-rater reliability but good discriminant validity (Fonagy et al., 1998). RF scores were used to compare scores and how participants described their relationships with their voices. The AAI (George et al., 1996) transcripts were also coded, but more broadly, by incident or segment to gain an overall sense of participants' external relationships.

Full interviews schedules lasted between 52minutes and 1hr 46minutes. The interview was audio-recorded and then hand-transcribed verbatim by the researcher to remain close to the data (Halcomb and Davidson, 2006). Transcripts were then pseudonymised by the researcher. Grounded Theory methodology (Charmaz, 2014; Glaser & Strauss, 1967) involves the researcher keeping memos during the interview process and including this in the analysis. When interviewing initial participants, the researcher followed lines of enquiry that were of interest. Data coding and analysis were conducted simultaneously with data collection which allowed themes to be explored during subsequent interviews. For example, the interviewer noted in her memos and initial coding that participants were describing goals their voices had, and so subsequent participants were asked specifically about this.

NVivo version 14 computer software was used to support coding and data analysis. Line by line coding of the main interview was initially utilised to ensure nuances in the data were not excluded. Initial codes were descriptive, action codes (or gerunds), that were compared to observe similarities and differences between codes and participants, emerging as patterns in the data. In the second phase, focused coding was used to begin synthesising the data and identify emerging, more abstract, themes. During this process categories were constantly reviewed, compared and refined, considering which could be encapsulated into other categories. At this stage, the core categories began to become more apparent. In the final phase theoretical coding took place. This involved constant comparison of the more abstract concepts that have been emerging within the data, and considering the relationship between these themes to construct a broader theoretical explanation. In constructivist GT, a core category is developed that provides an abstract explanation of the study data and outlines key processes (Charmaz, 2014).

Reflexivity Statement

As discussed, the researcher's own context and preconceptions shapes their enquiry and failure to acknowledge reflexibility can impact the knowledge derived from the research (Olmos-Vega et al., 2023). According to Walsh (2003) there are four overlapping and interacting dimensions to be considered: personal, methodological, contextual and interpersonal. The researchers reflexivity statement that considers these dimensions is recorded in *Appendix 3.*

Quality assurance

The researcher used the GT Framework for Novice Researchers produced by Chun Tie et al. (2019) to confirm adherence GT methodology. According to this framework the quality of GT research is underpinned by three areas: the researcher's expertise and research skills; using congruent methodology for the research question; and procedural precision in method utilisation (Birks & Mills, 2015). The first of these three areas were supported by regular academic supervision with HG, with whom emerging themes were discussed, as well as GT processes. Chun Tie et al. (2019) suggest that second of the three areas is described as achieved when the philosophical position of the researcher is congruent with the research question. A social constructivist (Charmaz, 2014) approach was used in this study, and the theoretical stance of the researcher involved acknowledgment of prior experience of voice-hearing literature, and that the theory is constructed by the researcher who views the data their own particular lens (Birks & Mills, 2015). The final condition of the framework involved ensuring procedural precision. The researcher adhered to the methodology outlined by Charmaz (2014) and maintained memos and academic meeting records to provide an audit trail (Chun Tie et al., 2019).

Results

The core category constructed from this study about how voice-hearers relate to their voices socially is that they do so as they would with 'real people'. Some voice-hearers explicitly stated this early in the interview process, explaining that the way that they respond to voices is just as they would respond to people in the external world:

> *"Eh, it's just having a relationship with her, but I don't see her. That's the only difference, because she's in my life."* - P7

For participants, because their voices are so real, it made it hard to make a distinction between these and the voices that others might hear as well. For example, participants also described their non-characterised voices as sounding like people shouting at them from a distance. Participant 3 described hearing voices at different ranges, but treating them like relationships he has with real people and thinking of it as like a 'network of telepathy'.

> *"All the voices say different things. They're... I- I just treat them like people that are communicating with me from a distance."* – P3

For this participant, it made sense to him to understand hearing the realistic, unseen voices as a telepathic network. It also explained why some voices might sound more distant, and others might sound closer.

The core process through which people relate to their voices as 'real people' is by *Trying to Understand* the voice, with 2 categories influencing the core processes: *1) Ascribing Agency* and *2) Making comparisons.* Seven further subcategories grounded in the data were identified: *1) Evidence of Realness 2) Characterisation (and social network) 3) Affective Experience 4) Changing over time and place 5) Voice Social Comparison 6) Goal Congruency 7) External Relationships.*

Table 2. Model of GT for How People Relate to their Voices.

	Categories Influencing Core Process →	
Core Process ↓	*Ascribing Agency*	*Making Comparisons*
Trying to Understand	**Subcategories**	
	Evidence of realness	Changing over time and place
		Voice Social Comparison
	Characterisation (& Social Network)	Goal Congruency
	Affective Experience	External Relationships

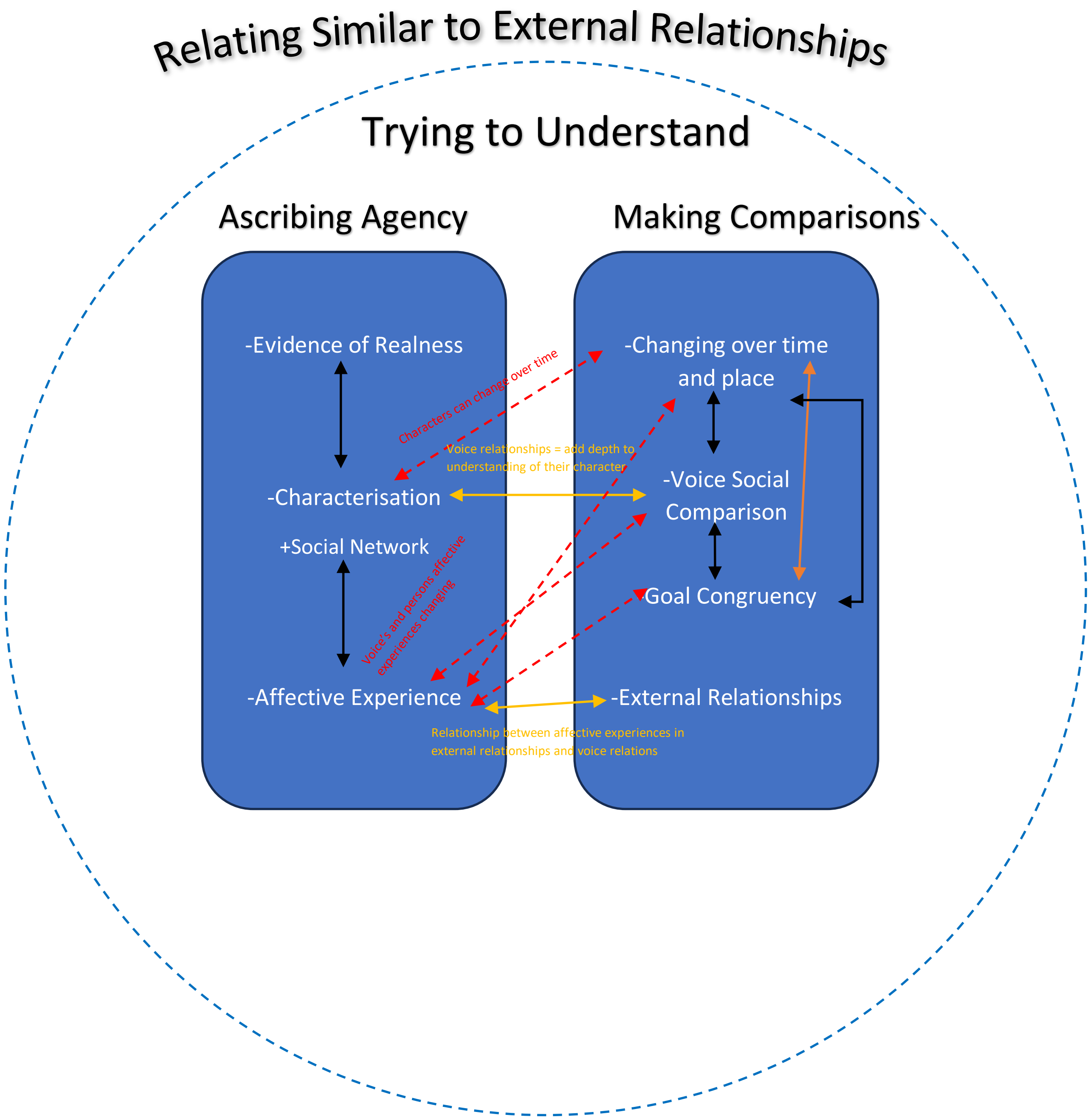


Figure 1. Diagrammatic Representation of a GT Model of How People Relate to their Voices Socially.

Trying to Understand

Trying to understand is a core process for making sense of voices in a relational context through factors that involves process that can be broadly categorised as *ascribing agency* and *making comparisons.* Agency is ascribed to explain the voice's perceived ability to manifest changes in the outside world, that is seen as *evidence of realness,* who that voice is to them and what it wants through *characterisation*. Attempts are also made to understand the *affective experience* of that voice, that influences how they approach the voice. Participants' voices also engaged in interactions with their own *social networks* of other voices. How their main voices interacted with other voices, as well as how these voices described them, influenced how they were understood. Participants also tried to understand their voices by *making comparisons* between their characterised voice and the other voices they hear, as well as how their voice treats other people and voices. Participants also compared their voices' motivations and interests with their own; how their relationship with their voice is now to how it was before; and implicitly or explicitly with other relationships in their life.

Ascribing Agency

Efforts to understand their voices were bolstered by the ascribing of agency to those voices, through seeing them as characterised entities with their own thoughts, desires and interests. People could try to understand their voices interests in a way that helped them to understand what their voices derived from the relationship:

> *"I tell him stories and he's writing books, short books. He's making money out of it. Out of the things I told him when I was dreaming."* -P5

For participant 3, who did not have a main voice, different voices could get in contact for different reasons:

> *"What's important to them? I don't know, uh, it depends again on which voices. Um, it varies between the voices. Uh, just having company from a distance is, for some of them, advice, getting advice."*

He also made it clear that the voices are the ones that make the choice to contact him:

> *"Well, I don't, I don't actively seek out voices because I, they're always seeking me out." -P3*

By understanding their voice's raison d'etre, participants were clearer on whether voices had their best interests at heart; were merely passing the time with them; or were using them to make money, as with participant 5. Participant 1 found himself questioning his voices' motivations, that they only want to make him feel '67% better' to ultimately make him stronger:

> *"So they come through and make me feel really good, but they're just doing what God's telling them to do to make me stronger." - P1*

For participant 1, this helped him to understand why his voices made him feel good, but why they did not seem to work that hard at this all the time. This could also be interpreted as his attempts to find a purpose for him remaining in hospital. For other participants, their voices' agency also manifested in their ability to influence them and the world around them: by making them ill, or sending them dreams, and through their physical presence:

"And he has special powers because he's given me psoriasis and seen my- I had cancer, you know, things like that. I know it sounds daft, but I always believe him." -P6

The ability of her voice to manifest changes made participant 6 concerned about real consequences if she did not obey it, which contributed to her experience of dominance in their relationship, while for participant 2, having strange dreams was explained by his voices sending them to him. In this way, ascribing agency to the voices also helped participants to make sense of difficult life experiences.

Overall, ascribing agency to their voice not only helped participants to understand their respective relationship roles, but to find an explanation for difficult life events.

Evidence of Realness

Participants ascribing agency to their voices also provided them with evidence of the voices' real ability to be an actor on the external world, at times by causing them harm, or by being physically present in some way. All the participants reported either explicitly the realness of their voice-hearing experiences (three participants); or implicitly through the voice having a tangible impact on them (five participants) or having seen the voices 'in person' (five participants). They reported seeing the voice 'in person' at certain points, but without the opportunity to really 'meet' them.

"Yeah, I've seen him on Facebook." – P1

Three of these participants reported believing or hoping that they will one day meet the voice, or expressed that this was something that the voice wanted, but they did not.

"I ask her why I'm no allowed to see her. I did see her at the window when I was in the single room. In the-the window behind us." – P7

These experiences of 'almost' meeting the voice, or seeing them around but not face-to-face provided participants with evidence that their voices are real people that they have real relationships with. For these participants, their voices existed physically in the world somewhere, but they could never quite meet them. One participant reported olfactory evidence of the voice near her house, while two other participants reported the experience of their voices physically touching them:

"Eh, it's weird, it makes it more realistic, because I can physically feel being touched and stuff like that." – P7

Participant 7 also described being cuddled by his voice, and suggested that this helps him to feel closer to her. For both participants 4 and 7, their main voices were distinguished as being real by what they can do that their non-characterised voices cannot. For example, participant 7 was able to get rid of his other voices at times, but never his main voice. Whereas participant 4 noted that his voice was real because he could also see it:

> *"Mine isn't just a voice, it's a face too. It's a mouth that moves, you know.*
> ***Interviewer: Yeah.***
> *Participant: A voice cannae… A voice isn't real, you know. It's invisible."* – P4

For these participants, their characterised voices are almost made more real by their physical presence in comparison to their non-characterised voices without this. This perhaps reflects that participants' relationships with their main voices can have so much depth, that in trying to understand this phenomenon it almost makes more sense that they *are* real, but just out of reach, than that they are not.

Characterisation

Six of the participants reported experiencing characterised voices to various degrees. Five participants experienced voices with fixed and clear identities, while one experienced many voices with their own personalities but with no defined identity:

> *"Well, there's some that are nicer than others, some more threatening. Just like anybody there's a wide variety of people [2 second pause]. Though they're all different personalities…."* – P3

Two participants experienced voices that were characterised as family members, but not their own family members that exist as real people. One voice was described as Jesus (participant 4) and was ascribed characteristics that one might expect the real-world Jesus to exhibit, both in his appearance, having a *"crown of thorns on his head",* and in having a *"lovely"* personality. Another participant's voice had taken on the identity of a Doctor that she had met in person at a difficult time in her life (participant 6), and another was a misogynistic, hairy man named Bob.

Only participant 2 found it difficult to describe details about the voice he heard, and struggled to establish whether it was a single or multiple voices, at times describing the voice as 'he' at other times 'they'. At times he identified the voice's tone as being sarcastic, and said that he thought their reason for speaking to him might be about having nothing better to do. He reported that they constantly changed their minds, saying 'yes then no', and described that what they say to him 'puzzles his head'. He described asking them questions about their reasons for what they say and do, and that they will never give a clear answer. Despite ongoing attempts to understand his voices' intentions, he was unable to elicit a clear answer from them.

Six of the participants experienced their voices as having their own social network, that could comprise other voices with varying degrees of characterisation themselves. Three participants experienced voices that had their own network of characterised voices including family members and the Disciples. Their voices might have their own children, brothers, mothers and had their own relationships with them:

> *"No, they seem quite happy married. She takes the children to her brother's." – P5*

Within the voice-to-voice relationships, they might have fights, talk about the participant, or struggle to be heard over each other when trying to talk to the participant. Other participants' 'main voices were able to control or interact with other voices within the network, but these voices did not have clear identities. Only participant 2 thought he had just one voice, but was not entirely sure.

Participants were generally able to communicate with the other voices within the network, or at least heard them, but did not describe their relationship with them in detail. Participant 5 also heard her voice's wife, but did not describe speaking back to her directly in the interview. Most participants did not generally describe having relationships with the other voices in the network, and they mostly seemed to be in the background, as an adjunct to the character of the main voice, with fewer efforts made by participants to understand their mental states. However, as participants were mostly asked about their main voices, this may be a result of the questions used. Only participant 1 mentioned two main voices that were given equal status, but he indicated that he had more voices that we did not discuss. The voices' social network almost set them up as a comparison or frame of reference for the main voice, which is discussed later in the *social comparison* subcategory.

Overall, it appeared that ascribing characterisation of the voice supported participants to develop a greater understanding of who their voice was; personality traits they might exhibit; when and why they started hearing them; and what they might want. The voices' social networks added further depth to their characterisation, also supporting the sense of voice relationships as 'real', with their own realistic relationships and lives outside of their relationship with the voice-hearer.

Affective experience

When ascribing agency to their voices, some participants also described their voices as having emotions that supported them to understand their voice, and in some cases how to respond to them. Four participants in the sample reported their voices experiencing their own emotional states in response to their actions. One participant described anticipating that treating his voices rudely would result in rudeness in return, and being aware that different voices can respond differently to the same content:

> *"…And I'm educating other ones, which I presume are younger voices, um, I usually explain to the ones, cos somebody might jump in and say 'oh that's a bit patronising' and I'm like 'aye, maybe to you but it's not to everybody'"– P3*

Some participants' voices appeared to care for them, and have their best interests at heart, while others' voices prioritised their own desires over the wellbeing of the voice-hearer. Two participants described understanding their voices' mental states by the care or love that they afforded. This appeared to support them wanting to spend time with the voices, and resulted in a more positive relationship:

> *"I spend a lot of time with the voices you know. It's not a bad thing you know, I know they love me and they just want what's best for me, you know."* – P1

While another participant's main voices responded with happiness when it achieved a long-term goal of getting her to move out of the house it wanted:

> ***"Interviewer: Have you ever noticed emotional change in Bob?***

Participant: Eh, he seemed happy when I was moving out.

Interviewer: Oh, okay. How did you know he was happy?

Participant: Because he didn't keep on and on."- P5

Participants reported that they could ascertain their voices' emotions through the content of what their voices said, but also possibly through a quality or change in how the voice sounded:

"Participant: Well, it depends. Some of them are quite crass and say 'fuck off'. Other ones are politer about it [laughs].

Interviewer: And do they get upset about it, do you think?

Participant: It sounds like they get upset about it." -P3

Most participants were able to explain their voices' emotional experience, whether that was negative or positive, changing or static. Almost all the participants could also provide reasons for why they thought their voice might feel that way. However, while participant 2 was able to explain that he experienced his voices as negative, and was unable to explain why he thought this might be:

"I'm not sure. They're always negative, I don't know why." P2

While another participant described feeling empathy for the difficulties the voice is experiencing, which she considered herself to be responsible for:

"Well, I saw him once, a bus stop and he looked quite upset…I can understand and I sympathise with him, you know, all the problems I've caused him, and I feel sorry for him in that respect." – P6

Six participants also experienced their voices as responding to their own emotions, in either positive or negative ways. Voices were seen as choosing to respond to participants' lower moods with sympathy or by trying to make the situation worse. Participant 4 described his voice trying to 'get at him' when he felt upset; while, participant 3 noted that his voices were able to understand that he felt sad, and could either respond with sympathy, or respond by taking advantage of this:

"Uh, well they might be more sympathetic if I'm sad. Or other ones, if I'm feeling sad, there might be other ones that take advantage of it to uh, to take advantage of. I dunno, to take advantage of it." -P3

Only participant 2 described his voices as seeming the same, regardless of how he was feeling. Positive responses included providing supportive statements in response to them feeling unwell (participant 1) or trying to suggest they go somewhere quiet to calm down (participant 3).

Overall, participants were able to understand what their voices were feeling, and generally were able to guess why this might be. This suggests that participants were able to mentalise for their voices in a sense, they were able to notice how their voices might feel, and how their voices related to them, and most were able to try to find an explanation for this, or to empathise. In other words, people respond to their voices in a similar way to how they do in in-person relationships: they judge emotions from tone and content; they make assumptions; they think about whether this is a response to their own behaviour; and they consider how the voices feel about them. Also, similarly to external relationships, there are voices that take advantage, and there are voices that respond with kindness.

Making Comparisons

The second category that influences the core process of *trying to understand* was *making comparisons.* People made comparisons: between the voice's aspirations and their own; to identify changes in the relationship or in the voices; and between different voices; and between external relationships and their voice relationships. This process of comparison-making appeared to impact the valence of voice-hearers' relationships with their voice. For example, when voices had similar aspirations or enjoyed similar hobbies, participants tended to feel closer to them than if they had mismatching agendas.

The process of making comparisons led participants to make judgements about the voices. Participants compared voices that they heard in different locations, some having 'in hospital' voices, and voices in different parts of the city, that might present different dialogue. Some participants voices had changes over time, generally becoming less hostile and perceived as more trustworthy. Participants also compared the different relationships they were aware of: current voice to themselves versus past voice to themselves; voice to other voice, voice to themselves versus voice-to-external-other; and self to external other versus self to voice.

Goal Congruency

Five of the participants described their voice as having an overarching goal or purpose that they were aiming to achieve that involved the voice-hearer. Three of the voice-hearers were amenable to these goals and the others were reluctant or in opposition to these goals. Participant 4 described his role being to arise at the end of days to fight alongside the voice and that he is an important part of these plans:

> *"Achieve these things, yeah, that's right. That's why he relies on me so much. He needs me, so it can only happen through me." – P4*

Voices seemed to have their own aspirations that were at times congruent with the desires and aspirations of the voice-hearer, and sometimes not. The goals described were not easily achievable, and many of them involved a requirement to meet with the voice first. Participant 7 described a goal that he was amenable to, describing it as '*a goal my mum's got for me'.* This was that his voice would physically work on him to send him back to being a baby, so that he can be born again as who the voice wants him to be. While he told me that while he did not have a choice in this, he did not mind.

More incongruent goals included a voice that wanted participant 5's property, and wanted to publish a book of her dreams. She vehemently described herself and her voice as very different people, with very different goals. Similarly, participant 6 was reluctant about her voice's ultimate goal for them to be a couple, that also involved her working for him, which would result in the ultimate 'dream' coming true (participant 6):

"Like if I spoke to him, everything would, eh, 'The Dream' would come live and we'd be together and... But then I think, well, do I want that?" – P6

The goals voices had also contributed to how participants understood their relationship, with participant 7 trying to live up to his voice 'mum's' expectations, participant 6 understanding that her voice was seeking out romantic relationships and participant 5 seeing her voice as wanting to take things from her. In some ways, even if voices' aspirations were perceived by participants as incongruent, they perhaps resonated with participants' own desires in ways they were not explicitly aware of. Participant 6 described missing out on a fulfilling romantic relationship, and participant 7 reported having a difficult relationship with his biological mother. For participants 1 and 4, their voices' goals involved them being important in some way, which, while they felt a degree of pressure from the voice, this was also a higher purpose for them.

Two participants did not specify particular goals, although one saw his voices as valuing the company that he provided, while the other was unable to establish the voice's aims, which often appeared to lead to confusion in the relationship:

"I'm not really sure, I think [8 second pause] I'm not really sure what it wants from me." P2

This participant did not really consider their discourse with their voice a relationship at all.

The voice's overall goal factored into participants assessment of 'who' that voice is in comparison to themselves. Those who were amenable to the voice goals, or who felt their voices supported and would be part of their own goals seemed to have more harmonious relationships with their voices than those who did not have a sense of what the voice wanted, or felt reluctant to align themselves with the voices' goal.

Four participants described sharing activities and interests with their voices, such as enjoying a television show together, discussing politics or both enjoying discussing money-making opportunities. These activities were considered positively, even for participants that viewed the overall relationship as negative. Sharing goals, similarities or hobbies seemed to support more positive interactions with their voices, and supported greater alignment between voice-hearer and voice.

Changing over time and place

All participants' relationships with their voices were dynamic, with many participants reporting increasing trust in their voices over time, or reflecting on how they themselves have changed and how this changed their relationship with their voice. All of the participants had heard voices for at least 10 years, therefore it is perhaps unsurprising that this relationship would change over time.

"Yeah, I mean not at first, he was an enemy at first for quite a few years. He was an enemy." – P4

Four of the participants reported that their voices themselves could be completely different. Two participants reported that their voices changed with their location, one participant reporting that each different region of the city contained different voices, while another had 'hospital' voices and voices at home. Two other participants reported that there were multiple versions of the same voice. Participant 4 reported that there had been two versions of his voice and participant 7 that his voice was constantly 'killing' off one version of the voice and replacing it, accompanied by a process of learning to trust the voice again. While participant 2 reported that he was hearing different things so often, that this made it difficult to draw any conclusions:

"Like he changes his mind all the time, I hear stuff, different stuff all the time so, it's hard to like pin it all on what it could be." -P2

Participants were constantly trying to understand the shifting sands of their dynamics with the voice: why the voice could treat them differently at different times; or why they hear different voices in different places; or why the voice frequently changed its mind.

Social Comparison

The six participants with characterised voices described more than one voice interacting with one another. As discussed, voices might have their own family and friends that they interact with. Participants tried to understand their voice's personality based on what other voices say about them:

"Well, what I always say is everyone thinks he's a lovely guy, a nicer guy you couldn't meet, but that isn't the relationship I have with him. I mean, he's not nice to me, you know?" – P6

Equally, voices could be understood by their relationship with other voices, for example, for participant 5, Bob treated his wife badly, and this played into her perception of him as a misogynist. While for participant 4, Jesus and his Disciples were at peace with each other, which likely fit with his perception of Jesus, however, Jesus was not always as kind about the voice-hearer's family. While others compared their relationship with some voices to their relationship with other voices:

"Well, he's just the same age as me and we've got a lot more in common than me and 'Grandad' do. We've got a lot to try to talk about." – P1

For participant 1, he related to 'Grandad' more like an older person and to Daniel more like a younger person. In this way, the comparison of their characterisations also played into their understanding of how to interact with the voice. Similarly, participant 3 tried to pitch his advice differently depending on the age he thought different voices might be.

Their personal relationship with their voices was also defined by the voice's behaviour to the voice-hearer compared to other people, or other voices. Two participants described assumptions that their voices had relationships with other people, whereas others viewed themselves as the main or sole focus of the voice. Participant 4 reported feeling angry that his voice will say unpleasant things about his family, but will not say anything about staff or patients' families:

"Participant: …naebody else's family is mentioned, you know.

Interviewer: So, it's just yours? And how does that make you feel then?

Participant: It makes me feel raging at times. I think it's no fair, and I think if Jesus [inaudible] he knows the staff in here, he knows the patients." – P4

Three participants made comparisons between their main, characterised voice and their other voices with absent characterisation. For one participant, that he could get rid of his non-characterised voices, but could not seem to get rid of the main voice, added to the 'realness' of his main voice:

"They're- they're not real. I can ground them down, I can't ground my mum down. I can kill them off, I've tried to kill my mum off, but I cannae kill my mum off." – P7

For participant 6, the main voice was able to send the non-characterised voices to do things for them.

Comparing various aspects of the voices to its social network appeared to add depth to their experience of the voice, and contributed to the process of meaning-making and understanding that participants engaged in.

External Relationships

Some participants experienced relationships with their voices that paralleled their early attachment relationships, whereas others described having very opposite experiences with their voices. Participants that reported less nuanced parental relationships in their AAI interviews appeared to understand their voice relationship in quite black-and-white terms, such as participant 1 who described a purely fun and caring relationship with both his voices and his parents, however struggled to report examples of this. Participant 2 similarly described his relationship with his parents only in positive terms and found it very difficult to provide words to describe this relationship, using the same adjectives to describe his relationship with both parents. However, he described his relationship with his voices as uniformly negative. He also found it very difficult to provide examples of why he described having a positive relationship with his parents. Participant 7 had experienced different attachment figures throughout childhood, and it was not always clear which parental figure he was referring to, while his voice that he called 'Mum' was constantly killing off the previous 'mum' voice and replacing it. It might be that this experience of his voice mum constantly changing mirrors his experience of instability of attachment figures in his childhood, without his specific recognition of this. He reported responding emotionally to this at first, but eventually indicated that he was able to see the funny side of it:

"Participant: I used to cry, now I smile.

Interviewer: What changed?

Participant: It was ridiculous, there was about 50 mums, all taking over." – P7

Other participants explicitly identified that their relationships with their voices followed similar patterns to other relationships in their lives. At times this recognition appeared to arise during the interview:

"And, I noticed that as I was talking, the correlation between the Doctor and my parents." – P6

Another participant identified that her relationship with her voice was similar to that of a previous romantic relationship:

*"**Interviewer: Does your relationship with Bob compare to other relationships in your life at all?***

Participant: Eh, no. Maybe one person.

Interviewer: In what way?

Participant: Someone I was in a relationship with. It was a [5 second pause] bad relationship. He was abusive, abusing me." – P5

People's relationships with their voices may reflect their past relationships, with two participants being aware of this comparison during the interview process. While participant 5 reflected that her voice reminded her of an abusive former romantic partner, she described incidents of violence from her father, while describing their relationships as good. This may suggest some difficulty in being able to accurately reflect on the complexity of this relationship, or coping with these threatening memories. Participant 3 was able to describe a more nuanced relationship with his parents, and to reflect on this, and equally reported being able to respond differently to voices depending on what they said, or how old he thought they were.

Participants capacity for reflection on their relationship with their parents varied greatly, with some participants unable to label their relationship with their parents as negative, despite describing difficult situations with them. This could reflect the ways in which participants have been able to make sense of their complex childhood relationships, and potentially ways they found to cope with challenging parental relationships. It could also be a result of reluctance to portray their parents negatively to an interviewer that they did not know well in a non-therapeutic setting. This may suggest difficulties with mentalising that originate in difficult childhood experiences, and make it more difficult to understand their relationship with the voice, or may reflect a response to feeling under threat while still living in a hospital setting.

Reflective Functioning

AAI transcripts were coded using Fonagy et al. (1998)'s Reflective Functioning Scale coding manual and a final RF score was determined (see Table 1). We were interested in observing whether there were any differences between people's relationships with their voices with varying capacity for mentalising. Most of the participants received low RF scores, suggesting lacking or absence of RF, which suggests that they did not demonstrate any significant mentalising of their early attachment relationships. One participant demonstrated a low RF score (5 – questionable), and while this participant did appear to have varied relationships with the voices, and to be able to consider that different voices might respond differently, he did not have a main voice with which his overall relationship could be considered. As it was not possible to group participants by their RF scores, we were not able to explore voice relationship differences on this basis.

PSYRATS-AH Scores

Participants' PSYRATS-AH scores ranged from 21 to 37, with participants 1 and 7 receiving lower scores of 21. These participants also used mainly positive adjectives to describe their relationship with their main voices, such as 'fun', 'happy', 'caring' and feeling that their voices loved them. Participant 6 received the highest score of 37, and described her relationship with her voice quite negatively, such as 'controlling', 'unhappy' and 'abusive'. Participants 2, 4 and 5 scored 33 and participant 3 scored 32 but their relationship descriptions did not bear any particular similarity, with participants 2 and 5 reporting very difficult relationships with their voices, and participants 3 and 4 having more mixed relationships.

Discussion

Overall, this study builds on findings in the existing literature, that people relate to their voices in similar ways to the way they relate to other people. Hayward (2003) suggests that if relating to voices is influenced by real world relationships, we might expect that voice relationships will be imbued with all the complexity of external relationships. This current study appears to demonstrate this complexity, in that their voices appeared to respond emotionally and have their own agendas, and that some participants might modify their responses based on this, and that most participants reported the realness of their voices. Furthermore, participant's relationship with their voices seemed to mirror past external relationships, which might reflect patterns of relating of relating to others that generalises to voices. These patterns of relating can play out in different ways, with some having some awareness of similarities in their relating patterns, and others implicitly rejecting any comparison.

This exploratory grounded theory model suggests that, to relate to their voices socially, people make persistent attempts to understand their voices, through ascribing agency to make sense of who this voice is, what it might want, and looking for evidence of the voice's influence on the external world. Participants also tried to make sense of their voices through making comparisons of congruency: between their main voice and other voices, between the external relationships and ones with their voice, between the voices' aspirations and their own and with their previous and current relationship with the voice.

Participants ascribing agency to their voices has been noted in the existing literature. Many voice-hearers describe their voices as though they are independent agents that are experienced as social entities (Alderson-Day & Fernyhough, 2016). Voices can behave in ways that are perceived as due to independent agency, and are experienced with a sense of ‘otherness’ as though the voices are generated externally to oneself (Leudar & Thomas, 2005). In this study, voices exhibited agency through having distinct identities, that incorporated relationships with other voices; through physically acting upon the external world, or being experienced with multiple senses; and by having their own affective experiences and intentions. Shiel et al. (2022) described similar findings in their linguistic analysis of the transcripts of interviews with their participants. Their participants also reported voices’ physical effects on their bodies, movement through space and exhibition of varied behaviours. Their participants described voices arguing, bullying, following and hurting them. However, the authors did not consider the effect these manifestations of agency had on how voice-hearers related to their voices. Previous literature has largely described relating to voices in terms of dominant and submissive forms of power and over-dependence (Benjamin, 1989; Hayward, 2003), and while participants ascribed agency to their voices in ways that suggested the voices had power and dominance, this was just one aspect of the relationship.

Within this study, participants constantly underwent multiple processes of comparison that could be both implicit and explicit. Participants compared their voices’ intentions and goals to their own, social comparisons between voices and between external the external social world made, as well as temporal and geographical comparisons. As Gilbert et al. (1995) have discussed, social comparison is ubiquitous and comes in many forms in human and non-human relationships. They observed that social comparison is key in terms of judging similarity of values, goals, plans, status and personality, and that to an extent this leads to the formation of socially prescribed alliances. They argue that social comparison has an evolutionary basis and can be pairwise (one individual compared to another); triangular (competing to develop a preferential relationship with another); and group (comparisons of the self to a group, or one group to another). The findings of the current study may highlight similar social comparisons occur in participants interactions with their voices. Furthermore, in keeping with Chadwick et al. (1996)’s cognitive approach to voices, the comparisons that people made contributed to the beliefs about the identity and meaning of their voices that they developed, and this in turn impacted how they engaged with their voices.

Participants experience of voice characterisation conforms with existing literature in this area, describing degrees of characterisation and agency consistent with research from Wilkinson and Bell (2016). Alderson-Day et al. (2021) reported that around 40% of their sample experienced ‘complex personification’, and in this study, six out of the seven participants described complex characterisation in their voices. It has been suggested that there is an association between complex personification and experiencing voices as more conversational and companiable. Indeed, the participant that experienced the least personified voice expressed that he did not consider his experience of this voice ‘a relationship’.

Over 50% of the participants in this study reported multi-sensory experiences of their voice. Alderson-Day et al. (2021) described participants voices as also having sensory characteristics, such as producing visual and olfactory hallucinations or felt presence. Voice-hearers also reported experiencing bodily changes associated with the voice. In the present study, participants associated these experiences as evidence of the realness of the voice. For some, these experiences also appeared to map onto the concept of voice 'power', with this providing evidence to participants of voice's ability to inflict harm (Birchwood et al., 2000), such as the ability to cause illness. For one participant, the same ability the voice had to physically change his body, was the same ability that allowed it to cuddle him.

All the participants reported hearing multiple voices, usually with one characterised main voice among others without agency. This reflects the spectrum of agency that participants' voices could be placed on, with some voices being more richly represented as agents, as described by Wilkinson and Bell (2016). There appeared to be differences in social ranking in between the voices (Gilbert & Allan, 1998), with the characterised voice 'sending' unidentified voices, or a voice-hearer being able to get rid of less characterised voices, but not the main voice. Future studies might consider understanding how secondary voices influence voice-hearers' understanding of their social rank compared to the voices.

Participants in this study appeared generally to perceive their relationship with their voices more positively over time and described increasing trust between them, even participants with difficult voices relationships described their content as less distressing. Previous studies exploring changes over time in the voice relationship, have suggested that without specific intervention, beliefs about voices are relatively stable and enduring, irrespective of severity (Csipke & Kinderman, 2006). Conversely, Hartigan et al. (2014) found a trend towards decreasing perception of benevolence. Improvements over time in participants' relationships with their voices in this study might result from therapeutic input, as all participants were under the care of mental health services. Romme and Escher (1993) described voice-hearers as moving through three phases, from 'startling' and 'organisation' phases to a 'stabilisation' phase. Whereas Milligan et al. (2013) identified different phases voice-hearer's relationship with their voices over time, fluctuating between rejection and 'recovery, adjustment and coping' to 'new understandings'. Participants in the current study also identified the voice itself as changing, either being replaced by different versions, or different voices being present in different locations. However, this ultimately did not appear to affect the overall relationship with the voice.

Participants reported having either shared or disparate goals with their voices, and those with shared goals appeared generally to have more positive interactions with their voices. Varese et al. (2016) found that 82.5% of their participants reported their voices having goals that thematically matched at least one of their goals. The authors conceptualise voice-hearing a result of extreme distress caused by unresolved conflict about perceived lack of control over personal goals, while Longden et al. (2021a) suggest that the voice's goals serve a protective function. Within the current study, many of the goals expressed by participants were also presented with the barrier of being somewhat fantastical, or achievable only after meeting the voice, which may have presented a source of internal conflict to the individual.

Two participants in the current study made links between their autobiographical experiences and the demeanour of their voice. Recent research has linked people's trauma history and their experience of hearing voices, describing trauma as a shaping force for voice content and its impact psychologically (Van Den Berg et al., 2023). The researchers identified that around 50% linked their voices to a trauma perpetrator, and that the presence of emotional, psychological, behavioural and cognitive response themes from their trauma history was associated with such themes being present in voice phenomenology, however no claims of causality were made. While some participants did not explicitly make these links themselves, there were commonalities between their descriptions of their relationship with their voice and with their early attachment figures, or parallels in the extent of their reflection of these relationships. However, the influence of the researcher's prior expectations cannot be disregarded.

This study aimed to explore whether an individual's relationship with their voice differs by mentalising capacity. In the design of the study outlined in the study protocol, the planned analysis had been to group the codes derived from participants' descriptions of their relationships with their voices by whether participants by RF category (high or low). However, participants' RF scores largely fell in the lower range and therefore no patterns could be identified. This may relate to previous findings that individuals with psychosis tend to have insecure attachment styles, compromised capacity to mentalise (Fonagy et al., 2002; MacBeth et al., 2011), and the association between positive symptoms and deficits in theory of mind (Sprong et al., 2007). Braehler and Schwannauer (2012) found a range of RF scores in their sample, and suggested that their participants reactions to developing psychosis reflected their general ability to mentalise, and that adaptation to illness and development of self are interacting processes. Despite this, some participants reported understanding their voice's intentions, emotions and responses, which corresponds with previous findings (Chin et al., 2009).

Strengths and Limitations

This was the first study that the researcher is aware of that involved an in-depth exploration into people's relationships with their voices, as well as their early attachment figures. While it was not possible to consider voice relationships on the basis of higher or lower RF score, participant's external relationships played a comparative role in how they viewed their relationships with their voices. Future explorations might consider how voice-hearers come to develop an understanding of their voices' mental states, but find this more difficult for their early attachment figures. This study also contributes to an emerging picture of how voice-hearers relate to their voices socially, and how characterisation factors into this.

Due to recruitment challenges, it was not possible to recruit adolescents or as many participants from CMHTs, that might have supported a greater variety of RF scores to analyse. This also meant that perspectives from people with voice relationships of shorter duration might not have been included. However, previous studies on voice-hearers' relationships with their voices have included Early Intervention populations (Alderson-Day et al., 2021) and have reported similar themes in voice relationships. Additionally, most of the participants came from the same ethnic background, which means the perspectives of participants from other cultural backgrounds is not accounted for. It would be beneficial for future research to explore voice-hearers' social relationships with their voices from a mentalisation theory perspective in a diverse population.

Furthermore, five out of the seven participants recruited were men. This is perhaps unsurprising as 60% of those who develop schizophrenia are men (McGrath et al., 2008), and the service from which the majority of participants were recruited had more male wards than female. There may be gender differences between how men and women relate to their voices socially that were therefore not captured in this study. Furthermore, a lack of emotional expression among male participants in qualitative research has been described as pervasive (Addis & Mahalik, 2003). This may therefore have impacted the descriptions of both their relationships with their voices, and their early attachment relationships, which may have impacted the results of this study.

It was considered whether, as most participants had quite chronic presentations, the long-term impact of psychiatric medication could have influenced their RF. However, studies have confirmed the stability of autobiographical memory (Thomson & Jaque, 2022).

Implications for Clinical Practice

Recently, there has been great interest in the development of interventions that address the relationship between the voice and voice-hearer (Craig et al., 2018; Hayward et al., 2017; Longden et al., 2021a; Ward et al., 2020). There is an increasingly accepted understanding that voices can be conceptualised as a dissociative phenomenon, that are shaped by one's unique personal circumstances (Longden et al., 2021b) as a result of trauma (Van Den Berg et al., 2023). This has led to increasing emphasis on deriving a psychological formulation that includes the voice identity, content and significant life events for the voice-hearer (Longden et al., 2021b). Exploring how voice-hearers relate to their voices socially, and what aspects of the voice they consider important can help contribute to a greater understanding of factors that contribute to positive or negative relationships. Supporting voice-hearers to establish shared goals and common ground with their voice might support the development of more positive relationships.

As the experience of voice-hearing and difficulties with RF appear to be closely related (MacBeth et al., 2011; Sprong et al., 2007). It has been suggested that utilising mentalisation-based treatments for psychosis might support recovery or prevent onset in those considered clinically high risk by fostering self and other understanding (Brent et al., 2014; Debbané et al., 2016a). The majority of participants within this study were rated as having low RF, while a previous studies rating RF in adolescents recovering from first-episode psychosis found a wider range of RF scores (Braehler & Schwannauer, 2012). While no firm conclusions can be drawn from the results of this study, this might tentatively suggest that further exploration of voice-hearing and mentalising might be of benefit.

Future Directions

This study potentially points towards the value of further exploring links between mentalising and hearing voices. The findings also raise questions about factors that cause people to reach shared goals with their voices, and how these evolve over time. It also brings into question whether the characterisation that people ascribe to their voices is relatively stable, or whether this changes over time with the relationship. Future studies might observe people's description of voice characterisation longitudinally to determine any changes more accurately.

Conclusion

This model suggests that people make attempts to understand their voices to determine how to relate to them. They do this through ascribing agency by characterisation; looking for evidence that the voice is real; and attributing emotional responses to their voices. They also understand their voices through comparison-making around congruency of goals and hobbies; to other voices and people in their network; and over time.

References

Achim, A. M., Ouellet, R., Roy, M.-A., & Jackson, P. L. (2012). Mentalizing in first-episode psychosis. *Psychiatry Research*, *196*(2-3), 207-213.

Addis, M. E., & Mahalik, J. R. (2003). Men, masculinity, and the contexts of help seeking. *American Psychologist*, *58*(1), 5.

Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. N. (2015). *Patterns of attachment: A psychological study of the strange situation*. Psychology Press.

Alderson-Day, B., & Fernyhough, C. (2016). Auditory verbal hallucinations: social, but how? *Journal of Consciousness Studies*, *23*(7-8), 163-194.

Alderson-Day, B., Woods, A., Moseley, P., Common, S., Deamer, F., Dodgson, G., & Fernyhough, C. (2021). Voice-hearing and personification: characterizing social qualities of auditory verbal hallucinations in early psychosis. *Schizophrenia Bulletin*, *47*(1), 228-236.

Anthony, D. (2004). The cognitive neuropsychiatry of auditory verbal hallucinations: an overview. *Cognitive Neuropsychiatry*, *9*(1-2), 107-123.

Beavan, V. (2011). Towards a definition of “hearing voices”: A phenomenological approach. *Psychosis*, *3*(1), 63-73.

Benjamin, L. S. (1974). Structural analysis of social behavior. *Psychological review*, *81*(5), 392.

Benjamin, L. S. (1989). Is chronicity a function of the relationship between the person and the auditory hallucination? *Schizophrenia Bulletin*, *15*(2), 291-310.

Bentall, R. P. (1990). The illusion of reality: a review and integration of psychological research on hallucinations. *Psychological Bulletin*, *107*(1), 82.

Berry, K., Wearden, A., Barrowclough, C., Oakland, L., & Bradley, J. (2012). An investigation of adult attachment and the nature of relationships with voices. *British Journal of Clinical Psychology*, *51*(3), 280-291.

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*(2), 337-344.

Birks, M., & Mills, J. (2015). *Grounded Theory: A Practical Guide*. Sage.

Birtchnell, J. (1996). *How humans relate: A new interpersonal theory*. Psychology Press.

Birtchnell, J. (1999). *Relating in psychotherapy: The Application of a New Theory*. Praeger Publishers.

Bowlby, J. (1969). *Attachment and loss*. Random House.

Braehler, C., & Schwannauer, M. (2012). Recovering an emerging self: Exploring reflective function in recovery from adolescent-onset psychosis. *Psychology and Psychotherapy: Theory, Research and Practice*, *85*(1), 48-67.

Brent, B. K., Holt, D. J., & Keshavan, M. S. (2014). Mentalization-based treatment for psychosis: linking an attachment-based model to the psychotherapy for impaired mental state understanding in people with psychotic disorders. *Israel Journal of Psychiatry*, *51*(1), 17.

Brüne, M. (2005). “Theory of mind” in schizophrenia: a review of the literature. *Schizophrenia Bulletin*, *31*(1), 21-42.

Carr, S. C., Hardy, A., & Fornells-Ambrojo, M. (2018). Relationship between attachment style and symptom severity across the psychosis spectrum: A meta-analysis. *Clinical Psychology Review*, *59*, 145-158.

Chadwick, P., & Birchwood, M. (1994). The omnipotence of voices: A cognitive approach to auditory hallucinations. *The British Journal of Psychiatry*, *164*(2), 190-201.

Chadwick, P. D., Birchwood, M. J., & Trower, P. (1996). *Cognitive therapy for delusions, voices and paranoia*. John Wiley & Sons.

Charmaz, K. (2014). *Constructing grounded theory: A practical guide through qualitative analysis.* . Sage Publications Inc.

Chin, J. T., Hayward, M., & Drinnan, A. (2009). Relating to voices: Exploring the relevance of this concept to people who hear voices. *Psychology and Psychotherapy: Theory, Research and Practice*, *82*(1), 1-17.

Chun Tie, Y., Birks, M., & Francis, K. (2019). Grounded theory research: A design framework for novice researchers. *SAGE Open Medicine*, *7*, 2050312118822927.

Close, H., & Garety, P. (1998). Cognitive assessment of voices: Further developments in understanding the emotional impact of voices. *British Journal of Clinical Psychology*, *37*(2), 173-188.

Corbin, J., & Strauss, A. (2014). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Sage Publications.

Corstens, D., Longden, E., McCarthy-Jones, S., Waddingham, R., & Thomas, N. (2014). Emerging perspectives from the hearing voices movement: implications for research and practice. *Schizophrenia Bulletin*, *40*(Suppl_4), S285-S294.

Craig, T. K., Rus-Calafell, M., Ward, T., Leff, J. P., Huckvale, M., Howarth, E., Emsley, R., & Garety, P. A. (2018). AVATAR therapy for auditory verbal hallucinations in people with psychosis: a single-blind, randomised controlled trial. *The Lancet Psychiatry*, *5*(1), 31-40.

Crowell, J. A., & Treboux, D. (1995). A review of adult attachment measures: Implications for theory and research. *Social Development*, *4*(3), 294-327.

Csipke, E., & Kinderman, P. (2006). A longitudinal investigation of beliefs about voices. *Behavioural and Cognitive Psychotherapy*, *34*(3), 365-369.

Deamer, F., & Hayward, M. (2018). Relating to the speaker behind the voice: What is changing? *Frontiers in Psychology*, *9*, 312863.

Debbané, M., Benmiloud, J., Salaminios, G., Solida-Tozzi, A., Armando, M., Fonagy, P., & Bateman, A. (2016a). Mentalization-based treatment in clinical high-risk for psychosis: a rationale and clinical illustration. *Journal of Contemporary Psychotherapy*, *46*, 217-225.

Debbané, M., Salaminios, G., Luyten, P., Badoud, D., Armando, M., Solida Tozzi, A., Fonagy, P., & Brent, B. K. (2016b). Attachment, neurobiology, and mentalizing along the psychosis continuum. *Frontiers in Human Neuroscience*, *10*, 406.

Edwards, C. J., Owrid, O., Miller, L., Jafari, H., Emsley, R., Rus-Calafell, M., Craig, T. K., Clancy, M., McLeod, H., & Fornells-Ambrojo, M. (2023). The voice characterisation checklist: psychometric properties of a brief clinical assessment of voices as social agents. *Frontiers in Psychiatry*, *14*, 1192655.

Fonagy, P., & Allison, E. (2013). What is mentalization?: The concept and its foundations in developmental research. In *Minding the child* (pp. 11-34). Routledge.

Fonagy, P., Gergely, G., & Jurist, E. L. (2018). *Affect regulation, mentalization and the development of the self*. Routledge.

Fonagy, P., Gergely, G., Jurist, E. L., & Target, M. (2002). *Affect regulation, mentalization, and the development of the self*. Other Press.

Fonagy, P., Leigh, T., Steele, M., Steele, H., Kennedy, R., Mattoon, G., Target, M., & Gerber, A. (1996). The relation of attachment status, psychiatric classification, and response to psychotherapy. *Journal of Consulting and Clinical Psychology*, *64*(1), 22.

Fonagy, P., Target, M., Steele, H., & Steele, M. (1998). *Reflective-functioning manual version 5 for application to adult attachment interviews*. University College London.

Frith, C. D. (1992). *The cognitive neuropsychology of schizophrenia*. Psychology Press.

George, C., Main, M., & Kaplan, N. (1996). *An adult attachment interview*. Unpublished manuscript, University of California, Berkeley.

Gilbert, P., & Allan, S. (1998). The role of defeat and entrapment (arrested flight) in depression: an exploration of an evolutionary view. *Psychological Medicine*, *28*(3), 585-598.

Gilbert, P., Price, J., & Allan, S. (1995). Social comparison, social attractiveness and evolution: How might they be related? *New ideas in Psychology*, *13*(2), 149-165.

Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory: strategies for qualitative research*. Aldine Publishing Company.

Gumley, A., Taylor, H., Schwannauer, M., & MacBeth, A. (2014). A systematic review of attachment and psychosis: measurement, construct validity and outcomes. *Acta Psychiatrica Scandinavica*, *129*(4), 257-274.

Haddock, G., McCarron, J., Tarrier, N., & Faragher, E. (1999). Scales to measure dimensions of hallucinations and delusions: the psychotic symptom rating scales (PSYRATS). *Psychological Medicine*, *29*(4), 879-889.

Haddock, G., Wood, L., Watts, R., Dunn, G., Morrison, A. P., & Price, J. (2011). The Subjective Experiences of Psychosis Scale (SEPS): psychometric evaluation of a scale to assess outcome in psychosis. *Schizophrenia Research*, *133*(1-3), 244-249.

Hartigan, N., McCarthy-Jones, S., & Hayward, M. (2014). Hear today, not gone tomorrow? An exploratory longitudinal study of auditory verbal hallucinations (hearing voices). *Behavioural and Cognitive Psychotherapy*, *42*(1), 117-123.

Hayward, M. (2003). Interpersonal relating and voice hearing: to what extent does relating to the voice reflect social relating? *Psychology and Psychotherapy: Theory, Research and Practice*, *76*(4), 369-383.

Hayward, M., Berry, K., & Ashton, A. (2011). Applying interpersonal theories to the understanding of and therapy for auditory hallucinations: a review of the literature and directions for further research. *Clinical Psychology Review*, *31*(8), 1313-1323.

Hayward, M., Jones, A., Bogen-Johnston, L., Thomas, N., & Strauss, C. (2017). Relating therapy for distressing auditory hallucinations: a pilot randomized controlled trial. *Schizophrenia Research*, *183*, 137-142.

Hesse, E. (1999). The adult attachment interview: Historical and current perspectives. In J.

Cassidy & P. R. Shaver (Eds.) *Handbook of attachment: Theory, research, and clinical applications, (pp. 395–433). New York: Guilford Press.*.

Jackson, L. J., Hayward, M., & Cooke, A. (2011). Developing positive relationships with voices: A preliminary grounded theory. *International Journal of Social Psychiatry*, *57*(5), 487-495.

Katznelson, H. (2014). Reflective functioning: A review. *Clinical Psychology Review*, *34*(2), 107-117.

Leudar, I., & Thomas, P. (2005). *Voices of reason, voices of insanity: Studies of verbal hallucinations*. Routledge.

Longden, E., Corstens, D., Morrison, A. P., Larkin, A., Murphy, E., Holden, N., Steele, A., Branitsky, A., & Bowe, S. (2021a). A treatment protocol to guide the delivery of dialogical engagement with auditory hallucinations: Experience from the talking with voices pilot trial. *Psychology and Psychotherapy: Theory, Research and Practice*, *94*(3), 558-572.

Longden, E., Corstens, D., Pyle, M., Emsley, R., Peters, S., Chauhan, N., Dehmahdi, N., & Morrison, A. P. (2021b). Engaging dialogically with auditory hallucinations: design, rationale and baseline sample characteristics of the Talking With Voices pilot trial. *Psychosis*, *13*(4), 315-326.

Luyten, P., & Fonagy, P. (2015). The neurobiology of mentalizing. *Personality Disorders: Theory, Research, and Treatment*, *6*(4), 366.

MacBeth, A., Gumley, A., Schwannauer, M., & Fisher, R. (2011). Attachment states of mind, mentalization, and their correlates in a first-episode psychosis sample. *Psychology and Psychotherapy: Theory, Research and Practice*, *84*(1), 42-57.

Mawson, A., Berry, K., Murray, C., & Hayward, M. (2011). Voice hearing within the context of hearers' social worlds: An interpretative phenomenological analysis. *Psychology and Psychotherapy: Theory, Research and Practice*, *84*(3), 256-272.

McGrath, J., Saha, S., Chant, D., & Welham, J. (2008). Schizophrenia: a concise overview of incidence, prevalence, and mortality. *Epidemiologic reviews*, *30*(1), 67-76.

McLeod, J. (2011). *Qualitative research in counselling and psychotherapy*. SAGE Publications Ltd.

Meins, E., Fernyhough, C., Russell, J., & Clark-Carter, D. (1998). Security of attachment as a predictor of symbolic and mentalising abilities: A longitudinal study. *Social Development*, *7*(1), 1-24.

Miller, L. J., O'Connor, E., & DiPasquale, T. (1993). Patients' attitudes toward hallucinations. *American Journal of Psychiatry*, *150*, 584-584.

Milligan, D., McCarthy-Jones, S., Winthrop, A., & Dudley, R. (2013). Time changes everything? A qualitative investigation of the experience of auditory verbal hallucinations over time. *Psychosis*, *5*(2), 107-118.

Nayani, T. H., & David, A. S. (1996). The auditory hallucination: a phenomenological survey. *Psychological Medicine*, *26*(1), 177-189.

Olmos-Vega, F. M., Stalmeijer, R. E., Varpio, L., & Kahlke, R. (2023). A practical guide to reflexivity in qualitative research: AMEE Guide No. 149. *Medical Teacher*, *45*(3), 241-251.

Ponizovsky, A. M., Vitenberg, E., Baumgarten-Katz, I., & Grinshpoon, A. (2013). Attachment styles and affect regulation among outpatients with schizophrenia: Relationships to symptomatology and emotional distress. *Psychology and Psychotherapy: Theory, Research and Practice*, *86*(2), 164-182.

Romme, M., & Escher, S. (1993). *Accepting voices*. MIND Publications.

Romme, M. A., & Escher, A. D. (1989). Hearing voices. *Schizophrenia Bulletin*, *15*(2), 209-216.

Shaver, P. R., & Mikulincer, M. (2002). Attachment-related psychodynamics. *Attachment & Human Development*, *4*(2), 133-161.

Shiel, L., Demjén, Z., & Bell, V. (2022). Illusory social agents within and beyond voices: a computational linguistics analysis of the experience of psychosis. *British Journal of Clinical Psychology*, *61*(2), 349-363.

Sorrell, E., Hayward, M., & Meddings, S. (2010). Interpersonal processes and hearing voices: a study of the association between relating to voices and distress in clinical and non-clinical hearers. *Behavioural and Cognitive Psychotherapy*, *38*(2), 127-140.

Sprong, M., Schothorst, P., Vos, E., Hox, J., & Van Engeland, H. (2007). Theory of mind in schizophrenia: meta-analysis. *The British Journal of Psychiatry*, *191*(1), 5-13.

Thomas, N., McLeod, H. J., & Brewin, C. R. (2009). Interpersonal complementarity in responses to auditory hallucinations in psychosis. *British Journal of Clinical Psychology*, *48*(4), 411-424.

Thomson, P., & Jaque, S. V. (2022). Attachment and memory stability. *Journal of Trauma & Dissociation*, *23*(2), 191-204.

Van Den Berg, D., Tolmeijer, E., Jongeneel, A., Staring, A. B., Palstra, E., Van Der Gaag, M., & Hardy, A. (2023). Voice phenomenology as a mirror of the past. *Psychological Medicine*, *53*(7), 2954-2962.

Varese, F., Tai, S. J., Pearson, L., & Mansell, W. (2016). Thematic associations between personal goals and clinical and non-clinical voices (auditory verbal hallucinations). *Psychosis*, *8*(1), 12-22.

Walsh, R. (2003). The methods of reflexivity. *The Humanistic Psychologist*, *31*(4), 51-66.

Ward, T., Lister, R., Fornells-Ambrojo, M., Rus-Calafell, M., Edwards, C. J., O'Brien, C., Craig, T. K., & Garety, P. (2022). The role of characterisation in everyday voice engagement and AVATAR therapy dialogue. *Psychological Medicine*, *52*(16), 3846-3853.

Ward, T., Rus-Calafell, M., Ramadhan, Z., Soumelidou, O., Fornells-Ambrojo, M., Garety, P., & Craig, T. K. (2020). AVATAR therapy for distressing voices: a comprehensive account of therapeutic targets. *Schizophrenia Bulletin*, *46*(5), 1038-1044.

Weijers, J., Fonagy, P., Eurelings-Bontekoe, E., Termorshuizen, F., Viechtbauer, W., & Selten, J. (2018). Mentalizing impairment as a mediator between reported childhood abuse and outcome in nonaffective psychotic disorder. *Psychiatry Research*, *259*, 463-469.

Wilkinson, S., & Bell, V. (2016). The representation of agents in auditory verbal hallucinations. *Mind & Language*, *31*(1), 104-126.

Willig, C. (2001). *Introducing qualitative research in psychology*. Open University Press.

Woods, A., Jones, N., Alderson-Day, B., Callard, F., & Fernyhough, C. (2015). Experiences of hearing voices: analysis of a novel phenomenological survey. *The Lancet Psychiatry*, *2*(4), 323-331.

Portfolio References

Aali, G., Kariotis, T., & Shokraneh, F. (2020). Avatar Therapy for people with schizophrenia or related disorders. *Cochrane Database of Systematic Reviews* (5).

Achim, A. M., Ouellet, R., Roy, M.-A., & Jackson, P. L. (2012). Mentalizing in first-episode psychosis. *Psychiatry Research*, *196*(2-3), 207-213.

Addington, D., Addington, J., & Maticka-Tyndale, E. (1993). Assessing depression in schizophrenia: the Calgary Depression Scale. *The British Journal of Psychiatry*, *163*(S22), 39-44.

Addis, M. E., & Mahalik, J. R. (2003). Men, masculinity, and the contexts of help seeking. *American Psychologist*, *58*(1), 5.

Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. N. (2015). *Patterns of attachment: A psychological study of the strange situation*. Psychology Press.

Alderson-Day, B., & Fernyhough, C. (2016). Auditory verbal hallucinations: social, but how? *Journal of Consciousness Studies*, *23*(7-8), 163-194.

Alderson-Day, B., Woods, A., Moseley, P., Common, S., Deamer, F., Dodgson, G., & Fernyhough, C. (2021). Voice-hearing and personification: characterizing social qualities of auditory verbal hallucinations in early psychosis. *Schizophrenia Bulletin*, *47*(1), 228-236.

Allan, S., Ward, T., Eisner, E., Bell, I. H., Cella, M., Chaudhry, I. B., Torous, J., Kiran, T., Kabir, T., & Priyam, A. (2024). Adverse Events Reporting in Digital Interventions Evaluations for Psychosis: A Systematic Literature Search and Individual Level Content Analysis of Adverse Event Reports. *Schizophrenia Bulletin*, sbae031.

Anthony, D. (2004). The cognitive neuropsychiatry of auditory verbal hallucinations: an overview. *Cognitive Neuropsychiatry*, *9*(1-2), 107-123.

Armijo-Olivo, S., Stiles, C. R., Hagen, N. A., Biondo, P. D., & Cummings, G. G. (2012). Assessment of study quality for systematic reviews: a comparison of the Cochrane Collaboration Risk of Bias Tool and the Effective Public Health Practice Project Quality Assessment Tool: methodological research. *Journal of Evaluation in Clinical Practice*, *18*(1), 12-18.

Bastien, C. H., Vallières, A., & Morin, C. M. (2001). Validation of the Insomnia Severity Index as an outcome measure for insomnia research. *Sleep Medicine*, *2*(4), 297-307.

Beavan, V. (2011). Towards a definition of “hearing voices”: A phenomenological approach. *Psychosis*, *3*(1), 63-73.

Beavan, V., Read, J., & Cartwright, C. (2011). The prevalence of voice-hearers in the general population: a literature review. *Journal of Mental Health*, *20*(3), 281-292.

Beck, A. T. (1996). *Manual for the Beck Depression Inventory-II*. Psychological Corporation.

Beck, A. T., Baruch, E., Balter, J. M., Steer, R. A., & Warman, D. M. (2004). A new instrument for measuring insight: the Beck Cognitive Insight Scale. *Schizophrenia research*, *68*(2-3), 319-329.

Beck, A. T., Epstein, N., Brown, G., & Steer, R. (1993). Beck Anxiety Inventory manual. *Psychological Corporation.*

Bell, I. H., Nicholas, J., Alvarez-Jimenez, M., Thompson, A., & Valmaggia, L. (2020a). Virtual reality as a clinical tool in mental health research and practice. *Dialogues in Clinical Neuroscience*, *22*(2), 169-177.

Bell, I. H., Rossell, S. L., Farhall, J., Hayward, M., Lim, M. H., Fielding-Smith, S. F., & Thomas, N. (2020b). Pilot randomised controlled trial of a brief coping-focused intervention for hearing voices blended with smartphone-based ecological momentary assessment and intervention (SAVVy): Feasibility, acceptability and preliminary clinical outcomes. *Schizophrenia Research*, *216*, 479-487.

Benjamin, L. S. (1974). Structural analysis of social behavior. *Psychological Review*, *81*(5), 392.

Benjamin, L. S. (1989). Is chronicity a function of the relationship between the person and the auditory hallucination? *Schizophrenia Bulletin*, *15*(2), 291-310.

Bentall, R. P. (1990). The illusion of reality: a review and integration of psychological research on hallucinations. *Psychological Bulletin*, *107*(1), 82.

Berry, K., Wearden, A., Barrowclough, C., Oakland, L., & Bradley, J. (2012). An investigation of adult attachment and the nature of relationships with voices. *British Journal of Clinical Psychology*, *51*(3), 280-291.

Berry, N., Lobban, F., Emsley, R., & Bucci, S. (2016). Acceptability of interventions delivered online and through mobile phones for people who experience severe mental health problems: a systematic review. *Journal of Medical Internet Research*, *18*(5), e121.

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*(2), 337-344.

Birks, M., & Mills, J. (2015). *Grounded theory: A practical guide*. Sage.

Birtchnell, J. (1996). *How humans relate: A new interpersonal theory*. Psychology Press.

Birtchnell, J. (1999). *Relating in psychotherapy: The Application of a New Theory*. Praeger Publishers.

Bowlby, J. (1969). *Attachment and loss*. Random House.

Braehler, C., & Schwannauer, M. (2012). Recovering an emerging self: Exploring reflective function in recovery from adolescent-onset psychosis. *Psychology and Psychotherapy: Theory, Research and Practice*, *85*(1), 48-67.

Brent, B. K., Holt, D. J., & Keshavan, M. S. (2014). Mentalization-based treatment for psychosis: linking an attachment-based model to the psychotherapy for impaired mental state understanding in people with psychotic disorders. *Israel Journal of Psychiatry*, *51*(1), 17.

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, *84*(4), 822.

Brüne, M. (2005). "Theory of mind" in schizophrenia: a review of the literature. *Schizophrenia Bulletin*, *31*(1), 21-42.

Bucci, S., Barrowclough, C., Ainsworth, J., Machin, M., Morris, R., Berry, K., Emsley, R., Lewis, S., Edge, D., Buchan, I., & Haddock, G. (2018). Actissist: Proof-of-concept trial of a theory-driven digital intervention for psychosis. *Schizophrenia Bulletin, 44*(5), 1070-1080.

Buck, B., Nguyen, J., Porter, S., Ben-Zeev, D., & Reger, G. M. (2022). FOCUS mHealth Intervention for Veterans with Serious Mental Illness in an Outpatient Department of Veterans Affairs Setting: Feasibility, Acceptability, and Usability Study. *JMIR mental health*, *9(1) (no pagination)*, Article e26049.

Carr, S. C., Hardy, A., & Fornells-Ambrojo, M. (2018). Relationship between attachment style and symptom severity across the psychosis spectrum: A meta-analysis. *Clinical Psychology Review*, *59*, 145-158.

Chadwick, P., & Birchwood, M. (1994). The omnipotence of voices: A cognitive approach to auditory hallucinations. *The British Journal of Psychiatry*, *164*(2), 190-201.

Chadwick, P. D., Birchwood, M. J., & Trower, P. (1996). *Cognitive therapy for delusions, voices and paranoia*. John Wiley & Sons.

Chadwick, P., Lees, S., & Birchwood, M. (2000). The revised beliefs about voices questionnaire (BAVQ–R). *The British Journal of Psychiatry*, *177*(3), 229-232.

Charmaz, K. (2014). Constructing grounded theory*: A practical guide through qualitative analysis.* Sage Publications Inc.

Chin, J. T., Hayward, M., & Drinnan, A. (2009). Relating to voices: Exploring the relevance of this concept to people who hear voices. *Psychology and Psychotherapy: Theory, Research and Practice*, *82*(1), 1-17.

Chun Tie, Y., Birks, M., & Francis, K. (2019). Grounded theory research: A design framework for novice researchers. *SAGE Open Medicine*, *7*, 2050312118822927.

Clarke, S., Hanna, D., Mulholland, C., Shannon, C., & Urquhart, C. (2019). A systematic review and meta-analysis of digital health technologies effects on psychotic symptoms in adults with psychosis. *Psychosis*, *11*(4), 362-373.

Close, H., & Garety, P. (1998). Cognitive assessment of voices: Further developments in understanding the emotional impact of voices. *British Journal of Clinical Psychology*, *37*(2), 173-188.

Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement*, *20*(1), 37-46.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences (2nd ed.).* L. Erlbaum Associates.

Corbin, J., & Strauss, A. (2014). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Sage publications.

Corrigan, P. (2004). How stigma interferes with mental health care. *American Psychologist*, *59*(7), 614.

Corstens, D., Longden, E., McCarthy-Jones, S., Waddingham, R., & Thomas, N. (2014). Emerging perspectives from the hearing voices movement: implications for research and practice. *Schizophrenia Bulletin*, *40*(Suppl_4), S285-S294.

Craig, T. K., Rus-Calafell, M., Ward, T., Leff, J. P., Huckvale, M., Howarth, E., Emsley, R., & Garety, P. A. (2018). AVATAR therapy for auditory verbal hallucinations in people with psychosis: A single-blind, randomised controlled trial. *The Lancet Psychiatry*, *5*(1), 31-40.

Crowell, J. A., & Treboux, D. (1995). A review of adult attachment measures: Implications for theory and research. *Social Development*, *4*(3), 294-327.

Csipke, E., & Kinderman, P. (2006). A longitudinal investigation of beliefs about voices. *Behavioural and Cognitive Psychotherapy*, *34*(3), 365-369.

Deamer, F., & Hayward, M. (2018). Relating to the speaker behind the voice: What is changing? *Frontiers in Psychology*, *9*, 312863.

Debbané, M., Benmiloud, J., Salaminios, G., Solida-Tozzi, A., Armando, M., Fonagy, P., & Bateman, A. (2016a). Mentalization-based treatment in clinical high-risk for psychosis: a rationale and clinical illustration. *Journal of Contemporary Psychotherapy*, *46*, 217-225.

Debbané, M., Salaminios, G., Luyten, P., Badoud, D., Armando, M., Solida Tozzi, A., Fonagy, P., & Brent, B. K. (2016b). Attachment, neurobiology, and mentalizing along the psychosis continuum. *Frontiers in Human Neuroscience*, *10*, 406.

Dellazizzo, L., Potvin, S., Phraxayavong, K., & Dumais, A. (2021). One-year randomized trial comparing virtual reality-assisted therapy to cognitive-behavioral therapy for patients with treatment-resistant schizophrenia. *NPJ Schizophrenia*, *7*(1), 9.

Department of Health and Social Care. (2022). *A plan for digital health and social care*. Department of Health & Social Care.

Dettori, J. R., Norvell, D. C., & Chapman, J. R. (2022). Fixed-effect vs random-effects models for meta-analysis: 3 points to consider. *Global Spine Journal*, *12*(7), 1624-1626.

Dockery, L., Jeffery, D., Schauman, O., Williams, P., Farrelly, S., Bonnington, O., Gabbidon, J., Lassman, F., Szmukler, G., & Thornicroft, G. (2015). Stigma-and non-stigma-related treatment barriers to mental healthcare reported by service users and caregivers. *Psychiatry Research*, *228*(3), 612-619.

Dodgson, G., Aynsworth, C., Mitrenga, K. J., Gibbs, C., Patton, V., Fernyhough, C., Dudley, R., Ewels, C., Leach, L., Alderson-Day, B., & Common, S. (2021). Managing unusual sensory experiences: A feasibility trial in an at Risk Mental States for psychosis group. *Psychology and Psychotherapy: Theory, Research and Practice*, *94*(3), 481-503.

du Sert, O. P., Potvin, S., Lipp, O., Dellazizzo, L., Laurelli, M., Breton, R., Lalonde, P., Phraxayavong, K., O'Connor, K., Pelletier, J. F., Boukhalfi, T., Renaud, P., & Dumais, A. (2018). Virtual reality therapy for refractory auditory verbal hallucinations in schizophrenia: A pilot clinical trial. *Schizophrenia Research*, *197*, 176-181.

Ebert, D. D., Van Daele, T., Nordgreen, T., Karekla, M., Compare, A., Zarbo, C., Brugnera, A., Øverland, S., Trebbi, G., & Jensen, K. L. (2018). Internet-and mobile-based psychological interventions: applications, efficacy, and potential for improving mental health. *European Psychologist*, *3*(2), 167 -187.

Edwards, C. J., Owrid, O., Miller, L., Jafari, H., Emsley, R., Rus-Calafell, M., Craig, T. K., Clancy, M., McLeod, H., & Fornells-Ambrojo, M. (2023). The voice characterisation checklist: psychometric properties of a brief clinical assessment of voices as social agents. *Frontiers in Psychiatry*, *14*, 1192655.

Ellett, L., Dannahy, L., & Chadwick, P. (2022). Engagement, clinical outcomes and therapeutic process in online mindfulness for psychosis groups delivered in routine care. *Psychology and Psychotherapy: Theory, Research and Practice*, *95*(2), 467-476.

Endicott, J., Nee, J., Harrison, W., & Blumenthal, R. (1993). Quality of Life Enjoyment and Satisfaction Questionnaire: a new measure. *Psychopharmacology Bulletin*, *29*(2), 321-326.

Färdig, R., Lewander, T., Fredriksson, A., & Melin, L. (2011). Evaluation of the Illness Management and Recovery Scale in schizophrenia and schizoaffective disorder. *Schizophrenia Research*, *132*(2-3), 157-164.

Fenigstein, A., & Vanable, P. A. (1992). Paranoia and self-consciousness. *Journal of Personality and Social Psychology*, *62*(1), 129.

Firth, J., & Torous, J. (2015). Smartphone apps for schizophrenia: a systematic review. *JMIR mHealth and uHealth*, *3*(4), e4930.

Flynn, T. N., Huynh, E., Peters, T. J., Al-Janabi, H., Clemens, S., Moody, A., & Coast, J. (2015). Scoring the ICECAP-A capability instrument. Estimation of a UK general population tariff. *Health Economics*, *24*(3), 258-269.

Fonagy, P., & Allison, E. (2013). What is mentalization?: The concept and its foundations in developmental research. In *Minding the child* (pp. 11-34). Routledge.

Fonagy, P., Gergely, G., & Jurist, E. L. (2018). *Affect regulation, mentalization and the development of the self*. Routledge.

Fonagy, P., Gergely, G., Jurist, E. L., & Target, M. (2002). Affect regulation, mentalization, and the development of the self. Other Press.

Fonagy, P., Leigh, T., Steele, M., Steele, H., Kennedy, R., Mattoon, G., Target, M., & Gerber, A. (1996). The relation of attachment status, psychiatric classification, and response to psychotherapy. *Journal of Consulting and Clinical Psychology*, *64*(1), 22.

Fonagy, P., Target, M., Steele, H., & Steele, M. (1998). *Reflective-functioning manual version 5 for application to adult attachment interviews*. University College London.

Freeman, D., Reeve, S., Robinson, A., Ehlers, A., Clark, D., Spanlang, B., & Slater, M. (2017). Virtual reality in the assessment, understanding, and treatment of mental health disorders. *Psychological Medicine*, *47*(14), 2393-2400.

Frith, C. D. (1992). *The cognitive neuropsychology of schizophrenia*. Psychology Press.

Garety, P., Edwards, C. J., Ward, T., Emsley, R., Huckvale, M., McCrone, P., Rus-Calafell, M., Fornells-Ambrojo, M., Gumley, A., & Haddock, G. (2021). Optimising AVATAR therapy for people who hear distressing voices: study protocol for the AVATAR2 multi-centre randomised controlled trial. *Trials*, *22*(1), 366.

Garrido, S., Millington, C., Cheers, D., Boydell, K., Schubert, E., Meade, T., & Nguyen, Q. V. (2019). What works and what doesn't work? A systematic review of digital mental health interventions for depression and anxiety in young people. *Frontiers in Psychiatry*, *10*, 759.

George, C., Main, M., & Kaplan, N. (1996). Adult attachment interview. Unpublished manuscript, University of California, Berkeley.

Gilbert, P., & Allan, S. (1998). The role of defeat and entrapment (arrested flight) in depression: an exploration of an evolutionary view. *Psychological Medicine*, *28*(3), 585-598.

Gilbert, P., Price, J., & Allan, S. (1995). Social comparison, social attractiveness and evolution: How might they be related? *New ideas in Psychology*, *13*(2), 149-165.

Glaser, B., & Strauss, A. (1967). The discovery of grounded theory: strategies for qualitative research. Aldine Publishing Company.

Global Burden of Disease Study. (2019). *GBD Results Tool.* Seattle: Institute for Health Metrics and Evaluation.

Gottlieb, J. D., Gidugu, V., Maru, M., Tepper, M. C., Davis, M. J., Greenwold, J., Barron, R. A., Chiko, B. P., & Mueser, K. T. (2017). Randomized controlled trial of an internet cognitive behavioral skills-based program for auditory hallucinations in persons with psychosis. *Psychiatric Rehabilitation Journal*, *40(3)*, 283-292.

Gottlieb, J. D., Romeo, K. H., Penn, D. L., Mueser, K. T., & Chiko, B. P. (2013). Web-based cognitive-behavioral therapy for auditory hallucinations in persons with psychosis: A pilot study. *Schizophrenia Research*, *145*(1-3), 82-87.

Granholm, E., Ben-Zeev, D., Link, P. C., Bradshaw, K. R., & Holden, J. L. (2012). Mobile assessment and treatment for schizophrenia (MATS): A pilot trial of an interactive text-messaging intervention for medication adherence, socialization, and auditory hallucinations. *Schizophrenia Bulletin*, *38(3)*, 414-425.

Green, C., Freeman, D., Kuipers, E., Bebbington, P., Fowler, D., Dunn, G., & Garety, P. (2008). Measuring ideas of persecution and social reference: the Green et al. Paranoid Thought Scales (GPTS). *Psychological Medicine*, *38*(1), 101-111.

Greenwood, H., Krzyzaniak, N., Peiris, R., Clark, J., Scott, A. M., Cardona, M., Griffith, R., & Glasziou, P. (2022). Telehealth versus face-to-face psychotherapy for less common mental health conditions:

systematic review and meta-analysis of randomized controlled trials. *JMIR Mental Health*, *9*(3), e31780.

Greenwood, K. E., Sweeney, A., Williams, S., Garety, P., Kuipers, E., Scott, J., & Peters, E. (2010). CHoice of Outcome In Cbt for psychosEs (CHOICE): the development of a new service user-led outcome measure of CBT for psychosis. *Schizophrenia Bulletin*, *36*(1), 126-135.

Grober, E., Sliwinsk, M., & Korey, S. R. (1991). Development and validation of a model for estimating premorbid verbal intelligence in the elderly. *Journal of Clinical and Experimental Neuropsychology*, *13*(6), 933-949.

Gumley, A., Taylor, H., Schwannauer, M., & MacBeth, A. (2014). A systematic review of attachment and psychosis: measurement, construct validity and outcomes. *Acta Psychiatrica Scandinavica*, *129*(4), 257-274.

Haddock, G., Eisner, E., Boone, C., Davies, G., Coogan, C., & Barrowclough, C. (2014). An investigation of the implementation of NICE-recommended CBT interventions for people with schizophrenia. *Journal of Mental Health*, *23*(4), 162-165.

Haddock, G., McCarron, J., Tarrier, N., & Faragher, E. (1999). Scales to measure dimensions of hallucinations and delusions: the psychotic symptom rating scales (PSYRATS). *Psychological Medicine*, *29*(4), 879-889.

Haddock, G., Wood, L., Watts, R., Dunn, G., Morrison, A. P., & Price, J. (2011). The Subjective Experiences of Psychosis Scale (SEPS): psychometric evaluation of a scale to assess outcome in psychosis. *Schizophrenia Research*, *133*(1-3), 244-249.

Hall, R. C. (1995). Global assessment of functioning: a modified scale. *Psychosomatics*, *36*(3), 267-275.

Hamilton, M. (1959). The assessment of anxiety states by rating. *British Journal of Medical Psychology, 32,* 50-55.

Hamilton, M. (1960). A rating scale for depression. *Journal of Neurology, Neurosurgery, and Psychiatry*, *23*(1), 56.

Harper, K. M. (2014). An investigation of an internet-based cognitive behavioral therapy program for auditory hallucinations.DP - 2014. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, *75*(4-B(E)), No Pagination Specified.

Hartigan, N., McCarthy-Jones, S., & Hayward, M. (2014). Hear today, not gone tomorrow? An exploratory longitudinal study of auditory verbal hallucinations (hearing voices). *Behavioural and Cognitive Psychotherapy*, *42*(1), 117-123.

Hartley, S., Barrowclough, C., & Haddock, G. (2013). Anxiety and depression in psychosis: a systematic review of associations with positive psychotic symptoms. *Acta Psychiatrica Scandinavica*, *128*(5), 327-346.

Hayward, M. (2003). Interpersonal relating and voice hearing: to what extent does relating to the voice reflect social relating? *Psychology and Psychotherapy: Theory, Research and Practice*, *76*(4), 369-383.

Hayward, M., Berry, K., & Ashton, A. (2011). Applying interpersonal theories to the understanding of and therapy for auditory hallucinations: a review of the literature and directions for further research. *Clinical Psychology Review*, *31*(8), 1313-1323.

Hayward, M., Jones, A., Bogen-Johnston, L., Thomas, N., & Strauss, C. (2017). Relating therapy for distressing auditory hallucinations: a pilot randomized controlled trial. *Schizophrenia Research*, *183*, 137-142.

Hesse, E. (1999). The adult attachment interview: Historical and current perspectives. In J. Cassidy & P. R. Shaver (Eds.) *Handbook of attachment: Theory, research, and clinical applications. (pp. 395–433). New York: Guilford*.

Higgins, J. P., & Green, S. (2008). Cochrane handbook for systematic reviews of interventions. Retrieved March 2024 from https://training.cochrane.org/handbook.

Higgins, J. P., Li, T., & Deeks, J. J. (2019). Choosing effect measures and computing estimates of effect. *Cochrane handbook for systematic reviews of interventions*, 143-176.

Jackson, L. J., Hayward, M., & Cooke, A. (2011). Developing positive relationships with voices: A preliminary grounded theory. *International Journal of Social Psychiatry*, *57*(5), 487-495.

Jongeneel, A., Libedinsky, I., Reinbergen, A., Tromp, N., Delespaul, P., Riper, H., van der Gaag, M., & van den Berg, D. (2022). Momentary effects of Temstem, an app for voice-hearing individuals: Results from naturalistic data from 1048 users. *Internet Interventions*, *30*, 100580.

Jongeneel, A., van Veen, S. C., Scheffers, D., Riper, H., van den Hout, M. A., van der Gaag, M., & van den Berg, D. (2020). Linguistic dual tasking reduces emotionality, vividness and credibility of voice memories in voice-hearing individuals: Results from a controlled trial. *Schizophrenia Research*, *216*, 249-254.

Kane, J. M. (1996). Treatment-resistant schizophrenic patients. *The Journal of Clinical Psychiatry*, *57*, 35-40.

Katznelson, H. (2014). Reflective functioning: A review. *Clinical Psychology Review*, *34*(2), 107-117.

Kay, S. R., Fiszbein, A., & Opler, L. A. (1987). The positive and negative syndrome scale (PANSS) for schizophrenia. *Schizophrenia Bulletin*, *13*(2), 261-276.

Kip, H., Kelders, S. M., Weerink, K., Kuiper, A., Brüninghoff, I., Bouman, Y. H., Dijkslag, D., & van Gemert-Pijnen, L. J. (2019). Identifying the added value of virtual reality for treatment in forensic mental health: a scenario-based, qualitative approach. *Frontiers in Psychology*, *10*, 406.

Lakens, D. (2013). Calculating and reporting effect sizes to facilitate cumulative science: a practical primer for t-tests and ANOVAs. *Frontiers in Psychology*, *4*, 62627.

Launay, G., & Slade, P. (1981). The measurement of hallucinatory predisposition in male and female prisoners. *Personality and Individual Differences*, *2*(3), 221-234.

Leff, J., Williams, G., Huckvale, M. A., Arbuthnot, M., & Leff, A. P. (2013). Computer-assisted therapy for medication-resistant auditory hallucinations: Proof-of-concept study. *The British Journal of Psychiatry*, *202*(6), 428-433.

Leudar, I., & Thomas, P. (2005). *Voices of reason, voices of insanity: Studies of verbal hallucinations*. Routledge.

Liang, N., Li, X., Guo, X., Liu, S., Liu, Y., Zhao, W., Wen, Y., Li, Y., Li, F., Wu, H., Li, J., Li, Q., Guo, J., & Xu, Y. (2022). Visual P300 as a neurophysiological correlate of symptomatic improvement by a virtual reality-based computer AT system in patients with auditory verbal hallucinations: A Pilot study. *Journal of Psychiatric Research*, *151*, 261-271.

Longden, E., Corstens, D., Morrison, A. P., Larkin, A., Murphy, E., Holden, N., Steele, A., Branitsky, A., & Bowe, S. (2021a). A treatment protocol to guide the delivery of dialogical engagement with auditory hallucinations: Experience from the talking with voices pilot trial. *Psychology and Psychotherapy: Theory, Research and Practice*, *94*(3), 558-572.

Longden, E., Corstens, D., Pyle, M., Emsley, R., Peters, S., Chauhan, N., Dehmahdi, N., & Morrison, A. P. (2021b). Engaging dialogically with auditory hallucinations: design, rationale and baseline sample characteristics of the Talking With Voices pilot trial. *Psychosis*, *13*(4), 315-326.

Lopez-Luengo, B., & Muela-Martinez, J. A. (2016). Preliminary study of a rehabilitation program based on attentional processes to treat auditory hallucinations. *Cognitive Neuropsychiatry*, *21*(4), 315-334.

Lovibond, P. F., & Lovibond, S. H. (1995). *Manual for the depression anxiety stress scales (2nd Ed.)*. Psychology Foundation.

Ludtke, T., Platow-Kohlschein, H., Ruegg, N., Berger, T., Moritz, S., & Westermann, S. (2020). Mindfulness Mediates the Effect of a Psychological Online Intervention for Psychosis on Self-Reported Hallucinations: A Secondary Analysis of Voice Hearers From the EviBaS Trial. *Frontiers in Psychiatry*, *11*, 228.

Luyten, P., & Fonagy, P. (2015). The neurobiology of mentalizing. *Personality Disorders: Theory, Research, and Treatment*, *6*(4), 366.

MacBeth, A., Gumley, A., Schwannauer, M., & Fisher, R. (2011). Attachment states of mind, mentalization, and their correlates in a first-episode psychosis sample. *Psychology and Psychotherapy: Theory, Research and Practice*, *84*(1), 42-57.

Mawson, A., Berry, K., Murray, C., & Hayward, M. (2011). Voice hearing within the context of hearers' social worlds: An interpretative phenomenological analysis. *Psychology and Psychotherapy: Theory, Research and Practice*, *84*(3), 256-272.

McGrath, J., Saha, S., Chant, D., & Welham, J. (2008). Schizophrenia: a concise overview of incidence, prevalence, and mortality. *Epidemiologic reviews*, *30*(1), 67-76.

McLeod, J. (2011). *Qualitative research in counselling and psychotherapy*. SAGE publications Ltd.

Meins, E., Fernyhough, C., Russell, J., & Clark-Carter, D. (1998). Security of attachment as a predictor of symbolic and mentalising abilities: A longitudinal study. *Social Development*, *7*(1), 1-24.

Meyerowitz-Katz, G., Ravi, S., Arnolda, L., Feng, X., Maberly, G., & Astell-Burt, T. (2020). Rates of attrition and dropout in app-based interventions for chronic disease: systematic review and meta-analysis. *Journal of Medical Internet Research*, *22*(9), e20283.

Miller, L. J., O'Connor, E., & DiPasquale, T. (1993). Patients' attitudes toward hallucinations. *American Journal of Psychiatry*, *150*, 584-584.

Milligan, D., McCarthy-Jones, S., Winthrop, A., & Dudley, R. (2013). Time changes everything? A qualitative investigation of the experience of auditory verbal hallucinations over time. *Psychosis*, *5*(2), 107-118.

Mind. (2020, January). *Psychosis.* Accessed from: https://www.mind.org.uk/information-support/types-of-mental-health-problems/psychosis/about-psychosis/

Morosini, P., Magliano, L., Brambilla, L. a., Ugolini, S., & Pioli, R. (2000). Development, reliability and acceptability of a new version of the DSM-IV Social and Occupational Functioning Assessment Scale (SOFAS) to assess routine social funtioning. *Acta Psychiatrica Scandinavica*, *101*(4), 323-329.

Murray, R. M., Quattrone, D., Natesan, S., Van Os, J., Nordentoft, M., Howes, O., Di Forti, M., & Taylor, D. (2016). Should psychiatrists be more cautious about the long-term prophylactic use of antipsychotics? *The British Journal of Psychiatry*, *209*(5), 361-365.

Nayani, T. H., & David, A. S. (1996). The auditory hallucination: a phenomenological survey. *Psychological Medicine*, *26*(1), 177-189.

Olmos-Vega, F. M., Stalmeijer, R. E., Varpio, L., & Kahlke, R. (2023). A practical guide to reflexivity in qualitative research: AMEE Guide No. 149. *Medical Teacher*, *45*(3), 241-251.

Overall, J. E., & Gorham, D. R. (1962). The brief psychiatric rating scale. *Psychological Reports*, *10*(3), 799-812.

Peters, E. (2014). An oversimplification of psychosis, its treatment, and its outcomes? *The British Journal of Psychiatry*, *205*(2), 159-160.

Petersen, A. (2018). *Digital health and technological promise: A sociological inquiry*. Routledge.

Philippe, T. J., Sikder, N., Jackson, A., Koblanski, M. E., Liow, E., Pilarinos, A., & Vasarhelyi, K. (2022). Digital health interventions for delivery of mental health care: systematic and comprehensive meta-review. *JMIR Mental Health*, *9*(5), e35159.

Pinto, A., Gigantesco, A., Morosini, P., & La Pia, S. (2007). Development, reliability and validity of a self-administered questionnaire on subjective opinion about delusions and voices. *Psychopathology*, *40*(5), 312-320.

Ponizovsky, A. M., Vitenberg, E., Baumgarten-Katz, I., & Grinshpoon, A. (2013). Attachment styles and affect regulation among outpatients with schizophrenia: Relationships to symptomatology and emotional distress. *Psychology and Psychotherapy: Theory, Research and Practice*, *86*(2), 164-182.

Rafieifar, M., Hanbidge, A. S., Lorenzini, S. B., & Macgowan, M. J. (2024). Comparative Efficacy of Online vs. Face-to-Face Group Interventions: A Systematic Review. *Research on Social Work Practice*, *32*(1), 13–31.

Rich, E., Miah, A., & Lewis, S. (2019). Is digital health care more equitable? The framing of health inequalities within England's digital health policy 2010–2017. *Sociology of Health & Illness*, *41*, 31-49.

Rogers, E. S., Chamberlin, J., & Ellison, M. L. (1997). Measure empowerment among users of mental health services. *Psychiatric Services*, *48*(8), 1042-1047.

Romme, M. A., & Escher, A. D. (1989). Hearing voices. *Schizophrenia Bulletin*, *15*(2), 209-216.

Romme, M., & Escher, S. (1993). *Accepting voices*. MIND publications.

Rosenberg, M. (2015). *Society and the adolescent self-image*. Princeton University Press.

Rus-Calafell, M., Ehrbar, N., Ward, T., Edwards, C., Huckvale, M., Walke, J., Garety, P., & Craig, T. (2022). Participants' experiences of AVATAR therapy for distressing voices: a thematic qualitative evaluation. *BMC Psychiatry*, *22*(1), 356.

Rus-Calafell, M., Garety, P., Sason, E., Craig, T. J., & Valmaggia, L. R. (2018). Virtual reality in the assessment and treatment of psychosis: a systematic review of its utility, acceptability and effectiveness. *Psychological Medicine*, *48*(3), 362-391.

Schneider, L. C., & Struening, E. L. (1983). SLOF: a behavioral rating scale for assessing the mentally ill. *Social Work Research and Abstracts*, *19*(3), 9-21.

Shaver, P. R., & Mikulincer, M. (2002). Attachment-related psychodynamics. *Attachment & Human Development*, *4*(2), 133-161.

Shawyer, F., Ratcliff, K., Mackinnon, A., Farhall, J., Hayes, S. C., & Copolov, D. (2007). The voices acceptance and action scale (VAAS): Pilot data. *Journal of Clinical Psychology*, *63*(6), 593-606.

Shiel, L., Demjén, Z., & Bell, V. (2022). Illusory social agents within and beyond voices: a computational linguistics analysis of the experience of psychosis. *British Journal of Clinical Psychology*, *61*(2), 349-363.

Smith, L. C., Mariegaard, L., Vernal, D. L., Christensen, A. G., Albert, N., Thomas, N., Hjorthøj, C., Glenthøj, L. B., & Nordentoft, M. (2022). The CHALLENGE trial: the effects of a virtual reality-assisted exposure therapy for persistent auditory hallucinations versus supportive counselling in people with psychosis: study protocol for a randomised clinical trial. *Trials*, *23*(1), 773.

Sommer, I. E., Slotema, C. W., Daskalakis, Z. J., Derks, E. M., Blom, J. D., & van der Gaag, M. (2012). The treatment of hallucinations in schizophrenia spectrum disorders. *Schizophrenia Bulletin*, *38*(4), 704-714.

Sorrell, E., Hayward, M., & Meddings, S. (2010). Interpersonal processes and hearing voices: a study of the association between relating to voices and distress in clinical and non-clinical hearers. *Behavioural and Cognitive Psychotherapy*, *38*(2), 127-140.

Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of Internal Medicine*, *166*(10), 1092-1097.

Sprong, M., Schothorst, P., Vos, E., Hox, J., & Van Engeland, H. (2007). Theory of mind in schizophrenia: meta-analysis. *The British Journal of Psychiatry*, *191*(1), 5-13.

Stefaniak, I., Sorokosz, K., Janicki, A., & Wciorka, J. (2019). Therapy based on avatar-therapist synergy for patients with chronic auditory hallucinations: A pilot study. *Schizophrenia research*, *211*, 115-117.

Strauss, C., Thomas, N., & Hayward, M. (2015). Can we respond mindfully to distressing voices? A systematic review of evidence for engagement, acceptability, effectiveness and mechanisms of change for mindfulness-based interventions for people distressed by hearing voices. *Frontiers in Psychology*, *6*, 140400.

Svarstad, B. L., Chewning, B. A., Sleath, B. L., & Claesson, C. (1999). The Brief Medication Questionnaire: a tool for screening patient adherence and barriers to adherence. *Patient Education and Counselling*, *37*(2), 113-124.

The EuroQol Group. (1990). EuroQol-a new facility for the measurement of health-related quality of life. *Health Policy*, *16*(3), 199-208.

Thomas, B., Ciliska, D., Dobbins, M., & Micucci, S. (2004). A process for systematically reviewing the literature: providing the research evidence for public health nursing interventions. *Worldviews on Evidence-Based Nursing*, *1*(3), 176-184.

Thomas, N., Bless, J. J., Alderson-Day, B., Bell, I. H., Cella, M., Craig, T., Delespaul, P., Hugdahl, K., Laloyaux, J., & Larøi, F. (2019). Potential applications of digital technology in assessment, treatment, and self-help for hallucinations. *Schizophrenia Bulletin*, *45*(Supplement_1), S32-S42.

Thomas, N., McLeod, H. J., & Brewin, C. R. (2009). Interpersonal complementarity in responses to auditory hallucinations in psychosis. *British Journal of Clinical Psychology*, *48*(4), 411-424.

Thomson, P., & Jaque, S. V. (2022). Attachment and memory stability. *Journal of Trauma & Dissociation*, *23*(2), 191-204.

Van Den Berg, D., Tolmeijer, E., Jongeneel, A., Staring, A. B., Palstra, E., Van Der Gaag, M., & Hardy, A. (2023). Voice phenomenology as a mirror of the past. *Psychological Medicine*, *53*(7), 2954-2962.

Van der Gaag, M., Valmaggia, L. R., & Smit, F. (2014). The effects of individually tailored formulation-based cognitive behavioural therapy in auditory hallucinations and delusions: a meta-analysis. *Schizophrenia Research*, *156*(1), 30-37.

Van Lieshout, R. J., & Goldberg, J. O. (2007). Quantifying self-reports of auditory verbal hallucinations in persons with psychosis. *Canadian Journal of Behavioural Science, 39*(1), 73.

Varese, F., Tai, S. J., Pearson, L., & Mansell, W. (2016). Thematic associations between personal goals and clinical and non-clinical voices (auditory verbal hallucinations). *Psychosis*, *8*(1), 12-22.

Varese, F., & Menon, M. (2012). Auditory hallucinations in schizophrenia and nonschizophrenia populations: a review and integrated model of cognitive mechanisms. *Schizophrenia Bulletin*, *38*(4), 683-693.

Veritas Health Innovation. (2024). Covidence systematic review software. Available at www.covidence.org.

Wallace, C. J., Liberman, R. P., Tauber, R., & Wallace, J. (2000). The independent living skills survey: a comprehensive measure of the community functioning of severely and persistently mentally ill individuals. *Schizophrenia Bulletin*, *26*(3), 631-658.

Walsh, R. (2003). The methods of reflexivity. *The Humanistic Psychologist*, *31*(4), 51-66.

Ward, T., Lister, R., Fornells-Ambrojo, M., Rus-Calafell, M., Edwards, C. J., O'Brien, C., Craig, T. K., & Garety, P. (2022). The role of characterisation in everyday voice engagement and AVATAR therapy dialogue. *Psychological Medicine*, *52*(16), 3846-3853.

Ward, T., Rus-Calafell, M., Ramadhan, Z., Soumelidou, O., Fornells-Ambrojo, M., Garety, P., & Craig, T. K. (2020). AVATAR therapy for distressing voices: a comprehensive account of therapeutic targets. *Schizophrenia Bulletin*, *46*(5), 1038-1044.

Waters, F., Allen, P., Aleman, A., Fernyhough, C., Woodward, T. S., Badcock, J. C., Barkus, E., Johns, L., Varese, F., & Menon, M. (2012). Auditory hallucinations in schizophrenia and nonschizophrenia populations: a review and integrated model of cognitive mechanisms. *Schizophrenia Bulletin*, *38*(4), 683-693.

Weijers, J., Fonagy, P., Eurelings-Bontekoe, E., Termorshuizen, F., Viechtbauer, W., & Selten, J. (2018). Mentalizing impairment as a mediator between reported childhood abuse and outcome in nonaffective psychotic disorder. *Psychiatry Research*, *259*, 463-469.

Westermann, S., Ruegg, N., Ludtke, T., Moritz, S., & Berger, T. (2020). Internet-based self-help for psychosis: Findings from a randomized controlled trial. *Journal of Consulting and Clinical Psychology*, *88*(10), 937-950.

Wilkinson, S., & Bell, V. (2016). The representation of agents in auditory verbal hallucinations. *Mind & Language*, *31*(1), 104-126.

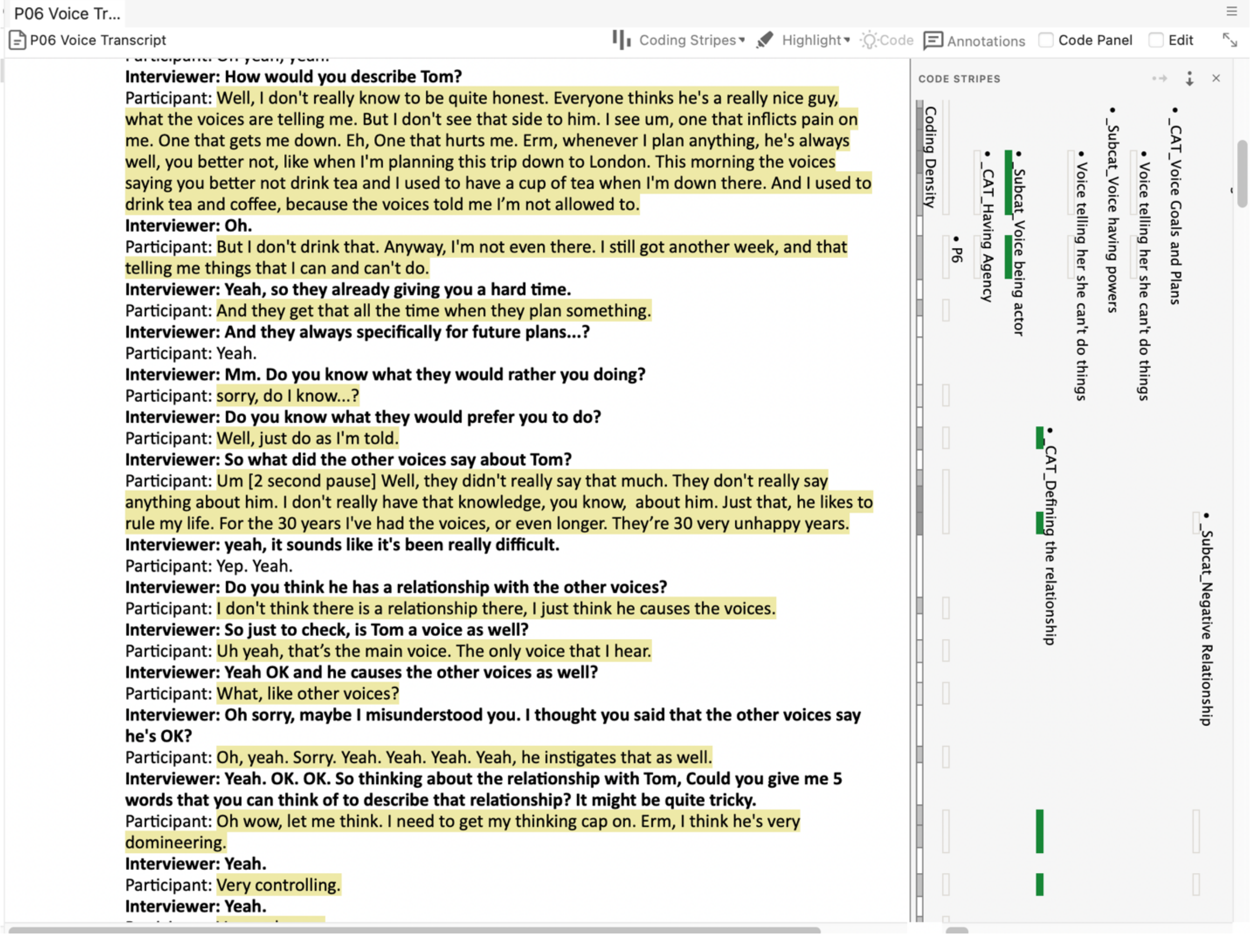
Willig, C. (2001). Introducing qualitative research in psychology. Open University Press.

Woods, A., Jones, N., Alderson-Day, B., Callard, F., & Fernyhough, C. (2015). Experiences of hearing voices: analysis of a novel phenomenological survey. *The Lancet Psychiatry*, *2*(4), 323-331.

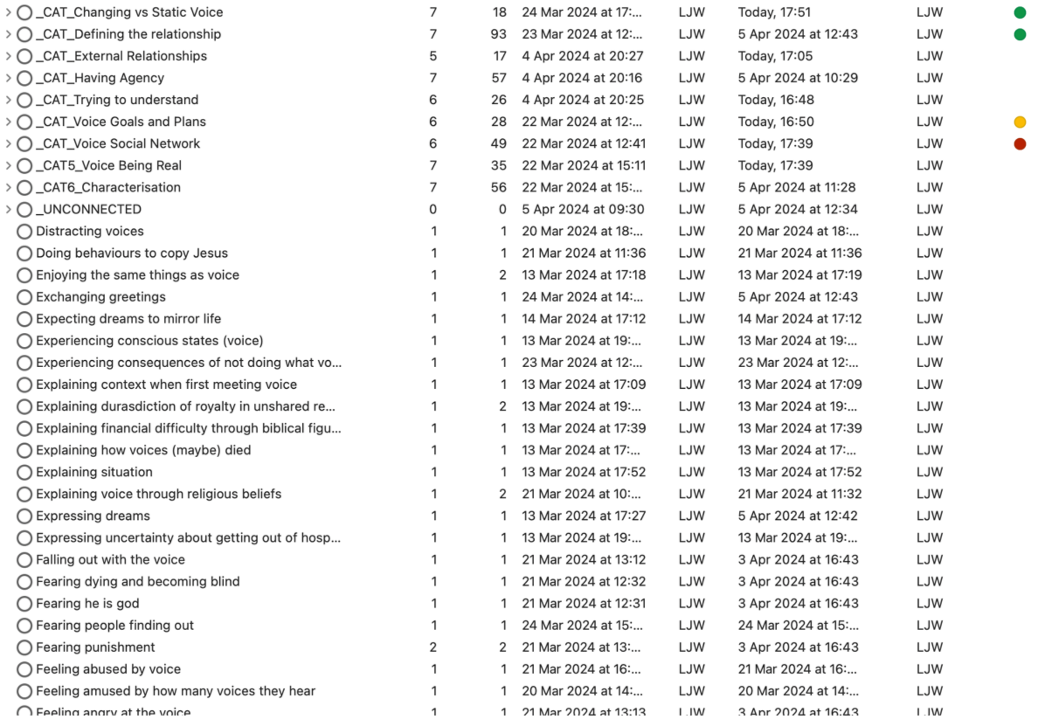
Yung, A., Phillips, L., McGorry, P., Ward, J., Donovan, K., & Thompson, K. (2002). Comprehensive assessment of at-risk mental states (CAARMS). *University of Melbourne, Department of Psychiatry, Personal Assessment and Crisis Evaluation Clinic, Melbourne, Australia*.

Appendices

Appendix 1. Screenshot of line-by-line coding sample in NVivo and codes in NVivo.



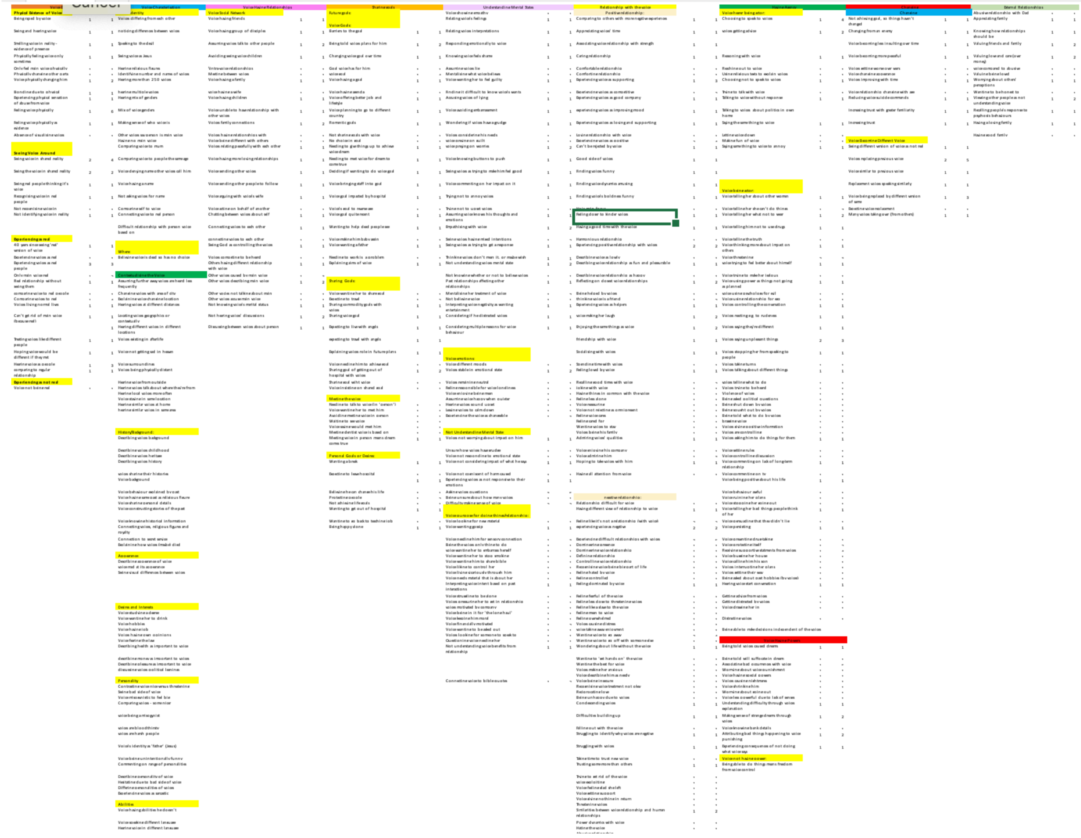
Interviewer: How would you describe Tom?
Participant: Well, I don't really know to be quite honest. Everyone thinks he's a really nice guy, what the voices are telling me. But I don't see that side to him. I see um, one that inflicts pain on me. One that gets me down. Eh, One that hurts me. Erm, whenever I plan anything, he's always well, you better not, like when I'm planning this trip down to London. This morning the voices saying you better not drink tea and I used to have a cup of tea when I'm down there. And I used to drink tea and coffee, because the voices told me I'm not allowed to.
Interviewer: Oh.
Participant: But I don't drink that. Anyway, I'm not even there. I still got another week, and that telling me things that I can and can't do.
Interviewer: Yeah, so they already giving you a hard time.
Participant: And they get that all the time when they plan something.
Interviewer: And they always specifically for future plans...?
Participant: Yeah.
Interviewer: Mm. Do you know what they would rather you doing?
Participant: sorry, do I know...?
Interviewer: Do you know what they would prefer you to do?
Participant: Well, just do as I'm told.
Interviewer: So what did the other voices say about Tom?
Participant: Um [2 second pause] Well, they didn't really say that much. They don't really say anything about him. I don't really have that knowledge, you know, about him. Just that, he likes to rule my life. For the 30 years I've had the voices, or even longer. They're 30 very unhappy years.
Interviewer: yeah, it sounds like it's been really difficult.
Participant: Yep. Yeah.
Interviewer: Do you think he has a relationship with the other voices?
Participant: I don't think there is a relationship there, I just think he causes the voices.
Interviewer: So just to check, is Tom a voice as well?
Participant: Uh yeah, that's the main voice. The only voice that I hear.
Interviewer: Yeah OK and he causes the other voices as well?
Participant: What, like other voices?
Interviewer: Oh sorry, maybe I misunderstood you. I thought you said that the other voices say he's OK?
Participant: Oh, yeah. Sorry. Yeah. Yeah. Yeah. Yeah, he instigates that as well.
Interviewer: Yeah. OK. OK. So thinking about the relationship with Tom, Could you give me 5 words that you can think of to describe that relationship? It might be quite tricky.
Participant: Oh wow, let me think. I need to get my thinking cap on. Erm, I think he's very domineering.
Interviewer: Yeah.
Participant: Very controlling.
Interviewer: Yeah.



○ _CAT_Changing vs Static Voice	7	18	24 Mar 2024 at 17:...	LJW	Today, 17:51	LJW	●
○ _CAT_Defining the relationship	7	93	23 Mar 2024 at 12:...	LJW	5 Apr 2024 at 12:43	LJW	●
○ _CAT_External Relationships	5	17	4 Apr 2024 at 20:27	LJW	Today, 17:05	LJW	
○ _CAT_Having Agency	7	57	4 Apr 2024 at 20:16	LJW	5 Apr 2024 at 10:29	LJW	
○ _CAT_Trying to understand	6	26	4 Apr 2024 at 20:25	LJW	Today, 16:48	LJW	
○ _CAT_Voice Goals and Plans	6	28	22 Mar 2024 at 12:...	LJW	Today, 16:50	LJW	●
○ _CAT_Voice Social Network	6	49	22 Mar 2024 at 12:41	LJW	Today, 17:39	LJW	●
○ _CAT5_Voice Being Real	7	35	22 Mar 2024 at 15:11	LJW	Today, 17:39	LJW	
○ _CAT6_Characterisation	7	56	22 Mar 2024 at 15:...	LJW	5 Apr 2024 at 11:28	LJW	
○ _UNCONNECTED	0	0	5 Apr 2024 at 09:30	LJW	5 Apr 2024 at 12:34	LJW	
○ Distracting voices	1	1	20 Mar 2024 at 18:...	LJW	20 Mar 2024 at 18:...	LJW	
○ Doing behaviours to copy Jesus	1	1	21 Mar 2024 at 11:36	LJW	21 Mar 2024 at 11:36	LJW	
○ Enjoying the same things as voice	1	2	13 Mar 2024 at 17:18	LJW	13 Mar 2024 at 17:19	LJW	
○ Exchanging greetings	1	1	24 Mar 2024 at 14:...	LJW	5 Apr 2024 at 12:43	LJW	
○ Expecting dreams to mirror life	1	1	14 Mar 2024 at 17:12	LJW	14 Mar 2024 at 17:12	LJW	
○ Experiencing conscious states (voice)	1	1	13 Mar 2024 at 19:...	LJW	13 Mar 2024 at 19:...	LJW	
○ Experiencing consequences of not doing what vo...	1	1	23 Mar 2024 at 12:...	LJW	23 Mar 2024 at 12:...	LJW	
○ Explaining context when first meeting voice	1	1	13 Mar 2024 at 17:09	LJW	13 Mar 2024 at 17:09	LJW	
○ Explaining durasdiction of royalty in unshared re...	1	2	13 Mar 2024 at 19:...	LJW	13 Mar 2024 at 19:...	LJW	
○ Explaining financial difficulty through biblical figu...	1	1	13 Mar 2024 at 17:39	LJW	13 Mar 2024 at 17:39	LJW	
○ Explaining how voices (maybe) died	1	1	13 Mar 2024 at 17:...	LJW	13 Mar 2024 at 17:...	LJW	
○ Explaining situation	1	1	13 Mar 2024 at 17:52	LJW	13 Mar 2024 at 17:52	LJW	
○ Explaining voice through religious beliefs	1	2	21 Mar 2024 at 10:...	LJW	21 Mar 2024 at 11:32	LJW	
○ Expressing dreams	1	1	13 Mar 2024 at 17:27	LJW	5 Apr 2024 at 12:42	LJW	
○ Expressing uncertainty about getting out of hosp...	1	1	13 Mar 2024 at 19:...	LJW	13 Mar 2024 at 19:...	LJW	
○ Falling out with the voice	1	1	21 Mar 2024 at 13:12	LJW	3 Apr 2024 at 16:43	LJW	
○ Fearing dying and becoming blind	1	1	21 Mar 2024 at 12:32	LJW	3 Apr 2024 at 16:43	LJW	
○ Fearing he is god	1	1	21 Mar 2024 at 12:31	LJW	3 Apr 2024 at 16:43	LJW	
○ Fearing people finding out	1	1	24 Mar 2024 at 15:...	LJW	24 Mar 2024 at 15:...	LJW	
○ Fearing punishment	2	2	21 Mar 2024 at 13:...	LJW	3 Apr 2024 at 16:43	LJW	
○ Feeling abused by voice	1	1	21 Mar 2024 at 16:...	LJW	21 Mar 2024 at 16:...	LJW	
○ Feeling amused by how many voices they hear	1	1	20 Mar 2024 at 14:...	LJW	20 Mar 2024 at 14:...	LJW	
○ Feeling angry at the voice	1	1	21 Mar 2024 at 13:13	LJW	3 Apr 2024 at 16:43	LJW	

Appendix 2. Screenshots of organising codes in Excel.

Voice Being Real			Voice Characterisation			Voice Having Relationships			Sharing goals			Understanding Mental States			Relationship with the voice	
Physical Existance of Voice			Voice identity			Voice Social Network			Future goals: Voice Goals:			Voice showing empathy	1	1	Positive relationship:	
Being raped by voice	1	1	Voices differing from each other	1	1	Voice having friends	1	1				Relating voice's feelings	1	1	Comparing to others with more negative experiences	1
Seeing and hearing voice	1	1	noticing differences between voices	1	1	Voice having group of disciples	1	1	Barriers to the goal	1	1	Relating voices interpretations	1	1	Appreciating voices' time	1
Smelling voice in reality - evidence of presence	1	1	Speaking to the devil	1	2	Assuming voices talk to other people	1	2	Being told voices plans for him	1	2	Responding emotionally to voice	1	1	Associating voice relationship with strength	1
Physically feeling voice only sometimes	1	1	Seeing voice as Jesus	1	1	Avoiding seeing voice children	1	1	Changing voice goal over time	1	1	Knowing voice feels shame	1	1	Caring relationship	1
Only feel main voice physically	1	1	Hearing religious figures	1	1	Intra-voice relationships	1	1	Goal voice has for him	1	1	Assuming voices lie	1	1	Comfortable relationship	1
Physically changing other parts	1	1	Identifying number and names of voices	1	1	Meeting between voices	1	1	voice goal	1	4	Mentalising what voice believes	1	1	Comforting relationship	1
Voice physically changing him	1	2	Hearing more than 250 voices	1	1	Voice having a family	1	1	Voice having a goal	1	1	Voice wanting her to feel guilty	1	1	Experiencing voice as supporting	1
Bonding due to physical touch	1	1	hearing multiple voices	2	3	voice having a wife	1	1	Voice having agenda	1	1	Finding it difficult to know voice's wants	1	1	Experiencing voices as competitive	1
Experiencing physical sensation of abuse from voice	1	1	Hearing mix of genders	1	1	Voice having children	1	1	Voice offering better job and lifestyle	1	1	Accusing voices of lying	1	1	Experiencing voices as good company	1
Feeling voice physically	1	6	Mix of voice genders	1	1	Voice unable to have relationship with other voices	1	1	Voice planning to go to different country	1	1	Voice avoiding embarrassment	1	1	experiencing voices as improving mood	1
Feeling voice physically as evidence	1	1	Making sense of who voice is	1	1	Voices family connections	1	2	Romantic goals	1	1	Wondering if voices have a grudge	1	1	Experiencing voices as loving and supporting	1
Absence of visualising voices	1	1	Other voices say person is main voice	1	1	Voices having relationships with others	1	1	Not sharing goals with voice	1	1	Voices considering his needs	1	1		1
			Having no main voice	1	1	Voice being different with others	1	1	No choice in goal	1	1	voice preying on guilt	1	1	Experiencing voices as positive	2
Seeing Voice Around			Comparing voice to mum	1	1	Voices relating peacefully with each other	1	1	Needing to give things up to achieve voice dream	1	1	voice preying on worries	1	2	Can't be rejected by voice	1
Seeing voice in shared reality	2	4	Comparing voice to people the same age	1	1	Voice having more loving relationships	1	1	Needing to meet voice for dream to come true	1	1	Voice knowing buttons to push	1	1	Good side of voices	1
Seeing the voice in shared reality	2	2	Voice denying name other voices call him	1	1	Voice sending other voices	1	1	Deciding if wanting to do voice goal	1	1	Seeing voices as trying to make him feel good	1	1	Finding voices funny	1
Seeing real people thinking it's voice	1	1	Voice having a name	2	2	Voice sending other people to follow	1	1	Voice bringing staff into goal	1	1	Voice commenting on her impact on it	1	1	Finding voice dynamics amusing	1
Recognising voice in real people	1	1	Not asking voices for name	1	1	Voice arguing with voice's wife	1	1	Voice goal impacted by hospital	1	1	Trying not to annoy voices	1	1	Finding voice's boldness funny	1
Not recognising voice in person	1	1	Comparing self to voice	1	1	Voice acting on behalf of another	1	1	Voice's goal to reverse age	1	1	Trying not to upset voices	1	1	He is main focus	1
Not identifying voice in reality	1	1	Connecting voice to real person	1		Chatting between voices about self	1	1	Voice goal quite recent	1	1	Assuming voice knows his thoughts and emotions	1	1	Feeling closer to kinder voices	1
			Difficult relationship with person voice based on	1	1	Connecting voices to each other	1	1	Wanting to help dead people see	1	1	Empathising with voice	1	2	Having a good time with the voice	1
Experiencing as real						connecting voices to each other	1	1	Voice making him baby again	1	1	Seeing voices having mixed intentions	1	2	Harmonious relationship	1
40 years since seeing 'real' version of voice	1	1	Where:			Seeing God as controlling the voices	1	1	Voice wanting a father	1	1	Seeing voices as trying to get a response	1	1	Experiencing positive relationship with voices	2
Experiencing voices as real	1	1	Believing voice is dead so has no choice	1	1	Voices competing to be heard	1	1	Needing to work is a problem	1	1	Thinking voices don't mean it, or maybe wish it	1	1	Describing voice as lovely	1
Experiencing voices as real people	3	3				Others having different relationship with voice	1	1	Explaining aims of voice	1	1	Not understanding voices mental state	1	2	Describing voice relationship as fun and pleasurable	1
Only main voice real	1	2	Contextualising the Voice			Other voices caused by main voice	1	3				Not knowing whether or not to believe voices	1	1	Describing voice relationship as happy	1
Real relationship without seeing them	1	1	Assuming further away voices are heard less frequently	1	1	Other voices describing main voice	1	2	Sharing Goals:			Past relationships affecting other relationships	1	1	Reflecting on closest voice relationships	1
comparing voice to real people	1	1	Changing voices with area of city	1	1	Other vocies not talking about main voice	1	1	Voice wanting her to share goal	1	1	Mentalising her treatment of voice	1	2	Being helped by voices	1
Comparing voices to real people	1	4	Explaining voice changing location	1	1	Other voices accuse main voice	1	1	Expecting to travel	1	2	Not believing voice	1	1	thinking voice is a friend	1
Voices living normal lives	1	1	Hearing voices at different distances	1	1	Not knowing voice's marital status	1	1	Sharing commodity goals with voices	1	1	Interpreting voice negativity as wanting entertainment	1	1	Experiencing voices as helpers	1
Can't get rid of main voice	1	1	Locating voices geographics or contextually	1	5	Not hearing voices' discussions	1	2	Sharing voice goal	1	1	Considering if he distracted voices	1	1	voice making her laugh	1



Appendix 3. Reflexivity Statement

My decision to undertake this research was heavily influenced by my work as a research assistant with the hearing voices population. I was fascinated by people's description of their voices, the sheer variety of their experiences, the emotional impact and meaning these characterised voices had for them. Asking about this was just a small part of my research assistant role, but I just wanted to keep asking about it. Before commencing this project, I expected to find some characterised voices, but worried that I wouldn't find any.

This previous experience meant that I began to project with preconceived understanding of voices, based mainly on early cognitive theories. At times it was difficult to move past the more established paradigms of voice power and voice control to instead understand the participant's personal meanings of these experiences. It was challenging at times to avoid asking about the constructs that I already knew, and to stay grounded in the emerging data. From my reading about characterisation prior to undertaking this project, I already had the expectation that voice-hearers might experience their voices as characterised entities, which lead me to use the term ‘characterisation’ when coding. This also informed my choice of questions, which invited participants to describe the likes and dislikes of their voices, which made it more likely for people to describe these aspects of their voice. I also asked participants about a ‘main voice’, which may have suggested to participants that I expected their voices to be distinct from one another, and participants may have answered differently on this basis.

Prior to my interviews I had a pre-conceived view that some participants would view their voices as companions. This influenced the general framework of questions that I asked, which will have influenced the data. The participant information sheet provided to participants defined the interaction between voice-hearer and voice as a relationship, and I wonder whether at times that pushed this framework onto participants that might not have considered it in those terms before.

From my exploration of the literature, I understood that people’s relationships with their voices might be informed by their past experiences of relationships. This informed the question asking participants about whether their voice relationships compare to other relationships in their life. However, my expectation had been that participants would make more explicit comparisons, which only happened in two cases. However, this may generally have influenced me to draw parallels between participants’ relationship with their voice and their external relationships.

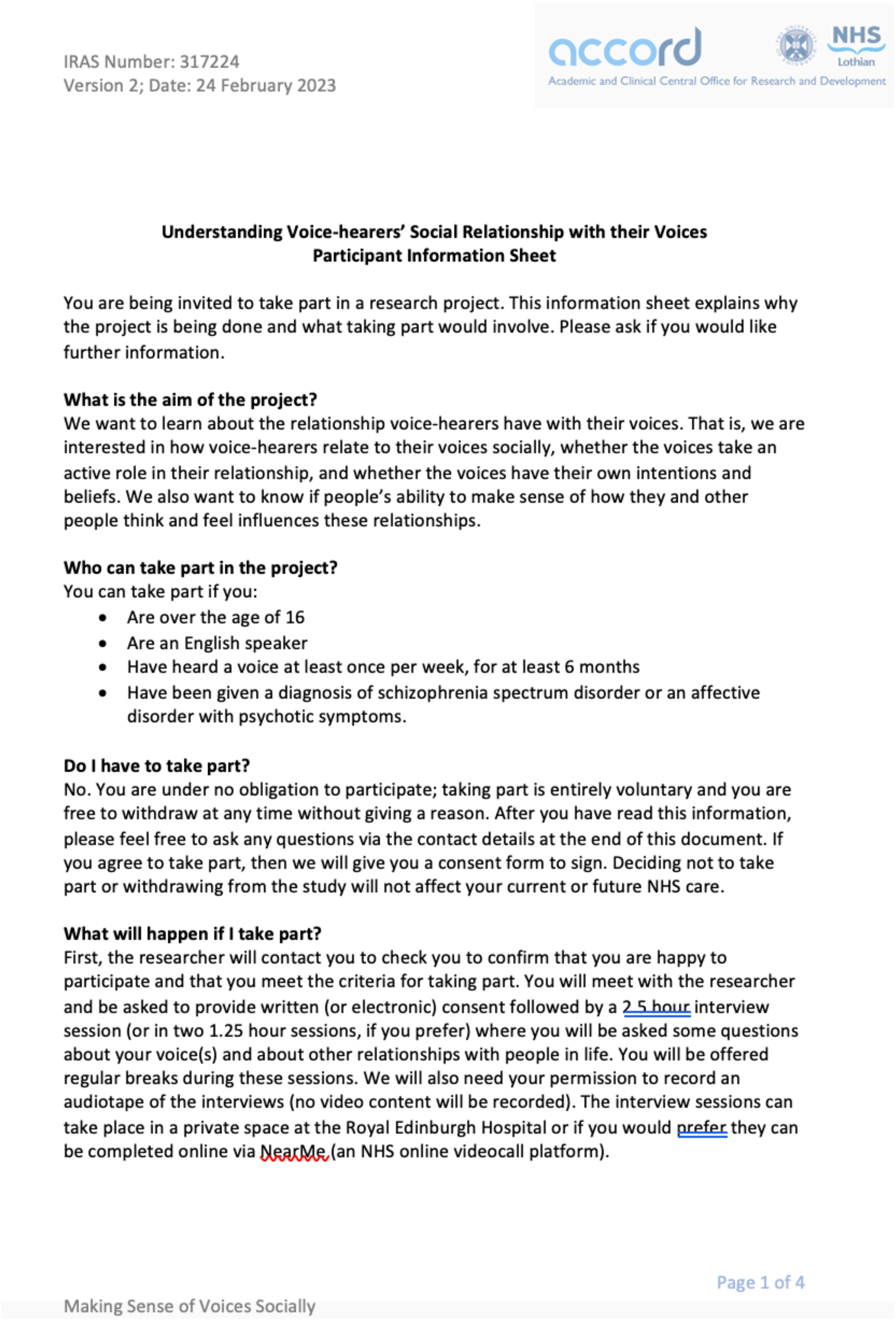
I had also wondered if participants had an understanding of their voices’ emotions and motivations, and therefore asked specific questions about this. This may have meant that participants felt they needed to provide an answer to this, and so may not have come up organically.

When my supervisor and I discussed using the adult attachment interview, I was interested, but hesitant. I knew that some of the questions would evoke difficult life experiences for participants, and that my reason for asking was exploratory and not therapeutic. I found this a challenging balance to strike at first in interviews. As a trainee clinical psychologist, I felt drawn to respond clinically. I constantly questioned whether I should respond clinically by reflecting back, and trying to understand more, or whether I stick to the questions so as not to influence the data.

I found the distinction between myself as a clinician or a researcher particularly difficult when I was interviewing participants who were currently inpatients in the service I work in. While they were not my cases, I would see them around the hospital, I was now in a privileged position of knowing information about them. While I was clear about my research role, I wondered what this was like for them, and whether this felt confusing. For some participants, this was the first time they had spoken in depth about their voices, at least in this service. Referrers in the service responded with interest to the research, and provided an opportunity to discuss voices from a psychological perspective in teams.

In terms of methodology, grounded theory was not the only methodology considered. At times, I considered an interpretative phenomenological analysis, however, grounded theory offered the flexibility to follow what the participant brought to the interviews, and to understand the process of relating. People’s beliefs about their voices and how these come about is a fairly well-trodden area of the literature, so grounded theory felt useful for understanding how a person relates to a characterised voice.

Appendix 4: Participant Information Sheet (PIS)



IRAS Number: 317224
Version 2; Date: 24 February 2023

Understanding Voice-hearers' Social Relationship with their Voices
Participant Information Sheet

You are being invited to take part in a research project. This information sheet explains why the project is being done and what taking part would involve. Please ask if you would like further information.

What is the aim of the project?

We want to learn about the relationship voice-hearers have with their voices. That is, we are interested in how voice-hearers relate to their voices socially, whether the voices take an active role in their relationship, and whether the voices have their own intentions and beliefs. We also want to know if people's ability to make sense of how they and other people think and feel influences these relationships.

Who can take part in the project?

You can take part if you:

- Are over the age of 16
- Are an English speaker
- Have heard a voice at least once per week, for at least 6 months
- Have been given a diagnosis of schizophrenia spectrum disorder or an affective disorder with psychotic symptoms.

Do I have to take part?

No. You are under no obligation to participate; taking part is entirely voluntary and you are free to withdraw at any time without giving a reason. After you have read this information, please feel free to ask any questions via the contact details at the end of this document. If you agree to take part, then we will give you a consent form to sign. Deciding not to take part or withdrawing from the study will not affect your current or future NHS care.

What will happen if I take part?

First, the researcher will contact you to check you to confirm that you are happy to participate and that you meet the criteria for taking part. You will meet with the researcher and be asked to provide written (or electronic) consent followed by a 2.5 hour interview session (or in two 1.25 hour sessions, if you prefer) where you will be asked some questions about your voice(s) and about other relationships with people in life. You will be offered regular breaks during these sessions. We will also need your permission to record an audiotape of the interviews (no video content will be recorded). The interview sessions can take place in a private space at the Royal Edinburgh Hospital or if you would prefer they can be completed online via NearMe (an NHS online videocall platform).

What will happen if I don't want to carry on with the project?
Taking part is entirely optional and you have the right to withdraw at any time, without needing to give a reason. Please note that your data can only be withdrawn before it has been pseudonymised (given a code number) and analysed, as we will no longer know which data is yours. This will be within 2 weeks of your interview.

If things change after you have given consent to participate and your mental health worsens to the point where taking part might impact you negatively, we will suggest pausing your participation in the study. Should this be the case, we will keep any data with have already collected, unless you express that you would like to withdraw, in which case we will destroy your data up until the point that it has been given a code number and analysed. Should you no longer be in a place to provide informed consent prior to participation, we will not include you in the study at that time, however we then will arrange to contact you at a later date to see if anything has changed.

What are the benefits of taking part?
You will be helping to develop a greater understanding of people's relationship with their voices. While we do not expect direct therapeutic benefits of taking part, some people report finding taking part in interviews cathartic and enjoyable.

What are the possible risks or disadvantages of taking part?
Talking about the experience of hearing voices may cause distress for some people, however we will do our best to support you throughout the process. If you do become upset, you can ask to pause or stop the interview at any time. If you need more support after taking part, we will also point you in the direction of additional support we think might be helpful.

Risks of participation (Covid-19)
We have taken specific steps to minimise the risk of exposure to the Coronavirus during the study by adhering to the Scottish Government guidance (https://www.gov.scot/coronavirus-covid-19/) Further, you will only interact with researchers who are well, and have had no known contact with COVID-19 positive individuals for the past 14 days. However, even with these control measures, there remains some additional risk of exposure from participating in this study.

What if I am physically unwell?
If you feel unwell or have been in contact with a COVID-19 positive individual in the past 14 days, then please contact the researcher (Laura Williams; Telephone: 07815 450403) and we will postpone or cancel the meeting.

How will we use information about you?
We will need to use information from you and your medical records for this research project. Your medical records will not be accessed by the researcher directly, but your current care provider will provide the researcher with your diagnosis from these, with your consent.

This information will include your initials, date of birth, gender, ethnicity, marital status, diagnosis and contact details (to contact you about the research and to contact you afterwards to share findings). This information will be used to make sure we get varied perspectives on the experience of social relationships with voices. This data may be reviewed by the university (who sponsor the study) to ensure the study is running correctly.

Only the interviewer will know that these details link to you. When stored your data will be labelled with a code number instead. We will keep all personal information about you safe and secure, this will be kept securely in encrypted NHS systems. With your consent, we will let your GP/Care Team know that you are taking part in the study, but we will not share any of your responses or study data with them.

We will keep what is said during the interviews confidential and anonymous within the research team, unless we become worried about you or someone else. In this case, it is our professional responsibility to share this with your care team, but we will try to discuss this with you first.

All audio-recordings will be destroyed once they have been transcribed. Your data will only be viewed by the researcher/research team. All electronic data will be stored on a password-protected computer file and all paper records will be stored in a locked filing cabinet. Your consent information will be kept separately from your responses in order to minimise risk.

Once we have finished the study, we will keep the pseudonymised research data (i.e. transcripts) for a minimum of 3 years from the end of the study so we can check the results. These will be confidentially destroyed after this time. Your participation will remain anonymous. We will ask for your consent to include short quotes from you when the findings are written up, but these will contain no identifiable information about you.

What are your choices about how your information is used?

- You can stop taking part in the study at any time, without giving a reason. All data possible will be removed. However, please note that within 2 weeks of the interview your data will be labelled with a code, so we will no longer know whose it is, so your transcript may still be included in the analysis.
- We need to manage your records in specific ways for the research to be reliable. This means that we won't be able to let you see or change the data we hold about you.

Where can you find out more about how your information is used?

You can find out more about how we use your information:

- At https://www.ed.ac.uk/data-protection/privacy-notice-research
- By asking one of the research team
- By sending an email to the University of Edinburgh Data Protection Officer at dpo@ed.ac.uk

The University of Edinburgh and NHS Lothian are the joint sponsors for this study based in the United Kingdom. We will be using information from you in order to undertake this study and will act as the data controller for this study. This means that we are responsible for looking after your information and using it properly. The University of Edinburgh and NHS will keep identifiable information about you until the researcher has shared research findings with you (if you have consented to this) and your data, that has been anonymised so that it cannot be linked to you, for a minimum of 3 years. This data may be used in future ethically approved research.

What will happen to the results of the project?

The results will be written up as a thesis which will be available on the University of Edinburgh thesis database, and we also hope to publish in a peer-reviewed journal. We will also present the data within services in NHS Lothian and will contact you after the study (with your permission) to share the findings with you.

Who is organising and funding the research?

This study has been organised by Laura Williams, Trainee Clinical Psychologist, at the University of Edinburgh/NHS Lothian and co-sponsored by the University of Edinburgh and NHS Lothian.

Who has reviewed the project?

The project has been reviewed by an independent Research Ethics Committee (REC) to ensure your safety, rights and wellbeing are protected. A favourable ethical opinion has been obtained from the South East Scotland REC 02. NHS Management Approval has also been given.

Please do not hesitate to ask us if you have any questions. It can also be helpful to talk to someone else about whether you would like to take part.

Researcher Contact details:

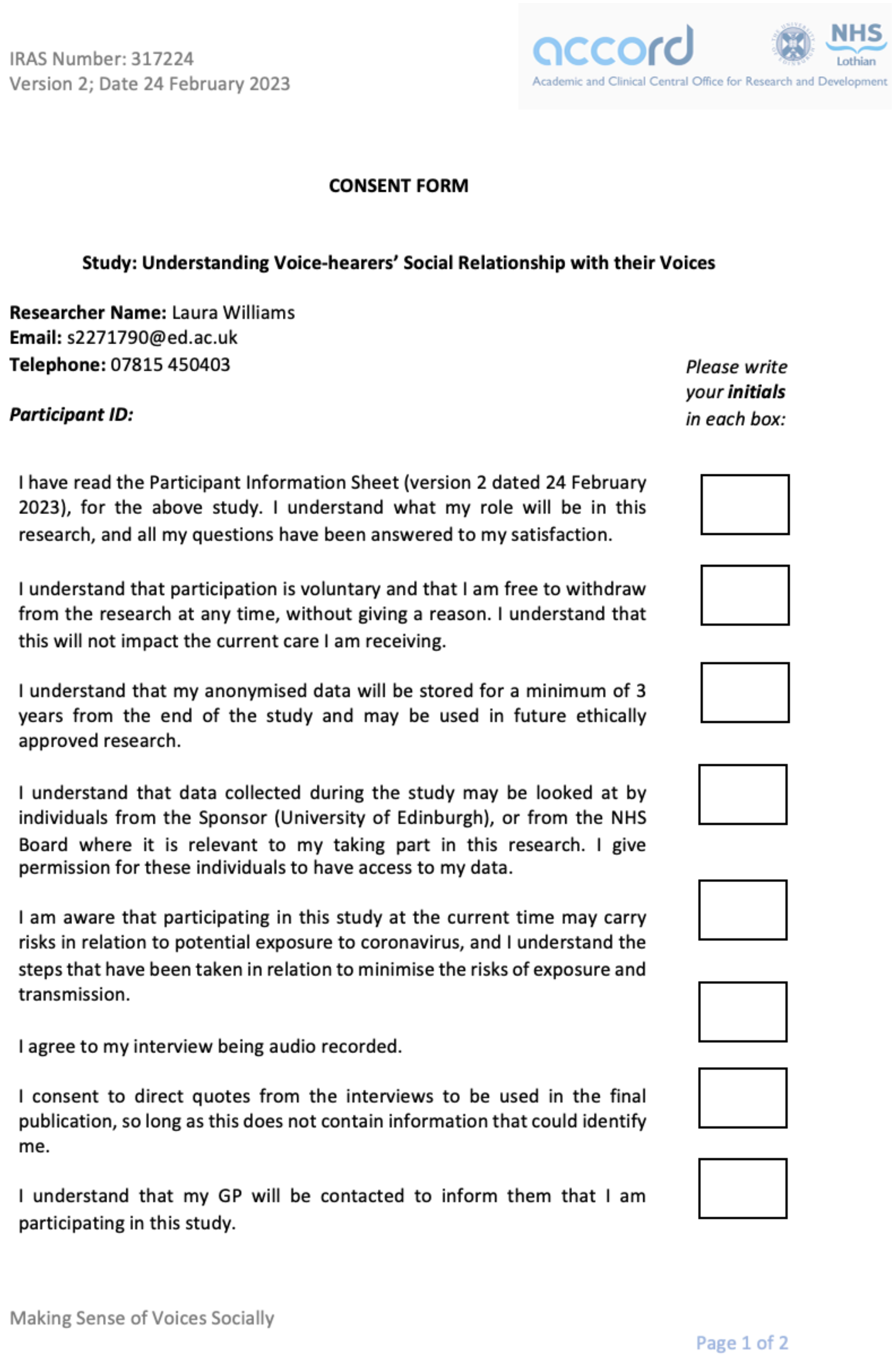
Laura Williams
Email: s2271790@ed.ac.uk
Telephone: 07815 450403

If you would like to speak to someone independent of the research team, or would like to make a complaint, you can email Tim Bird:

If you would like to make a complaint about the study please contact the University of Edinburgh Research Governance Team (cahss.res.ethics@ed.ac.uk).

Thank you for taking the time to read this information sheet.

Appendix 5: Consent Form



IRAS Number: 317224
Version 2; Date 24 February 2023

Academic and Clinical Central Office for Research and Development

CONSENT FORM

Study: Understanding Voice-hearers' Social Relationship with their Voices

Researcher Name: Laura Williams
Email: s2271790@ed.ac.uk
Telephone: 07815 450403

Participant ID:

*Please write your **initials** in each box:*

I have read the Participant Information Sheet (version 2 dated 24 February 2023), for the above study. I understand what my role will be in this research, and all my questions have been answered to my satisfaction. ☐

I understand that participation is voluntary and that I am free to withdraw from the research at any time, without giving a reason. I understand that this will not impact the current care I am receiving. ☐

I understand that my anonymised data will be stored for a minimum of 3 years from the end of the study and may be used in future ethically approved research. ☐

I understand that data collected during the study may be looked at by individuals from the Sponsor (University of Edinburgh), or from the NHS Board where it is relevant to my taking part in this research. I give permission for these individuals to have access to my data. ☐

I am aware that participating in this study at the current time may carry risks in relation to potential exposure to coronavirus, and I understand the steps that have been taken in relation to minimise the risks of exposure and transmission. ☐

I agree to my interview being audio recorded. ☐

I consent to direct quotes from the interviews to be used in the final publication, so long as this does not contain information that could identify me. ☐

I understand that my GP will be contacted to inform them that I am participating in this study. ☐

Making Sense of Voices Socially

Page 1 of 2

For the following optional item please initial the box that applies.
I would like to be provided with a written summary of the findings once the study has ended. I give permission for my contact details to be retained for this purpose and the researcher to contact me.

☐ Yes ☐ No

I agree to take part in the above research. ☐

Name of person giving consent: ………………………………………………

Signature: ……………………………… Date: ……………

Name of person taking consent: ………………………………………………

Signature: ……………………………… Date: ……………

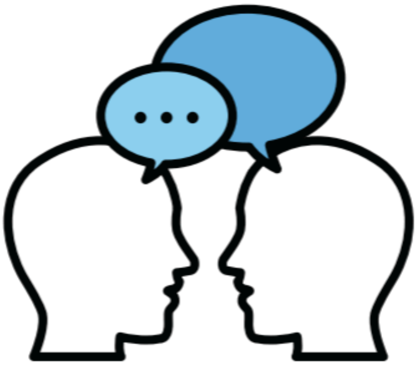
1x original – into Site File; 1x copy – to Participant

Appendix 6: Poster

Study: Understanding Voice-hearers' Social Relationship with their Voices

What is the aim of the study?

Researchers at the University of Edinburgh want to know about how voice-hearers socialise with their voices and view them as having their own intentions and beliefs. We also want to know if people's ability to understand the intentions and beliefs of themselves and others influences this.



What does the study involve?

- A 2.5 hour interview session (or in two 1.5 hour sessions) where you will be asked some questions about your voice(s) and about other relationships.
- You will be offered regular breaks.
- We will ask your permission to take audio recordings of the interviews.

Who can take part in the project?

Adults over the age of 16 who have heard a voice at least once per week, for at least 6 months, and who have been given a mental health diagnosis, such as psychosis.

Who is conducting the research?

My name is Laura Williams, and I'm a Trainee Clinical Psychologist at the University of Edinburgh/NHS Lothian. I am the primary researcher on this study.

How to contact me:

Please don't hesitate to contact me via:

Email: s2271790@ed.ac.uk
or *Telephone:* 07815 450403

Version 2 24/Feb/23; IRAS: 317224

Appendix 7: Protocol

Non-CTIMP Study Protocol

Study Title: Understanding Voice-hearers' Social Relationship with their Voices.

	The University of Edinburgh College of Arts, Humanities and Social Sciences 57 George Square Edinburgh EH8 9JU and Lothian Health Board ACCORD The Queen's Medical Research Institute 47 Little France Crescent Edinburgh EH16 4TJ
Protocol authors	**Laura Williams** **Academic Supervisor: Dr Helen Griffiths** **Clinical/Field Supervisor: Dr Audrey Millar**
Chief Investigator	**Laura Williams, Trainee Clinical Psychologist**
Sponsor number	CAHSS2209/04
REC Number	**South East Scotland REC 02**
Version Number and Date	Date and version No: 24 February 2023 V2

:

CONTENTS

To update the table of contents, highlight the existing table of contents; right click "update fields" and OK

LIST OF ABBREVIATIONS

ACCORD	Academic and Clinical Central Office for Research & Development - Joint office for The University of Edinburgh and Lothian Health Board
CI	Chief Investigator
ICF	Informed Consent Form
PIS	Participant Information Sheet
GCP	Good Clinical Practice
ICH	International Conference on Harmonisation
PI	Principal Investigator
QA	Quality Assurance
REC	Research Ethics Committee
SOP	Standard Operating Procedure
AAI	Adult Attachment Interview
PSYRATS-AH	Psychotic Symptoms Ratings Scale

1 INTRODUCTION

1.1 BACKGROUND

Introduction

Auditory verbal hallucinations (or voice-hearing) has been described an involuntary perceptual experience that occurs without an appropriate external stimuli (Longden et al., 2011). Maijer et al. (2017) concluded in their meta-analysis that the mean lifetime prevalence for hearing voices is around 9.6% that the prevalence of voice-hearing decreases with age from 12.4-12.7% in children to 5.8% in adults and 4.5% in older adults. It has been reported that around 25% of people who hear voices meet the criteria for a psychotic disorder diagnosis (Leed-Smith & Barkus, 2013).

Approaches to Understanding Auditory Verbal Hallucinations

Cognitive models of auditory verbal hallucinations (AVHs), commonly referred to as ‘voices’, have suggested that an individual’s experience of hearing voices, and whether they cause distress, is determined by the person’s beliefs about voices, which is influenced by their current and previous experiences of relationships (Birchwood & Chadwick, 1997; Chadwick & Birchwood, 1994). Cognitive theories also suggest that voices are internally generated events that are misinterpreted as from an external source (Bentall, 1990).

More recently, following the Hearing Voices Movement, there has been a transition to considering people’s experiences of voice-hearing more in terms of their relationships with their voices (Hayward, Berry & Ashton, 2011). Several theories have emerged to explore these relationships, such as Benjamin’s Structural Analysis of Social Behaviour (SASB; Benjamin, 1989) model of social interactions; Gilbert’s Social Rank Theory (Gilbert & Allen, 1998) and Birtchnell’s Relating Theory (Birtchnell, 1996, 2002).

Benjamin (1989) suggested that people’s relationships with their voices can be considered on the basis of the reciprocal processes that reflect the degree of affiliation (e.g. hostile actions leading to hostile responses) and interdependence with their voice (e.g. controlling actions eliciting submissive responses). Benjamin (1989) concludes that all voice-hearers had personally coherent relationships with their voices, and that these may be connected with occurrences in their external world, for example, their relationships with the voice can mirror interactive patterns with a family, and these at times can be more satisfactory than reality. Thomas, McLeod and Brewin (2009) suggested this framework can indeed be applied to voices as reliably as in external social relationships. However, they found weaker complementary relationships between control and submission, which did not reach significance for voice control-hearer submission.

Gilbert’s social rank theory (Gilbert & Allen, 1998) suggests that humans will either dominate or subordinate others via hostile-dominant signalling (e.g. commands/orders or verbal attacks) within a social environment in order to manage competition for resources. Gilbert et al. (2001) suggest that this relationship pattern can be applied to voice-hearing, and so, if hearers perceived their voice as an attack from an omnipotent, malevolent other seeking to dominate, their coping responses might be to defend or submit. Birchwood et al., (2000) looked at whether the relationship between hearer and voice is congruent with their wider social relationships, this was confirmed, but with higher differentials of power and rank between hearer and voice, which favoured the voice.

Birtchnell (1996, 2002) suggests that relating occurs on two axes: proximity and power. The proximity axis is a continuum from close (becoming involved) to distant (remaining separate) and the power axis bisects this through the middle and falls on a continuum of lowerness to upperness. Haywood (2003) found associations between relating to voices and to significant others from this perspective, and argued that if a hearer's previous experiences of social relating were impoverished, their relating might lack versatility. Chin et al. (2009) explored the relevance of Birtchnell's theory using Interpretative Phenomenological Analysis (IPA) to interpret the subjective accounts of 10 voice-hearers. They found issues of power were relevant and both individuals and their voices used various strategies to maintain and regain power.

The outlined perspectives offer slight differences in their description of hearers' relationships with their voices, for example Benjamin's (1989) theory views relationships with voices as a reciprocal process, whereas Gilbert (2001) views the relationship defined by whether the voice-hearer view themselves as more or less powerful than the voice. Birtchnell's (1996, 2002) theory considers the proximity aspect of relationships, that is not considered by the other models. Sorrell, Hayward and Meddings (2010) have found that position of distance amongst voice-hearers is significantly associated with distress, and that distancing oneself from the voice can increase distress. Each place emphasis on power dynamics and argue that this often reflects voice-hearers social realities, but none consider the impact of a voice-hearers ability to understand the mental states of others. More recently, researchers have begun to explore how other aspects of voices might influence how people relate to them (Alderson-Day et al., 2021).

Voices as Social Agents

David (2004) describes voices as having speech-like qualities, and being meaningful to the person experiencing them, and often personified, that is, with a distinct 'person-like' identity. While they can be associated with psychological distress (Birchwood & Chadwick, 1997), people have also described their voices as reducing social isolation and offering guidance (Honig et al., 1998; Miller, O'Connor & DiPasquale, 1993). Beaven (2011) proposes that voices can be an important indicator of a person's life history and relationship to their social world. Wilkinson and Bell (2016) discuss that the representation of voices as agents is important in understanding how and why they occur. They argue that the agency of voices is represented with differing degrees of depth: absent agency, agency without individualization, internally individualized identity and externally individualized identity. They describe individualised agency as when hearers experience a specific agent that remains consistent over time. Corstens and Longden (2013) report that in 80% of voice hearers an individualised agent could be formulated.

Recent studies describe 'personified' or 'characterised' voices (Alderson-Day et al., 2021; Ward et al., 2021) that are associated with specific character traits, such as attitudes, beliefs and experiences. Alderson-Day et al. (2021) explored a range of properties reported by people who hear voices, including whether they experienced visual hallucinations, 'felt presence' and whether they felt related to early trauma experiences, They concluded found that personified voices were distinguished less by being commanding or related to trauma, than by how conversational and companionable they are. This research recruited participants from Early Intervention in Psychosis services, therefore it might be difficult to generalise their findings to more chronic presentations.

Voice Hearing and Attachment

Attachment theory (Bowlby, 1980) suggests that our early relationships influence our interpersonal functioning and the strategies we use for regulating distress through our cognitive representations about the self and others in relationships. Growing up with responsive caregivers leads individuals to develop secure attachment styles that are associated with more positive self-image, ability to self-soothe and greater ease in forming attachments with others. Conversely, it is proposed that inconsistent or overly intrusive responses from the caregiver result in an insecure-anxious attachment style that is associated with poorer self-image, and fear of rejection. If the caregiver is consistently neglectful or critical, an individual is likely to develop insecure-avoidant attachment, this is related to negative beliefs about others and avoidance of relationships (Crowell & Treboux, 1995; Shaver & Mikulincer, 2002).

There is a growing body of literature exploring the relationships between attachment and psychosis, and more recently the impact of attachment style on people's experiences of hearing voices. It has been demonstrated that a large proportion of those with psychosis have insecure attachment styles, and that this is associated with poorer outcomes in service engagement, interpersonal problems and severe trauma (Gumley et al., 2014). Berry et al. (2012) found small but significant positive associations between attachment anxiety and severity of voice hearing and distress related to this, but no associations between attachment avoidance and these outcomes. The researchers noted that more extensive interviewing regarding relationships with voices might have given a better indication of individuals' perceptions of degree of control, rejection, criticism and threat from voices.

Reflective Functioning

Previous research on interpersonal frameworks in voice-hearing have neglected to consider people's perceptions of theirs and others' mental states. Mentalizing, or reflective function (RF), is considered to emerge in the context of secure attachment (Fonagy et al., 2002; Meins et al., 1998). Mentalization is defined as the ability of an individual to understand their mental state and that of others and how these impact on cognitions, emotions and behaviour (MacBeth et al., 2011). According to Weijers et al. (2018) abuse in childhood has been linked to impaired or delayed development of mentalizing.

Debanne et al. (2016) propose that self-mentalisation, or mentalization of own bodily and mental states might moderate the risk of developing psychosis. They suggest that in failing to integrate own mental states with high-order cognitive processes, those on the continuum of psychosis may misattribute internal stimuli to external sources which leads to the development of positive symptoms, such as AVHs.

While previous studies do not demonstrate a correlation between mentalising ability and severity of positive and negative symptoms (MacBeth et al., 2011, Weijers et al., 2018), there does not yet appear to be literature on how this influences people's perceptions of these experiences.

Fonagy and Allison (2011) argue that the capacity to mentalise is important in the development of relationships, and this has been found to be impaired in individuals with mental health difficulties. An initial study of RF in psychosis (MacBeth et al., 2011) found that the scores in their first episode sample were comparable to those with other severe mental health difficulties (Fonagy et al., 1996). The researchers did not find a relationship between psychotic symptomatology and RF, but reported that RF was lower for individuals with an insecure-avoidant attachment style than those with an insecure-anxious attachment style. A number of studies have found that 'Theory of Mind', the ability to attribute mental states to ourselves and others, is impaired in people who have a diagnosis of schizophrenia (Brune, 2005; Frith, 1992), but it is noted that Theory of Mind deficits are not common to all individuals with psychosis (Braehler & Schwannauer, 2012). Meanwhile, Achim et al. (2012) have also found that mentalising is impaired in first-episode psychosis patients and that this is specific to mentalising about social interactions, however their study focused primarily on emotional mental states as opposed to intentions/desires or knowledge/beliefs. They suggest that this might be a useful aspect to consider in how people with psychosis respond to others. It might also be valuable to consider this perspective in how people relate to their voice.

1.2 RATIONALE FOR STUDY

Alderson-Day et al. (2021) have suggested that people distinguish personified voices, not by their commanding qualities or connection with trauma, but by their ability to provide companionship. While people's experience of hearing voices has been well-researched, to date it has not focused on the process of people connecting to their voices as social agents.

The literature outlined in the previous section describes people's relationships with their voices as similar to those experienced in the external world. People's capacity for mentalising is an essential component of creating harmonious relationships, therefore it is likely that people with lower mentalising capacity will have more difficult relationships with their voices. This has thus far been a neglected area in the current literature on voice-hearing and on reflective functioning and psychosis.

Clinical Implications

There has been a movement towards relational approaches to treatment of distressing voices that aim to improve relationships between the hearer and the voice (Craig et al., 2018; Longden et al., 2021). A greater understanding of factors that might influence these therapies, such as individual attachment style and mentalising capacity, therefore seems important in optimising these therapies.

Berry and Bucci (2015) argue that insecure attachment styles have been associated with poorer outcomes and engagement, and therefore should be considered routinely in assessment and formulation in voice-hearing. They also highlight the importance of being more trauma-informed in assessments of voice-hearers.

Study Aim

While there is a growing body of literature exploring the impact of attachment style on people's experiences of hearing voices, as far as the researcher is aware, there has been limited exploration of the contribution of voice-hearers reflective functioning on how they experience their voices. The proposed research therefore seeks to explore how people experience their voices as social agents, and their interpretation of their intentions and desires, and to consider how this is affected by their capacity for RF. This will be completed through semi-structured interview measures using Grounded Theory methodology (Charmaz, 2006).

Risks and Benefits of taking part

Potential risks

Impact of taking part:

Distress caused by reflecting on difficult relationships, or by talking about hearing voices could potentially occur. These risks will be mitigated through measures such as: debriefing with participants after the interviews and providing them with a paper debrief sheet that gives key mental health contact details (e.g. Samaritans); providing regular breaks and reminding participants that they can take a break at any time; regularly checking in with participants and being responsive to their needs; making participants aware that they can withdraw from the study without having to provide a reason at any time.

As a trainee Clinical Psychologist who has worked with people with this psychosis spectrum diagnoses previously I have experience in providing support and managing distress. I will also have regular supervision with my research team which consists of two qualified Clinical Psychologists who work in the field of psychosis, who are able to offer their expertise and support.

Involvement of Potentially Vulnerable Participants:

The Declaration of Helsinki, describes vulnerable groups and individuals as those who "may have an increased likelihood of being wronged or of incurring additional harm." (Gordon, 2020; World Medical Association, 2013). The Declaration suggests that people are vulnerable because of a reduced ability to provide informed consent: "Some research populations are particularly vulnerable and need special protection. These include those who cannot give or [cannot] refuse consent for themselves …" and also include those "who may be vulnerable to coercion or undue influence." Individuals that are identified as not having the capacity to consent will be excluded from the study, as will individuals considered to be experiencing a mental health crisis. Participants will be given a minimum of 24hours with a participant information sheet to consider whether or not they wish to take part.

Capacity to Consent:

According to the Mental Capacity Act (2005) participants will be assumed to have capacity unless an assessment has suggested that they do not. The researchers will not themselves carry out capacity assessments, but when completing the consent form the participants understanding of the research they are participating in will be checked.

Burden of Interview Schedule:

The interview Schedule might also be quite burdensome for participants, as it is rather lengthy. It might be that participants are deterred by this and that this puts a large burden on them. This risk of this will be reduced by offering participants the choice of participating online or in person, so that they are able to participate via the most convenient method for them. Participants will be offered the option of completing this in one session or two sessions, so that their needs can be better accommodated. Previous studies have also demonstrated that participants often enjoying taking part in qualitative interviews, describing them as cathartic and enjoyable (Carter et al., 2008), so it may be that participants consider taking part to be a valuable experience.

Power Dynamics in Interviews

In situations where there is an interviewer and an interviewee, this can create a power imbalance due the assignment of roles. This will be managed by letting the participant know that consenting to take part is completely option and that they have the right to withdraw at any time without giving a reason. Participants will also be empowered by allowing them to take control of when/how often they have breaks, giving them choice in how the interview takes place (e.g. online, over 1 or 2 sessions). The researcher will also check in with participants regularly to ensure they are okay to answer the questions and check if they would like a break. The researcher will endeavour to make the interview environment relaxed and informal, and will aim to use a friendly rather than authoritative tone at all times. Furthermore, Cassell (1982) has argued that qualitative interviews are 'voluntary, open-ended and reciprocal' which therefore gives some power to the participants.

Potential Benefits to Participants

While there are no perceived direct benefits from participation, it has been suggested that qualitative interviews provide participants with a sense of catharsis, self-acknowledgment, empowerment and healing as well as enjoyable (Hutchinson, Wilson and Wilson, 1994; Carter et al., 2008). They argue that participants have suggested that they feel relief from sharing their story with an engaged, accepting listener.

In a study of schizophrenia (Abbott, 1992) a participant said that being kept busy was helpful for reducing hallucinations and depression, and one participant is quoted as saying "I don't hear voices right now because I'm talking to you. That's one of the reasons I came here, to get away from the voices'.

2 STUDY OBJECTIVES

2.1 OBJECTIVES

2.1.1 Primary Objective

Question: How do people relate to their voices as social agents?

Objective: To ask people to reflect on their historical relationship with their voice/s and consider how much the voices feel like they have their own agency.

2.1.2 Secondary Objectives

Question: Does mentalising capacity influence how people see their voices as social agents?

Objective: To understand whether people's ability to understand the mental state of others influences their view of their voices as social agents. Mentalising capacity, which is operationalised as reflective functioning, will be scored when moments of spontaneous reflection are observed in the interviews.

3 STUDY DESIGN

Study Setting:

Primarily across mental health services in NHS Lothian. With the majority of participants being recruited from the Psychiatric Rehabilitation Team in NHS Lothian.

3.1 NUMBER OF PARTICIPANTS

Study Population:

We will aim to recruit 12 adult participants (over age 16) that have been given a DSM-IV or ICD10 diagnosis of a schizophrenia spectrum disorder or affective disorder subcategories with psychotic symptoms. Participants will have experienced voice-hearing at least once per week, persisting for at least 6 months.

Recruitment:
Participants will be recruited from NHS Lothian mental health services.
The main NHS Lothian recruitment site will be the Psychiatric Rehabilitation team.

However, if Covid restrictions mean that recruitment is no longer possible from the NHS, participants will be recruited online.

Recruitment period:
February 2023 – January 2024

3.2 INCLUSION CRITERIA

- Over the age of 16
- Under the care of a specialist mental health team
- Able to speak and read English to sufficient proficiency to provide consent
- Have heard a voice at least once per week, for at least 6 months
- A clinical diagnosis of Schizophrenia spectrum disorder (ICD10 F20–29), including first episode psychosis, or affective disorder with psychotic symptoms (ICD-10 F30–39, subcategories with psychotic symptoms), determined through discussions with referring clinician and participant.

3.3 EXCLUSION CRITERIA

- Non-English Speakers
- Primary diagnosis of substance disorder (secondary diagnosis accepted)
- Lacking capacity to give consent
- Hearing impairment that impairs ability to complete interviews
- Client on researcher's caseload

3.4 CO-ENROLMENT

Co-enrolment in any study is permitted as long as this does not influence the frequency with which the participant has heard voices in the past 6 months. However, the researcher will discuss this with the participant to ensure that they are not being overburdened with time taken participating in research, and that researchers on other studies they are participating in are aware of their participation in this study.

4 PARTICIPANT SELECTION AND ENROLMENT

4.1 IDENTIFYING PARTICIPANTS

Potential participants will mainly be identified by their care providers within mental health services in NHS Lothian. The researcher will raise awareness of the project by visiting services by presenting the project to teams, providing them with posters and details about essential criteria, and completing a specialist placement within a psychiatric rehabilitation team in order to foster relationships with the team.

The researcher will ask care providers to ask potential participants for permission for the researcher to contact them and how it is best to contact them. The researcher will then contact potential participants and ask whether the person hears voices and how long for and their age. The researcher will request that referrers provide diagnosis upon referral to ensure that potential participants meet the diagnosis requirements.

Diagnosis is required to ensure that they meet the criteria of schizophrenia or psychosis rather than another diagnosis that might impact the homogeneity of the sample. People who have heard a voice for more than 6 months and at least once per week will be identified, this is to ensure that they have had sufficient interaction with their voice to develop a relationship.

Online Recruitment

Should a Covid-19 Lockdown occur, and non-essential NHS research halted, participants will be opportunistically recruited online through contacting Hearing Voices Groups and social media e.g Twitter.

4.2 CONSENTING PARTICIPANTS

The participant must sign and date the latest approved version of the Informed Consent form before any study specific activities are undertaken. As there might be difficulties involved in meeting participants in person due to Covid19, electronic versions of the consent form completed on Microsoft Word will be considered sufficient until the researcher is able to meet with the participant in person.

Printed versions of the PIS and ICF will be presented to the participants detailing no less than: the exact nature of the study; what it will involve for the participant; the implications and constraints of the protocol; any risks involved in taking part. It will be clearly stated that the participant is free to withdraw from the study at any time for any reason without prejudice to future care, and with no obligation to give the reason for withdrawal.

The participant will be allowed as much time as needed to consider the information, but will be required to have had the PIS for at least 24hours before providing consent. They will be given the opportunity to question the Investigator, their GP or other independent parties to decide whether they will participate in the study. Written Informed Consent will then be obtained by means of participant dated signature and dated signature of the person who presented and obtained the Informed Consent. A copy of the signed Informed Consent will be given to the participant. The original signed form will be retained at the main NHS Lothian Recruitment site.

4.2.1 Withdrawal of Study Participants

Participants are free to withdraw from the study at any point or a participant can be withdrawn by the Investigator. If withdrawal occurs, the primary reason for withdrawal will be documented in the participant's case report form, if possible. The participant will have the option of withdrawal from:

(i) all aspects of the trial but continued use of data collected up to that point . To safeguard rights, the minimum personally-identifiable information possible will be collected.

Discontinuation Criteria:

Each participant has the right to withdraw from the study at any time. (In addition, the Investigator may discontinue a participant from the study at any time if the Investigator considers it necessary for any reason including:

- Ineligibility (either arising during the study or retrospectively having been overlooked at screening)
- No longer considered to have the capacity to consent according to the Mental Capacity Act (2005). This has been described in the PIS as it 'no longer being the right time to participate' as it has been pointed out by an expert by experience that many participants can find this terminology unhelpful.
- Withdrawal of Consent

Withdrawal from the study will result in exclusion of the data for that participant from analysis, up until the point that the audio recording has already been transcribed and anonymised, as it may not be possible to differentiate this transcript from other participants data.

The reason for withdrawal by researcher (and by participant, if this information is volunteered) will be recorded in a study file.

5 STUDY ASSESSMENTS

5.1 STUDY ASSESSMENTS

Participant Pathway:
Step 1: Given PIS (by referrer or research if participant has expressed interest and wants to be contacted). They will have this for at least 24 hours before they are asked if they want to provide informed consent.
Step 2: Researcher meets with participant (online or in person) and will go through key details of the PIS to ensure participant is clear what they are being asked to do. Informed consent will then be taken in written form (if in person) or if the interview takes place online a Microsoft Teams Form will be used to allow participants to verify their consent electronically.
Step 3: The researcher will then ask for demographic information i.e. date of birth, ethnicity, gender, marital status, hearing impairments, age of onset of voice-hearing, age of first contact with MH services.
Step 4: The researcher will then complete a Psychotic Symptoms Ratings Scale (PSYRATS; auditory hallucinations subscale only), a semi-structured interview measure that looks at aspects of people's voice-hearing experiences e.g. severity, distress caused. This will allow us to contextualise their voice hearing experience.
Step 5: The interview schedule devised by the researcher about relationship with voices will be completed
Step 6: The Adult Attachment Interview will be completed.
The participant will then be thanked and provided with a debrief form.

The entire study procedure is estimated to take around 2.5hours.

Assessment	Screening	Meeting 1	Meeting 2 (if multiple sessions required)
Assessment of Eligibility Criteria	☐		
Participant information sheet provided	☐		
Confirming understanding of PIS	☐		
Written informed consent		☐	
Demographic data		☐	
PSYRATS-auditory hallucinations subscale		☐	
Main Grounded Theory Interview		☐	
Adult Attachment Interview		☐	☐
Debrief		☐	☐

6 DATA COLLECTION

Intensive, in-depth interviews will be conducted that allow the researcher to non-judgementally explore participants individual experiences (Charmaz, 2006). The interview will be audio recorded on a digital audio recorder, encrypted to the standard of AES256 or equivalent, it has been outlined in the PIS that participation is contigent on agreement to be audiorecorded.
During the interview process, the interviewer will also keep additional notes and ideas about the interview process in order to inform later coding and later interviews (Charmaz, 2006).

Measures:

Demographic Information
Participants will be asked for the following information: age, gender, marital status, ethnicity, highest level of education, age started hearing voices, duration of hearing voices.

Adult Attachment Interview (AAI; Main et al., 2002)
This is an 18-question semi-structured interview that asks participants to consider their early attachment relationships with their caregiver (Hesse, 1999). The protocol then asks participants about what they did when feeling upset, physically hurt or unwell and how their caregivers responded to this. They are then asked about experiences of rejection, any abuse and threats related to discipline. AAI transcripts can then be used to reliably classify attachment styles and measure reflective functioning (See Fonagy et al., 1998).

Reflective Functioning Scale (Fonagy et al., 1998)
This is a scale that can be used to rate a person's ability to ability to infer mind states in order to interpret behaviour, based on their responses on the AAI (Fonagy et al., 1998). Individual answers to specific demand questions (e.g. why do you think your parents behaved the way they did?') are ranked from -1 (negative RF) to 9 (exceptional RF). Individual ratings and the transcript as a whole are then considered to produce an overall RF score that ranges from absent (-1) to exceptional (9). The RF scale has demonstrated good discriminant validity and adequate inter-rater reliability.

The Psychotic Symptoms Rating Scale – Auditory Hallucinations subscale (PSYRATS-AH; Haddock, McCarron, Tarrier, & Faragher, 1999)
The PSYRATS is a commonly used standardised, semi-structured interview measure for assessing severity and distress caused by hallucinations, and contains a delusions and auditory hallucinations (AH) subscale. For the purposes of this study, only the AH subscale would be used. The interview rates the answers a participant provides from 0-4 (absent to more severe). The PSYRATS has demonstrated excellent inter-rater and retest reliability and validity.

This measure will be used to ensure participants meet a certain threshold of voice-hearing per week. While overall severity of voice-hearing will not be used as an exclusion criterion, it will provide a sense of the range of severity naturally existing in the sample.

Interview Schedule – Devised by researcher
Charmaz (2006) suggests using intensive qualitative interviewing that includes open-ended questions, but that it remains flexible in that if ideas and issues emerge within

the interviews, these leads can be followed. The interview will contain 'demand questions' that require a participant to engage in spontaneous mentalisation i.e. thinking about how others think, that have been adapted from the AAI.

All interview questions are attached in the Battery of Questions document submitted.

7 DATA MANAGEMENT

7.1.1 Personal Data

The following personal data will be collected as part of the research:
Name, Contact details (for the purpose of arranging participation), Date of Birth, Ethnicity, Marital Status, Diagnosis Relevant to study (i.e. psychotic spectrum disorder).
Personal data will be stored by the research team on the Psychiatric Rehabilitation Team (H://) drive and paper copies of consent forms will be stored.
Personal data will be stored for the duration of the study (from entry point into the study until the study end (May 2024).

7.1.2 Data Information Flow

Data Management:

NHS Lothian and University of Edinburgh Information Governance and Data Management policies will be adhered to and GDPR guidelines will be followed. Identifiable data will be stored on NHS Lothian shared drives and password protected, identifiable data will include: recordings and consent forms. According to NHS Lothian policy an Olympus Dictaphone DS 9500/DS 9000 will be used to record the interviews. Audio recordings will be transcribed by hand.

They will transcribed as soon as is achievable after interview completion and will be stored on an NHS Departmental drive. The resulting transcript will be pseudonymised (i.e. any identifiable information will be redacted and labelled with a code). Any paper notes, including completed paper questionnaires will be scanned or typed out and stored electronically on an NHS Drive. These will be labelled with the pseudonym.

The recordings would then be deleted in line with policy. Once the data is pseudonymised it will be transferred and then stored on either the NHS approved University of Edinburgh DataStore or the researcher's password protected personal drive on the university server. The transcripts will be kept for a minimum of three years from the end of the project, after which they will be confidentially destroyed.

Electronic ICFs completed on Microsoft Word will be kept securely on a team NHS network drive, and then deleted at the end of the study; or paper copies will be stored in a locked cabinet in NHS office space until the study is completed. These will then be confidentially destroyed.

7.1.3 Transfer of Data

Data collected or generated by the study (including personal data) will not be transferred to any external individuals or organisations outside of the Sponsoring organisations.

7.1.4 Data Controller

A data controller is an organisation that determines the purposes for which, and the manner in which, any personal data are processed.

The University of Edinburgh and NHS Lothian are joint data controllers along with any other entities involved in delivering the study that may be a data controller in accordance with applicable laws (e.g. the site)

7.1.5 Data Breaches

Any data breaches will be reported to the University of Edinburgh and NHS Lothian Data Protection Officers who will onward report to the relevant authority according to the appropriate timelines if required.

8 STATISTICS AND DATA ANALYSIS

8.1 SAMPLE SIZE CALCULATION

The researcher will recruit 12 participants. Smith et al. (2009) suggest that for doctoral dissertations a sample size of between 4 and 10 interviewees could be sufficient for qualitative research. Morse (2000) suggests 20-30 participants for Grounded Theory research, but concedes that this will be adjusted due to other factors e.g. richness/quality of data, the topic being considered and the design. Charmaz (2006) points out that grounded theorists do not specify a pre-selected sample size and instead suggest that theoretical 'saturation' is what researchers should aim for. She suggests that if 'hefty claims' are being made by researchers, small sample sizes might invite scepticism.

The overall analysis will involve an initial GT exploration of people's experiences of their voices as social agents. It has been necessary to develop a rudimentary understanding of the topic area of voice hearing relationships in order to establish gaps in the literature. While Glaser and Strauss (1967) advise the researcher to delay the literature review so that the researcher can approach their topic area as a 'blank slate', Charmaz (2006) recognises that research proposals require a sophisticated knowledge of leading studies in the field, and so following this, one can let this material 'lie fallow' until after categories and analytic relationships have been analysed and then the literature review can be completed. Irrespective of this, GT is the best technique for the purposes of this study as it allows an understanding of social psychological processes to be developed, and as this study will consider voices as social agents, the data will fall within this category.

8.2 PROPOSED ANALYSES

The overall analysis will involve an initial GT exploration of people's experiences of their voices as social agents. It has been necessary to develop a rudimentary understanding of the topic area of voice hearing relationships in order to establish gaps in the literature. While Glaser and Strauss (1967) advise the researcher to delay the literature review so that the researcher can approach their topic area as a 'blank slate', Charmaz (2006) recognises that research proposals require a sophisticated knowledge of leading studies in the field, and so following this, one can let this material 'lie fallow' until after categories and analytic relationships have been analysed and then the literature review can be completed. Irrespective of this, GT is the best technique for the purposes of this study as it allows an understanding of social psychological processes to be developed, and as this study will consider voices as social agents, the data will fall within this category.

Analysis of Transcripts from Interview Schedule
After each interview conducted, it will be transcribed into written scripts and pseudonomised. Charmaz (2006) outlines that in classic GT (Glaser & Strauss, 1967) data collection and analysis occurs simultaneously in order that data collection is shaped in order to inform the emerging analysis.
GT methodology (Charmaz, 2006) will then be used to analyse the data produced from the interviews, as the study seeks to develop theory from rich data.

Coding
Step 1: The process of coding will first involve line-by-line coding of the transcript by hand, according to Glaser (1978), or as Gibson & Hartman (2014) suggest, coding segments or incidents. Notes (or memos) will be taken during the interviews in order to support this process (Chametzky, 2016). Initially, the full transcript will be coded. At this stage, the researcher will also look for important words used by participants that enhance richness to be used as *in vivo* terms i.e. they might be used as full quotations within the paper.
As each transcript will be coded after interview, this will allow the research to identify key themes.
Step 2: After the initial coding of the transcripts, the derived codes will be compared to identify relationships between codes, which will enable a theory regarding how people relate to their voices as social agents to be derived (Glaser, 1992; Chametsky, 2016). Through constant comparison the data will become saturated in order to develop categories.
Step 3: As categories develop, core categories will begin to emerge, and these will be organised and compared until saturation is achieved i.e. new themes cease emerging. Glaser (1978, 2005) then suggests that theoretical codes can then be used to conceptualise how the substantive codes of research may relate to each other as hypotheses to be integrated into a theory of people's experience of their voices as social agents.
In order to ensure internal consistency, the initial coding will be checked by a supervisor to ensure agreement. It is hoped that an expert-by-experience could be asked to review higher themes to ensure they feel these reflect the content of the original interviews.

Mixed-Methods Analysis using AAI and RF
AAIs will be transcribed and coded for attachment style and level of reflective functioning (see '*how will data be collected'* section). Fonagy's (1998) indicators of reflective functioning will be applied to passages of the AAI and primary interview schedule following demand questions which have allowed participants to demonstrate reflection on their own or others' mental states.
Following this, overall RF scores will be determined. Reflective functioning scores derived from scoring 'demand questions' in the primary interview will be used to group main themes from the primary narratives into two categories: 'negative or limited RF' and 'moderate to high RF' to determine if there are differences in how people relate to their voice depending on mentalising capacity.
Overall RF scores derived from the AAI will then be compared with overall RF scores derived from the primary interviews to determine if these are congruent.

9 RISKS

Risk level for this study is considered low, and participants will largely be recruited from mental health teams where they are under a named care provider, or based in a ward. Should an adverse event arise, this will be discussed within the research team and raised with the ethics committees to determine whether the adverse event is related to the study.

10 OVERSIGHT ARRANGEMENTS

10.1 INSPECTION OF RECORDS

Investigators and institutions involved in the study will permit trial related monitoring and audits on behalf of the sponsor, REC review, and regulatory inspection(s). In the event of audit or monitoring, the Investigator agrees to allow the representatives of the sponsor direct access to all study records and source documentation. In the event of regulatory inspection, the Investigator agrees to allow inspectors direct access to all study records and source documentation.

10.2 STUDY MONITORING AND AUDIT

The ACCORD Sponsor Representative will assess the study to determine if an independent risk assessment is required. If required, the independent risk assessment will be carried out by the ACCORD Quality Assurance Group to determine if an audit should be performed before/during/after the study and, if so, at what frequency.

Risk assessment, if required, will determine if audit by the ACCORD QA group is required. Should audit be required, details will be captured in an audit plan. Audit of Investigator sites, study management activities and study collaborative units, facilities and 3rd parties may be performed.

11 GOOD CLINICAL PRACTICE

11.1 ETHICAL CONDUCT

The study will be conducted in accordance with the principles of the International Conference on Harmonisation Tripartite Guideline for Good Clinical Practice (ICH GCP).
Before the study can commence, all required approvals will be obtained and any conditions of approvals will be met.

11.2 INVESTIGATOR RESPONSIBILITIES

The Investigator is responsible for the overall conduct of the study at the site and compliance with the protocol and any protocol amendments. In accordance with the principles of ICH GCP, the following areas listed in this section are also the responsibility of the Investigator. Responsibilities may be delegated to an appropriate member of study site staff.

Delegated tasks must be documented on a Delegation Log and signed by all those named on the list prior to undertaking applicable study-related procedures.

11.2.1 Informed Consent

The Investigator is responsible for ensuring informed consent is obtained before any protocol specific procedures are carried out. The decision of a participant to participate in clinical research is voluntary and should be based on a clear understanding of what is involved.

Participants must receive adequate oral and written information – appropriate Participant Information and Informed Consent Forms will be provided. The oral explanation to the participant will be performed by the Investigator or qualified delegated person, and must cover all the elements specified in the Participant Information Sheet and Consent Form.

The participant must be given every opportunity to clarify any points they do not understand and, if necessary, ask for more information. The participant must be given sufficient time to consider the information provided. It should be emphasised that the participant may withdraw their consent to participate at any time without loss of benefits to which they otherwise would be entitled.

11.2.2 Study Site Staff

The Investigator must be familiar with the protocol and the study requirements. It is the Investigator's responsibility to ensure that all staff assisting with the study are adequately informed about the protocol and their trial related duties.

11.2.3 Data Recording

The Principal Investigator is responsible for the quality of the data recorded in the CRF at each Investigator Site.

11.2.4 Investigator Documentation

- The Principal Investigator will ensure that the required documentation is available in local Investigator Site files ISFs.

11.2.5 GCP Training

For non-CTIMP (i.e. non-drug) studies all researchers are encouraged to undertake GCP training in order to understand the principles of GCP. However, this is not a mandatory requirement unless deemed so by the sponsor. GCP training status for all investigators should be indicated in their respective CVs.

11.2.6 Confidentiality

All evaluation forms, reports, and other records must be identified in a manner designed to maintain participant confidentiality. All records must be kept in a secure storage area with limited access. Clinical information will not be released without the written permission of the participant. The Investigator and study site staff involved with this study may not disclose or use for any purpose other than performance of the study, any data, record, or other unpublished information, which is confidential or identifiable, and has been disclosed to those individuals for the purpose of the study.. Prior written agreement from the sponsor or its designee must be obtained for the disclosure of any said confidential information to other parties.

11.2.7 Data Protection

All Investigators and study site staff involved with this study must comply with the requirements of the appropriate data protection legislation (including the General Data Protection Regulation and Data Protection Act) with regard to the collection, storage, processing and disclosure of personal information.

Computers used to collate the data will have limited access measures via user names and passwords.

Published results will not contain any personal data and be of a form where individuals are not identified and re-identification is not likely to take place

STUDY CONDUCT RESPONSIBILITIES

11.3 PROTOCOL AMENDMENTS

Any changes in research activity, except those necessary to remove an apparent, immediate hazard to the participant in the case of an urgent safety measure, must be reviewed and approved by the Chief Investigator.

Amendments will be submitted to a sponsor representative for review and authorisation before being submitted in writing to the appropriate REC, and local R&D for approval prior to participants being enrolled into an amended protocol.

11.4 MANAGEMENT OF PROTOCOL NON COMPLIANCE

Prospective protocol deviations, i.e. protocol waivers, will not be approved by the sponsors and therefore will not be implemented, except where necessary to eliminate an immediate hazard to study participants. If this necessitates a subsequent protocol amendment, this should be submitted to the REC, and local R&D for review and approval if appropriate.

Protocol deviations will be recorded in a protocol deviation log and logs will be submitted to the sponsors every 3 months. Each protocol violation will be reported to the sponsor within 3 days of becoming aware of the violation. All protocol deviation logs and violation forms should be emailed to QA@accord.scot

Deviations and violations are non-compliance events discovered after the event has occurred. Deviation logs will be maintained for each site in multi-centre studies. An alternative frequency of deviation log submission to the sponsors may be agreed in writing with the sponsors.

11.5 SERIOUS BREACH REQUIREMENTS

A serious breach is a breach which is likely to effect to a significant degree:

(a) the safety or physical or mental integrity of the participants of the trial; or

(b) the scientific value of the trial.

If a potential serious breach is identified by the Chief investigator, Principal Investigator or delegates, the co-sponsors (seriousbreach@accord.scot) must be notified within 24 hours. It is the responsibility of the co-sponsors to assess the impact of the breach on the scientific value of the trial, to determine whether the incident constitutes a serious breach and report to research ethics committees as necessary.

11.6 STUDY RECORD RETENTION

All study documentation will be kept for a minimum 3 years from the protocol defined end of study point. When the minimum retention period has elapsed, study documentation will not be destroyed without permission from the sponsor.

11.7 END OF STUDY

The end of study is defined as the last participant's last visit.

The Investigators or the co-sponsor(s) have the right at any time to terminate the study for clinical or administrative reasons.

The end of the study will be reported to the REC, and R+D Office(s) and co-sponsors within 90 days, or 15 days if the study is terminated prematurely. The Investigators will inform participants of the premature study closure and ensure that the appropriate follow up is arranged for all participants involved. End of study notification will be reported to the co-sponsors via email to resgov@accord.scot

A summary report of the study will be provided to the REC within 1 year of the end of the study.

11.8 INSURANCE AND INDEMNITY

The co-sponsors are responsible for ensuring proper provision has been made for insurance or indemnity to cover their liability and the liability of the Chief Investigator and staff.

The following arrangements are in place to fulfil the co-sponsors' responsibilities:

- The Protocol has been designed by the Chief Investigator and researchers employed by the University and collaborators. The University has insurance in place (which includes no-fault compensation) for negligent harm caused by poor protocol design by the Chief Investigator and researchers employed by the University.
- Sites participating in the study will be liable for clinical negligence and other negligent harm to individuals taking part in the study and covered by the duty of care owed to them by the sites concerned. The co-sponsors require individual sites participating in the study to arrange for their own insurance or indemnity in respect of these liabilities.
- Sites which are part of the United Kingdom's National Health Service will have the benefit of NHS Indemnity.
- Sites out with the United Kingdom will be responsible for arranging their own indemnity or insurance for their participation in the study, as well as for compliance with local law applicable to their participation in the study.

12 REPORTING, PUBLICATIONS AND NOTIFICATION OF RESULTS

12.1 AUTHORSHIP POLICY

Suggested text only - amend as appropriate.

Ownership of the data arising from this study resides with the study team.

13 REFERENCES

Abbott, F. (1992). Daily lives of people with schizophrenia living in the community. Unpublished doctoral dissertation, University of California, San Francisco.

Achim, A. M., Ouellet, R., Roy, M. A., & Jackson, P. L. (2012). Mentalizing in first-episode psychosis. *Psychiatry Research*, *196*(2-3), 207-213.

Department of Health (2005). *Mental Capacity Act*. London, HMSO.

Alderson-Day, B., Woods, A., Moseley, P., Common, S., Deamer, F., Dodgson, G., & Fernyhough, C. (2021). Voice-hearing and personification: characterizing social qualities of auditory verbal hallucinations in early psychosis. *Schizophrenia Bulletin, 47*(1), 228-236.

Beavan, V. (2011). Towards a definition of "hearing voices": A phenomenological approach. *Psychosis, 3*(1), 63–73.

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). The illusion of reality: A review and integration of psychological research on hallucinations. Psychological Bulletin, 107, 82–95.

Berry, K., & Bucci, S. (2016). What does attachment theory tell us about working with distressing voices? *Psychosis, 8*(1), 60-71.

Berry, K., Wearden, A., Barrowclough, C., Oakland, L., & Bradley, J. (2012). An investigation of adult attachment and the nature of relationships with voices. *British Journal of Clinical Psychology, 51*(3), 280-291.

Birchwood, M., & Chadwick, P. (1997). The omnipotence of voices: Testing the validity of a cognitive model. Psychological Medicine, 27, 1345–1353.

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.

Birtchnell, J. (1996). *How humans relate: A new interpersonal theory*. Hove: Psychology Press.

Birtchnell, J. (2002). *Relating in psychotherapy: The application of a new theory*. Hove: Brunner-Routledge.

Bowlby, J. (1980). Attachment and Loss: Vol. 3. New York: Basic Books.

Braehler, C., & Schwannauer, M. (2012). Recovering an emerging self: Exploring reflective function in recovery from adolescent-onset psychosis. Psychology and Psychotherapy: Theory, Research and Practice, 85(1), 48-67.

Brüne, M. (2005). "Theory of mind" in schizophrenia: a review of the literature. *Schizophrenia bulletin*, *31*(1), 21-42.

Carter, S. M., Jordens, C. F., McGrath, C., & Little, M. (2008). You have to make something of all that rubbish, do you? An empirical investigation of the social process of qualitative research. Qualitative Health Research, 18(9), 1264-1276.

Chadwick, P., & Birchwood, M. (1994). The omnipotence of voices: A cognitive approach to auditory hallucinations. British Journal of Psychiatry, 164, 190–201.

Chametzky, B. (2016). Coding in Classic Grounded Theory: I've Done an Interview' Now What? *Sociology Mind*, *6*(4), 163-172. doi: 10.4236/sm.2016.64014.

Chin, J. T., Hayward, M., & Drinnan, A. (2009). 'Relating' to voices: Exploring the relevance of this concept to people who hear voices. *Psychology and Psychotherapy: Theory, Research and Practice, 82,* 1–17.

Corstens, D. and Longden, E. 2013: The origins of voices: links between life history and voice hearing in
a survey of 100 cases. *Psychosis, 5*(3), 270–85.

Craig, T. K., Rus-Calafell, M., Ward, T., Leff, J. P., Huckvale, M., Howarth, E., Emsley, R., & Garety, P. A. (2018). AVATAR therapy for auditory verbal hallucinations in people with psychosis: a single-blind, randomised controlled trial. *The Lancet Psychiatry*, *5*(1), 31-40.

Crowell, J. A., & Treboux, D. (1995). A review of adult attachment measures: Implications for theory and research. Social Development, 4, 294–327.

David, A. S. (2004). The cognitive neuropsychiatry of auditory verbal hallucinations: An overview. Cognitive Neuropsychiatry, 9, 107–123.

Emanuel, E. J., Wendler, D., & Grady, C. (2000). What makes clinical research ethical?. *JAMA*, *283*(20), 2701–2711. https://doi.org/10.1001/jama.283.20.2701

Fonagy, P., & Allison, E. (2012). What is mentalization? The concept and its foundations in developmental research. *Minding the child: Mentalization-based interventions with children, young people and their families*, 11-34.

Fonagy, P., Gergely, G., Jurist, E. L., & Target, M. (2002). *Affect regulation, mentalization and* the development of the self. London: Karnac.

Fonagy, P., Leigh, T., Steele, M., Steele, H., Kennedy, R., Mattoon, G., Target, M., & Gerber, A. (1996). The relation of attachment status, psychiatric classification, and response to psychotherapy. *Journal of Consulting and Clinical Psychology, 37(1), 22–31.*

Frith, C. (1992). *The cognitive neuropsychology of schizophrenia.* Sussex: Lawrence Erlbaum Associates.

Gibson, B., & Hartman, J. (2014). *Rediscovering Grounded Theory.* London, UK: Sage.

Gilbert, P., & Allan, S. (1998). The role of defeat and entrapment (arrested flight) in depression: An exploration of an evolutionary view. *Psychological Medicine, 28,* 585–598.

Gilbert, P., Birchwood, M., Gilbert, J., Trower, P., Hay, J., Murray, B., et al. (2001). An exploration of evolved mental mechanisms for dominant and subordinate behaviour in relation to auditory hallucinations in schizophrenia and critical thoughts in depression. Psychological Medicine, 31, 1117–1127.

Glaser, B. (1978). *Theoretical Sensitivity.* Mill Valley, CA: Sociology Press.

Glaser, B. (2005). *The Grounded Theory Perspective III: Theoretical Coding*. Mill Valley, CA: Sociology Press.

Glaser, B., & Strauss, A. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research.* Mill Valley, CA: Sociology Press.

Gordon, B.G. (2020). Vulnerability in Research: Basic Ethical Concepts and General Approach to Review. *Ochsner Journal March, 20(*1), 34-38; DOI: https://doi.org/10.31486/toj.19.0079

Gumley, A., Taylor, H., Schwannauer, M., & MacBeth, A. (2014). A systematic review of attachment and psychosis: Measurement, construct validity and outcomes. Acta Psychiatrica Scandinavica, 129, 257–274.

Hayward, M. (2003). Interpersonal relating and voice hearing: To what extent does relating to the voice reflect social relating? Psychology and Psychotherapy: Theory, Research and Practice, 76, 369–383.

Hayward, M., Berry, K., & Ashton, A. (2011). Applying interpersonal theories to the understanding of and therapy for auditory hallucinations: a review of the literature and directions for further research. *Clinical psychology review, 31*(8), 1313-1323.

Honig, A., Romme, M., Ensink, B., Escher, S., Pennings, M., & Devries, M. (1998). Auditory hallucinations: A comparison between patients and non-patients. The Journal of Nervous and Mental Disease, 186, 646–651.

Hutchinson, S.A., Wilson, M.E., Wilson, H.S. (1994). Benefits of Participating in Research Interviews. *Image: the Journal of Nursing Scholarship, 26,* 161-166.

Insert additional appendix and details or delete.

Longden, E., Madill, A., & Waterman, M. (2011). Dissociation, trauma, and the role of lived experience: Toward a new conceptualization of voice hearing. *Psychological Bulletin, 138*(1), 28– 76. https://doi.org/10.1037/a0025995.

Longden, E., Corstens, D., Pyle, M., Emsley, R., Peters, S., Chauhan, N., Dehmahdi, N., & Morrison, A. P. (2021). Engaging dialogically with auditory hallucinations: design, rationale and baseline sample characteristics of the Talking With Voices pilot trial. *Psychosis*, *13*(4), 315-326.

MacBeth, A., Gumley, A., Schwannauer, M., & Fisher, R. (2011). Attachment states of mind, mentalization, and their correlates in a first-episode psychosis sample. *Psychology and Psychotherapy: Theory, Research and Practice, 84*(1), 42-57.

Maijer, K., Begemann, M., Palmen, S., Leucht, S., & Sommer, I. (2018). Auditory hallucinations across the lifespan: a systematic review and meta-analysis. *Psychological medicine, 48*(6), 879–888. https://doi.org/10.1017/S0033291717002367

Main, M., Goldwyn, R., & Hesse, E. (2002). Adult attachment scoring and classification systems. (Version 7.1), Unpublished manuscript, University of California.

McLeod, J. (2001). Qualitative research in counselling and psychotherapy. London: Sage.

Meins, E., Fernyhough, C., Russell, J., & Clark-Carter, D. (1998). Security of attachment as a predictor of symbolic and mentalizing abilities: A longitudinal study. Social Development, 7, 1–24. doi:10.1111/1467-9507.00047

Miller, L., O'Connor, E., & DiPasquale, T. (1993). Patients' attitudes towards hallucinations. The American Journal of Psychiatry, 150, 584–588.

Morse, J.M. (2000) “Determining Samples Size” *Qualitative Health Research* 10 (1), 3-5

Shaver, P. R., & Mikulincer, M. (2002). Attachment-related psychodynamics. Attachment and Human Development, 4, 133–161.

Smith, J. A., Flowers, P., & Larkin, M. (2009). *Interpretative Phenomenological Analysis: Theory, Method and Research.* London: Sage

Sorrell, E., Hayward, M., & Meddings, S. (2010). Interpersonal processes and hearing voices: a study of the association between relating to voices and distress in clinical and non-clinical hearers. *Behavioural and cognitive psychotherapy*, *38*(2), 127-140.

Thomas, N., McLeod, H. J., & Brewin, C. R. (2009). Interpersonal complementarity in responses to auditory hallucinations in psychosis. *British Journal of Clinical Psychology, 48,* 411–424.

Ward, T., Lister, R., Fornells-Ambrojo, M., Rus-Calafell, M., Edwards, C. J., O'Brien, C., Craig, T.K., &
Garety, P. (2021). The role of characterisation in everyday voice engagement and AVATAR therapy dialogue. *Psychological medicine,* 1-8.

Weijers, J., Fonagy, P., Eurelings-Bontekoe, E., Termorshuizen, F., Viechtbauer, W., & Selten, J. P. (2018). Mentalizing impairment as a mediator between reported childhood abuse and outcome in nonaffective psychotic disorder. *Psychiatry research*, *259*, 463-469.

Wilkinson, S., & Bell, V. (2016). The representation of agents in auditory verbal hallucinations. *Mind & Language, 31(*1), 104-126.

Cassell, J. (1982). Risks and benefits to subjects of fieldwork. American Sociologist, 13, 134-143.

Department of Health (2005). Mental Capacity Act. London, HMSO.

Gordon, B.G. (2020). Vulnerability in Research: Basic Ethical Concepts and General Approach to Review. Ochsner Journal March, 20(1), 34-38; DOI: https://doi.org/10.31486/toj.19.0079

World Medical Association (2013). Declaration of Helsinki: ethical principles for medical research involving human subjects. JAMA, 310(20), 2191-4. doi: 10.1001/jama.

Appendix 8: Empirical Paper Interview Schedule

Understanding Voice-hearers' Social Relationship with their Voices

Battery of Interview Questions

Introduction

Thank you for agreeing to take part in this research. To start, I'm just going to remind you of some of the information from the participant information sheet you were given.

Study purpose: We are interested in exploring how voice-hearers relate to their voices socially, and whether the voices take an active role in the relationship and have their own intentions and beliefs. We also want to know if people's ability to understand the intentions and beliefs of others influences this.

Informed consent: If you choose not to take part in the study it will not affect the usual care you receive. If you do choose to take part, you have the right to withdraw from the study at any time up until the point that you have completed all parts of the study. You do not need to give a reason for withdrawing and it will have no impact on your current care.

Confidentiality: Everything will remain confidential within the research team, except if we feel worried about you, or another person. In some cases, we might need to pass this information on, but we will try to discuss this with you first.

The information you provide during the interviews will be kept securely and anonymously on paper and on a computer, identifiable only be a number. The audio-recordings will be stored on NHS drives until they have been transcribed, after which they will be deleted. With your consent, we will store anonymised data for future research, which would be kept for a minimum of 3 years from the end of the study and then confidentially destroyed.

[Take written informed consent]

We expect the interview to last up to 2 hours. There are three sections within the interview, and I will offer you a break between each section, but we can stop to take a break at any point. Please also let me know at any point if you would like end for today and set up another time to complete the remainder of the interview.

[If participant has consented to be recorded, switch on the recorder]

May I double-check that you are happy for this interview to be recorded?

[Continue recording, if participant has confirmed their consent.]

If Interview is taking place online

Remote Working Advanced Safety Statement

As we will be meeting by video call, there may be circumstances in which one of us loses internet connection, or unexpectedly ends the call for some reason. So, it is helpful for us to agree beforehand what we do if that situation arises, so that we are both on the same page. If for any reason I leave the call, I will always try to call you on the number you provided or return to the video call. If you leave the call, I will always try to call you back on the video call in the first instance, then call you on the phone number you have given me.

It could also be that something comes up for you during the assessment that upsets you and you wish to end the call. It would be helpful if you are able to, to let me know if you want to end the call. If you do choose to end the call without giving a reason and I feel worried about you, I will always try to contact you.

If for some reason I cannot get through to you on the phone the first time, what would you like me to do next? E.g. Try calling again after 5 minutes, text message, voicemail, email

If I cannot get through to you directly, would you be happy for me to contact your clinical team?
Is there anything you would not want me to share with them?

If I were really worried about your safety, it is then my professional responsibility to share my concerns with your clinical team and senior members of our research team.

Do you have any questions?

Start of interview questions

Demographic Questions:
Date of Birth
Gender (How would you describe your gender?)
Marital Status
Ethnicity
Do you have any significant hearing or visual difficulties?

Roughly how old were you when you first started hearing voices?

Duration of contact with MH services (years) *(How old were you when you first had contact with mental health services?)*

[The term VOICES in each section will be substituted with the participant's own language e.g. spirit, voice's name, entity + use correct pronouns]

While answering the following questions, please choose the voice you have the strongest sense of, or your main voice.

The Psychotic Symptoms Rating Scale – Auditory Hallucinations subscale (PSYRATS-AH; Haddock, McCarron, Tarrier, & Faragher, 1999)

Frequency

How often did you experience VOICES in the last week?

- ☐ 0 Voices not present
- ☐ 1 At least once/week
- ☐ 2 At least once/day
- ☐ 3 At least once/hour
- ☐ 4 Almost continuous I.e., stop for only a few minutes or seconds

Duration

In the last week, when you hear the voices how long do they last? E.g. a few seconds, minutes, hours, all day long?

- ☐ 0 Voices not present
- ☐ 1 A few seconds, fleeting
- ☐ 2 Several minutes
- ☐ 3 At least one hour
- ☐ 4 Last for hours at a time

Location

When you hear the voices where do they sound like they are coming from? (Inside your head and/or outside your head)

If outside your head where do they sound like they are coming from?

- ☐ 0 No voices

- ☐ 1 Voices sound inside head only
- ☐ 2 Outside head but close to ears.
- ☐ (Voices inside head may also be present)
- ☐ 3 Sound like inside or close to ears and outside away from ears
- ☐ 4 Outside head only

Loudness

How loud are your voices?

Are they louder than your voice, about the same loudness or quieter, or just a whisper

- ☐ 0 Voices not present
- ☐ 1 Quieter than own voice
- ☐ 2 About the same loudness as own voice
- ☐ 3 Louder than own voice
- ☐ 4 Extremely loud, shouting

Beliefs re origin of voices

What do you think has caused your voices?

Are the voices caused by factors related to yourself or solely due to other people or factors?

How much do you believe the voices are caused by (…add participant's contribution) on a scale from 0-100, with 100 being that you are totally convinced, have no doubts and 0 being that it is completely untrue?

- ☐ 0 Voices not present
- ☐ 1 Believes voices solely internally generated and related to self
- ☐ 2 50% conviction that voices originate from external sources
- ☐ 3 50% or more conviction (but less than 100%) that voices originate from external sources
- ☐ 4 Believes voices are solely due to external sources

Negative content of voices

Do your voices say unpleasant or negative things?

Can you give me some examples of what the voices say (record these examples)

How much of the time do the voices say these unpleasant things?

- ☐ 0 No unpleasant content
- ☐ 1 Occasional unpleasant content
- ☐ 2 Minority is unpleasant/negative (<50%)
- ☐ 3 Majority unpleasant/negative (50% or more)
- ☐ 4 All is unpleasant or negative

Degree of negative content

Ask participant for more detail if necessary

- ☐ 0 Not negative or unpleasant content
- ☐ 1 Some but not personal comments relating to self or family eg. swear words or comments not directed at self e.g. "the milkman is ugly"
- ☐ 2 Personal verbal abuse, comments on behaviour e.g. "you shouldn't do that or say that"
- ☐ 3 Personal verbal abuse relating to self-concept e.g. "you are lazy/mad/ugly /etc"
- ☐ 4 Personal threats to self e.g. to harm self or family, extreme instructions or commands to harm self or others and abuse as in 3.

Amount of distress

Are your voices distressing?

How much of the time?

- ☐ 0 Voices not distressing at all
- ☐ 1 Occasionally distressing, majority not distressing (<10%)
- ☐ 2 Minority of voices distressing (50%)
- ☐ 3 Majority of voices distressing (> 50%)
- ☐ 4 Voices always distressing

Intensity of distress

When voices are distressing, how distressing are they?

Do they cause you minimal, moderate, severe distress?

Are they the most distressing they have ever?

- ☐ 0 Voices not distressing at all
- ☐ 1 Voices slightly distressing
- ☐ 2 Voices are distressing to moderate degree
- ☐ 3 Voices are very distressing, although the client could feel worse
- ☐ 4 Voices always distressing

Disruption to life caused by the voices

How much disruption do the voices cause to your life?

Do they prevent you from working or carrying out a daytime activity?

Do they interfere with your relationships with family or friends?

Do they interfere with your ability to look after yourself (washing/ changing clothes)?

- ☐ 0 No disruption to life, able to maintain independent living.
    - No problems in daily living skills.
    - Able to maintain social and family relationships (if present)
- ☐ 1 Voices cause minimal amount of disruption to life e.g. interferes with concentration.
    - Able to maintain daytime activity and social and family relationships.
    - Able to maintain independent living without support.
- ☐ 2 Voices cause moderate amount of disruption to life.
    - Some disturbance to daytime activity and or family/ social activities.
    - Participant is not in hospital although may live in supported accommodation or receive help with daily living skills.
- ☐ 3 Voices cause severe disruption to life so that hospitalisation is usually necessary.
    - Client is able to maintain some daily activities, self-care and relationships whilst in hospital.
    - Client may also be in supported accommodation, but experiencing severe disruption of life in terms of activities daily living skills and or relationships.
- ☐ 4 Voices cause complete disruption of daily life requiring hospitalization.
    - The client is unable to maintain and daily activities and social relationships.
    - Self-care is severely disrupted.

11. Controllability of voices

Do you think you have any control over when your voices happen?

Can you dismiss or bring on your voices?

- ☐ 0 Client believes they can have control over their voices and can bring on or dismiss them at will
- ☐ 1 Client believes they can have some control over their voices on the majority of occasions
- ☐ 2 Client believes they can have some control over their voices approximately half of the time
- ☐ 3 Client believes they can have some control over their voices but only occasionally.
    - The majority of the time the client experiences voices, which are uncontrollable.
- ☐ 4 Client has no control over when the voices occur and cannot dismiss or bring them on at all

Number of Voices

How many Different Voices have you heard over the last week?

Form of Voices

(Please circle the appropriate answer and indicate the number of voices)

1st Person YES NO N =

2nd Person YES NO N =

3rd Person YES NO N =

Voices Interview

N.B [do not read] - Charmaz (2006) suggests using intensive qualitative interviewing that includes open-ended questions, but that it remains flexible in that if ideas and issues emerge within the interviews, these leads can be followed. The interview will contain 'demand questions' that require a participant to engage in spontaneous mentalisation i.e. thinking about how others think, that have been adapted from the AAI.

Prompt '**and why do you think they did/said that?'** can be used as a demand question.

[Read] While answering the following questions, once again please think about the voice you have the strongest sense of, or your main voice.

- *Getting a sense of the voice*
    - ***[AAI] (if >1 voice)*** **Which voice do you feel closest to and why?**
    - **How long have you heard this voice for? And do you remember the moment when you first started hearing it?**
    - **What is the experience of voice-hearing like for you?**
    - **How would you describe the voice?**
        - **Do you have a sense of its personality?**
    - **Does your voice have a name?**
        - *[If yes]* **How did you first learn that this was their name?**
- *Sense of voice as an agent*
    - *[AAI]* **Can you give me 5 adjectives that describe your relationship with your voice?** [Write down each adjective]
        - [For each adjective ask] **Can you give me a recent example of this from a time you heard [voice]?**
    - **How does your relationship with your voice compare to relationships with others in your life?**
    - **What sort of things do you and your voice discuss?**
        - **Who chooses what you talk about?**
    - **What is important to your voice?**
        - **Is this the same or different to what is important to you?**
    - **What goals does your voice have?**
        - **What shared goals do you have, if any?**
- **What do you think your voice gets out of the relationship?**
    - **Does your voice consider how what it says impacts you?**

    - **What makes you think this?**
  - **How does your voice respond to your emotional state (e.g. feeling sad)?**
    - **Can you give me examples of times it has done this?**
  - **Can you tell me about times when you have noticed an emotional change in your voice? E.g. when it was angry/sad/happy.**
  - ***[AAI]* Have you ever felt rejected by your voice?**
  - **Have you and your voice ever fallen out or had an argument?**
    - **How was this conflict resolved?**
  - ***[AAI]* You've told me you've heard your voice for x years, have there been changes in your relationship since you started hearing it?**
  - ***[AAI] Have your feelings about* any abuse or unpleasant things the voice has said changed over time?**
- **Is there anything you want to tell me about your voice that we have not covered so far?**

Adult Attachment Interview (AAI; Main et al., 2002)

1. Could you start by helping me get oriented to your early family situation, and where you lived and so on? If you could tell me where you were born, whether you moved around much, what your family did at various times for a living?

*This question is a warm-up/orientation to family. P **must not** be allowed to begin discussing the **quality** of relationships here, so the "atmosphere" set by the interviewer is that a brief list of demographics I.e. **"who, when"** is being sought, and **no more than two or three minutes at most should be used for this question**.*

*In the case of **participants raised by several persons, and not necessarily raised by the biological or adoptive parents,** opening question above may be* **"Who would you say raised you?'***: The interviewer will use this to help determine who should be considered the primary attachment figure (s) on whom the interview will focus.*

-- Did you see much of your grandparents when you were little?

*If participant indicates that grandparents died during his or her own lifetime, ask the participant's age at the time of each loss. If there were grandparents whom she or he never met, ask whether this (these) grandparents) had died before she was born. If yes, continue as follows: **Your mother's father died before you were born? How old was she at the time, do you know? In a casual and spontaneous way, inviting only a very brief reply, the interviewer then asks, Did she tell you much about this grandfather?***

-- Did you have brothers and sisters living in the house, or anybody besides your parents? Are they living nearby now or do they live elsewhere?

2. I'd like you to try to describe your relationship with your parents as a young child and if you could start from as far back as you can remember?

Encourage participants to try to begin by remembering very early. Many say they cannot remember early childhood, but you should shape the questions such that they ***focus at first around age five or earlier****, and gently remind the p from time to time that if possible, you would like them to think back to this age period.*

3. Now I'd like to ask you to choose five adjectives or words that reflect your relationship with your mother starting from as far back as you can remember in early childhood--as early as you can go, but say, age 5 to 12 is fine. I know this may take a bit of time, so go ahead and think for a minute... then I'd like to ask you why you chose them. I'll write each one down as you give them to me.

Not all Ps will be able to think of five adjectives right away. Make the word ***relationship*** *clear enough to be heard in this sentence, not looking for adjectives that describe parent themselves e.g. pretty/efficient manager. The word should be spoken clearly, but with only slight stress or emphasis.*

If the P has further questions, you can explain, **"just words or phrases that would describe or tell me about your relationship with your (mother) during childhood"**.

Interviewer must not begin to probe until the full set of adjectives has been given.

If P does not understand what a memory is, can suggest they think of it like an image they have in their mind similar to a videotape of something which happened when they were young. Make certain that the subject really does not understand the question first, however. It is important for the interviewer to press enough in the effort to obtain the five "overview" adjectives that if a full set is not provided, she or he is reasonably certain that they truly cannot be given. The interviewer's manner should indicate that waiting as long as a minute is not unusual, and that trying to come up with these words can be difficult. Don't, however, repeatedly leave the participant in embarrassing silences for very long periods.

If the P has extreme difficulty coming up with more than one or two words or adjectives, after a period of two to three minutes of supported attempts **("Mm... I know it can be hard ...this is a pretty tough question... Just take a little more time"***) then say something like* **"Well, that's fine. Thank you, we'll just go with the ones you've already given me."**

-- Okay, now let me go through some more questions about your description of your childhood relationship with your mother. You say your relationships with her was *(use adjective provided by P).* ***Are there any memories or incidents that come to mind with respect to*** *(word)****?***

The same questions will be asked separately for each adjective in series e.g. **"the second word you used was X. Can you think of a memory or an incident that would demonstrate why you chose to describe the relationship as X?"** *The interviewer continues until all five adjectives or phrases are covered. Some adjectives chosen may be almost identical, e.g., "loving ... caring" but each must be treated separately.*

If the participant is silent, the interviewer waits an appropriate length of time, but if silence appears to indicate P is feeling stumped, interview could say **"well, just take another minute and see if anything comes to mind"**. *If P still cannot respond to the question casually say* **"well, that's fine, let's take the next one, then"**.

If the P re-defines an adjective with a second adjective in their response e.g. "Loving ---she was generous", the interviewer repeats the original adjective (e.g. loving). However, if P continues to discuss "generous" after having been probed about loving once more, this violation of the discourse task is meaningful and must be allowed.

If a specific and well-elaborated incident is given, the P has responded satisfactorily to the task, and the interviewer should indicate that she or he understands that. However, the interviewer should briefly show continuing interest by asking whether the participant can think of a second incident.

If one specific but poorly elaborated incident is given, the interviewer probes for a second. Again, the interviewer does this in a manner emphasising their own interest.

If as a first response the participant gives a "scripted" or "general" memory, as "Loving. She always took us to the park and on picnics. She was really good on holidays" or "Loving. He taught me to ride a bike"--the interviewer says, **"Well, that's a good general description, but I'm wondering if there was a particular time that happened, that made you think about it as loving?"**

If the P does now offer a specific memory, briefly seek a second memory, as above. If another scripted memory is offered instead, or if the participant responds "I just think that was a loving thing to do", the interviewer should be accepting, and go on to the next adjective. Here as elsewhere the interviewer's behaviour indicates that the participant's response is satisfactory.

4. Now I'd like to ask you to choose five adjectives or words that reflect your childhood relationship with your father, again starting from as far back as you can remember in early childhood--as early as you can go, but again say, age 5 to 12 is fine. I know this may take a bit of time, so go ahead and think again for a minute...then I'd like to ask you why you chose them. I'll write each one down as you give them to me.

[Interviewer repeats with probes as above].

5. Now I wonder if you could tell me, to which parent did you feel the closest, and why? Why isn't there this feeling with the other parent?

By the time you have asked the previous set of questions, the answer to this may be obvious, and you may want to remark on that (**"You've already discussed this a bit, but I'd like to ask about it briefly anyway..."**). Futhermore, while the answer to this question may indeed be obvious for many participants, some--particularly those who describe both parents as loving--may be able to use it to reflect further on the difference in these two relationships.

6. When you were upset as a child, what would you do?

This is a critical question in the interview, and variations in the interpretation of this question are important. Consequently, the participant is first encouraged to think up her own interpretations of "upset", with the interviewer pausing quietly to indicate that the question is completed.

Be sure to get expansions of every answer. E.g. P says **"I withdrew"** you might say, **"And what would you do when you withdrew?"** The interviewer now goes on to ask the specific follow-up questions below. These questions may appear similar, but they vary in critical ways, so the interviewer must make sure that the participant thinks through each question separately. This is done by placing vocal stress on the changing contexts (as we have indicated by underlining).

-----When you were upset emotionally when you were little, what would you do? [Wait for participant's reply]. **Can you think of a specific time that happened?**

-----Can you remember what would happen when you were hurt physically? [Wait for participant's Reply]. **Again, do any specific incidents (or, do any other incidents) come to mind?**

-----Were you ever ill when you were little? [Wait for participant's reply]. **Do you remember what would happen?**

When the participant describes going to a parent, see first what details they can give you spontaneously. Try to get a sense of how parent(s) responded, and then when and if it seems appropriate you can briefly ask one or two clarifying questions. Be sure to get expansions of every answer. Again, if the participant says "I withdrew", for example, probe to see what the participant means by this, i.e., what exactly she or he did, or how exactly they felt, and if they can elaborate on the topic. If the participant has not spontaneously mentioned being held by the parent in response to any of the above questions, the interviewer can ask casually at the conclusion to the series, **"I was just wondering, do you remember being held by either of your parents at any of these times--I mean, when you were upset, or hurt, or ill?"**

7. What is the first time you remember being separated from your parents?

- - -How did you respond? Do you remember how your parents responded?

- - -Are there any other separations that stand out in your mind?

Here Ps often describe first going off to nursery school, or to primary school, or going camping. In this context, participants sometimes spontaneously compare their own responses to those of other children. This provides important information regarding the participant's own overall attitude towards attachment, so be careful not to cut any such descriptions or comparisons short.

8. Did you ever feel rejected as a young child? Of course, looking back on it now, you may realize it wasn't really rejection, but what I'm trying to ask about here is whether you remember ever having felt rejected in childhood.

-----How old were you when you first felt this way, and what did you do?

----Why do you think your parent did those things--do you think he/she realized he/she was rejecting you?

Interviewer may want to add a probe by reframing the question here, especially if no examples are forthcoming. The probe we suggest here is **"Did you ever feel pushed away or ignored?"** Many participants tend to avoid this in terms of a positive answer.

Let the P respond "freely" to this question, defining the meaning for themselves. They may ask you what the question means, and if so, simply respond by saying **"It's just a more general question"**. Do not probe heavily here. If the research participant has had traumatic experiences which they elect not to describe, or which they have difficulty remembering or thinking about, you should not insist upon hearing about them.

---So, were you ever frightened or worried as a child?

Let the P respond "freely" to this question, defining the meaning for themselves. They may ask you what the question means, and if so, simply respond by saying **"It's just a more general question"**. Do not probe heavily here. If the research participant has had traumatic experiences which they elect not to describe, or which they have difficulty remembering or thinking about, you should not insist upon hearing about them.

9. Were your parents ever threatening with you in any way - maybe for discipline, or even jokingly?

-----Some people have told us for example that their parents would threaten to leave them or send them away from home.

P is free to answer and expand on the topic if they wish, but there are no specific probes. The researcher *should* ***not*** *ask about more than* ***one*** *such specific (community) form of punishment,* since queries regarding more than one common type will lead the topic away from its more general intent.

(Note - in particular communities, kinds of punishment not generally considered fully abusive is common e.g. 'the silent treatment', or 'shaming', etc. One question regarding this one selected specific form of punishment can be inserted here, as for example **'some people have told us parents would use the silent treatment... did this ever happen with your parents?'**

-----Did anything like this ever happen to you, or in your family?

--How old were you at the time? Did it happen frequently?

---Do you feel this experience affects you now as an adult?

---Do you have your own children? (If YES) **Does that experience influence your approach to your own child?**

-----Did you have any such experiences involving people outside your family?

If P indicates that something like this did happen outside the family, take the participant through the same probes **(age? frequency? affects you now as an adult? Influences your approach to your own child?).**

Be careful with this question, however, as it is clinically sensitive, and by now you may have been asking the participant difficult questions for an extended period of time. If P is willing to discuss experiences of this kind,interviewer must do whatever may be required to recognize and insofar as possible to help alleviate the distress arising with such memories.

If the interviewer suspects that abuse or other traumatic experiences occurred --> ascertain the specific details of these events insofar as possible. Where the physically abusive experience (e.g. belting, whipping, or hitting) is ambiguous, then, the interviewer should try to establish the nature of the experience in a *light, matter-of-fact* manner, without excessive prodding.

If, for example, the participant says "I got the belt" and stops, ask: **"And what did getting the belt mean?"**. Encourage as much spontaneous expansion as possible, but may still need to ask (in a matter-of-fact tone) how the participant responded or felt at the time. In the case of sexual abuse as opposed to battering, the interviewer will seldom need to press for details, and should be very careful to follow the participant's lead. Before seeking elaboration of any kind, determine whether the participant seems comfortable in discussing the incidents. Use clinical judgment in deciding whether to bring querying to a close if P is becoming uncomfortable. At the same time, the interviewer must not avoid the topic or give the participant the impression that discussion of such experiences is unusual. If you sense that the participant has told you things they have not previously discussed or remembered, special care must be taken at the end of the interview to ensure that the participant does not still suffer distress, and feels able to contact the interviewer or project director should feelings of distress arise in the future. Where the complete sequence of probes must be abandoned, the interviewer should move gracefully and smoothly to the next question, as though the participant had in fact answered fully.

10. In general, how do you think your overall experiences with your parents have affected your adult personality? [Pause to indicate expectation for participant to be thoughtful regarding this question].

Are there any aspects to your early experiences that you feel were a set-back in your development?

In some cases, the participant will already have discussed this question. Indicate, as usual, that you would just like some verbal response again anyway, "for the record". It is quite important to know whether or not a participant sees their experiences as having had a negative effect on them, so the interviewer will follow-up with one of the two probes provided directly below. The interviewer must stay alert to the participant's exact response to the question, since the phrasing of the probe differs according to the participant's original response. If the participant has named one or two setbacks, the follow-up probe used is:

---Are there any other aspects of your early experiences, that you think might have held your development back, or had a negative effect on the way you turned out?

If the participant has understood the question, but has not considered anything about early experiences a setback, the follow-up probe used is:

---Is there anything about your early experiences that you think might have held your development back, or had a negative effect on the way you turned out?

Although the word anything receives some vocal stress, the interviewer must be careful not to seem to be expressing impatience. The stress is to imply that the participant is being given another chance to think of something else they might have forgotten a moment ago.

RE: PARTICIPANTS WHO DON'T SEEM TO UNDERSTAND THE TERM, SETBACK. If after a considerable wait for the participant to reflect, the participant seems puzzled by the question, say **"Well, not everybody uses terms like set-back for what I mean here. I mean, was there anything about your early experiences, or any parts of your early experiences, that you think might have held your development back, or had a negative effect on the way you turned out?"** In this case, this becomes the main question, and the probe becomes "**Is there anything else about your early experiences that you think might have held your development back, or had a negative effect on the way you turned out?"**

11. Why do you think your parent(s) behaved as they did during your childhood?

This question is relevant even if the participant feels childhood experiences were entirely positive. For participants reporting negative experiences, this question is particularly important.

12. Were there any other adults with whom you were close, like parents, as a child?

--- Or any other adults who were especially important to you, even though not parental?

Provide time to reflect on this question. Participant may mention housekeepers, au pairs, nannies, other family members, teachers, or neighbors. Find out: **ages at which these persons were close with the participant, whether they had lived with the family, and whether they had had any caregiving responsibilities**. In general, attempt to determine the significance and nature of the relationship.

13. Did you experience the loss of a parent or other close loved one while you were a young child--for example, a sibling, or a close family member?

(A few participants understand the term "loss" to cover brief or long-term separations from living persons, as, "I lost my mom when she moved South to stay with her mother". If necessary, clarify that you are referring to death only, i.e. specifically to loved ones who had died).

-----Could you tell me about the circumstances, and how old you were at the time?

-----How did you respond at the time?

-----Was this death sudden or was it expected?

-----Can you recall your feelings at that time?

-----Have your feelings regarding this death changed much over time?

----(If not volunteered earlier) **Did you attend the funeral, and what was this like for you?**

-----(If loss of a parent or sibling) **What would you say was the effect on your (other parent) and on your household, and how did this change over the years?**

-----Would you say this loss has had an effect on your adult personality?

-----(Where relevant) **How does it affect your approach to your own child?**

13a. Did you lose any other important people during your childhood?

(Again, this refers to people who have died rather than separation experiences – use same probes as above).

13b. Have you lost other close people in adult years?

(use same probes as above)

[At maximum, only **four to five** losses are usually fully probed. In the case of older research participants or those with traumatic histories, there may be many losses, and the interviewer will have to decide on the spot which losses to probe. No hard and fast rules can be laid out for determining which losses to skip, so judgement must be used to determine which losses are personally significant to the participant]

[Optional, as not in original AAI protocol] **14. Other than any difficult experiences you've already described, have you had any other experiences which you would regard as potentially traumatic?**

Let the participant free-associate to this question, then clarify if necessary with a phrase such as, **I mean, any experience which was overwhelmingly and immediately terrifying.**

Follow up on such experiences with probes only where the participant seems at relative ease in discussing the event, and/or seems clearly to have discussed and thought about it before.

15. Now I'd like to ask you a few more questions about your relationship with your parents. Were there many changes in your relationship with your parents (or remaining parent) after childhood? We'll get to the present in a moment, but right now I mean changes occurring roughly between your childhood and your adulthood?

Here we are in part trying to find out, indirectly (1) whether there has been a period of rebellion from the parents, and (2) also indirectly, whether the participant may have rethought early unfortunate relationships and "forgiven" the parents. Do not ask anything about forgiveness directly, however--this will need to come up spontaneously. This question also gives the participant the chance to describe any changes in the parents behavior, favorable or unfavorable, which occurred at that time.

16. Now I'd like to ask you, what is your relationship with your parents (or remaining parent) like for you now as an adult? Here I am asking about your current relationship.

----Do you have much contact with your parents at present?

----What would you say the relationship with your parents is like currently?

---Could you tell me about any (or any other) sources of dissatisfaction in your current relationship with your parents? Any specific (or any other) sources of satisfaction?

17. [ONLY ASK IF P HAS A CHILD] I'd like to move now to a different sort of question--it's not about your relationship with your parents, instead it's about an aspect of your current relationship with (specific child of special interest to the researcher, or all the participant's children considered together). How do you respond now, in terms of feelings, when you separate from your child / children? (For adolescents or individuals without children, see below).

What we want here are the participant's feelings about the separation. When you are certain you have given enough time (or repeated or clarified the question enough) for the participant's natural ly-occuring response, then (and only then) add the following probe:

-----Do you ever feel worried about (child)?

[IF CHILD-FREE ASK:]

I'd like you to imagine that you have a one-year-old child, and I wonder how you think you might respond, in terms of feelings, if you had to separate from this child?"

---Do you think you would ever feel worried about this child?"

18. [IF P HAS A CHILD] If you had three wishes for your child twenty years from now, what would they be? I'm thinking partly of the kind of future you would like to see for your child. I'll give you a minute or two to think about this one.

[IF CHILD-FREE ASK:]

Now I'd like you to continue to imagine that you have a one-year-old child for just another minute. This time, I'd like to ask, if you had three wishes for your child twenty years from now, what would they be? I'm thinking partly of the kind of future you would like to see for your imagined child. I'll give you a minute or two to think about this one.

19. Is there any particular thing which you feel you learned above all from your own childhood experiences? I'm thinking here of something you feel you might have gained from the kind of childhood you had.

20. We've been focusing a lot on the past in this interview, but I'd like to end up looking quite a ways into the future. We've just talked about what you think you may have learned from your own childhood experiences. I'd like to end by asking you what would you hope your child (or, your imagined child) might have learned from his/her experiences of being parented by you?

Is there anything else you would like to add that you feel hasn't been covered?

Debrief section

I’m just going to switch off the recorder now. *[Switch off recorder]*

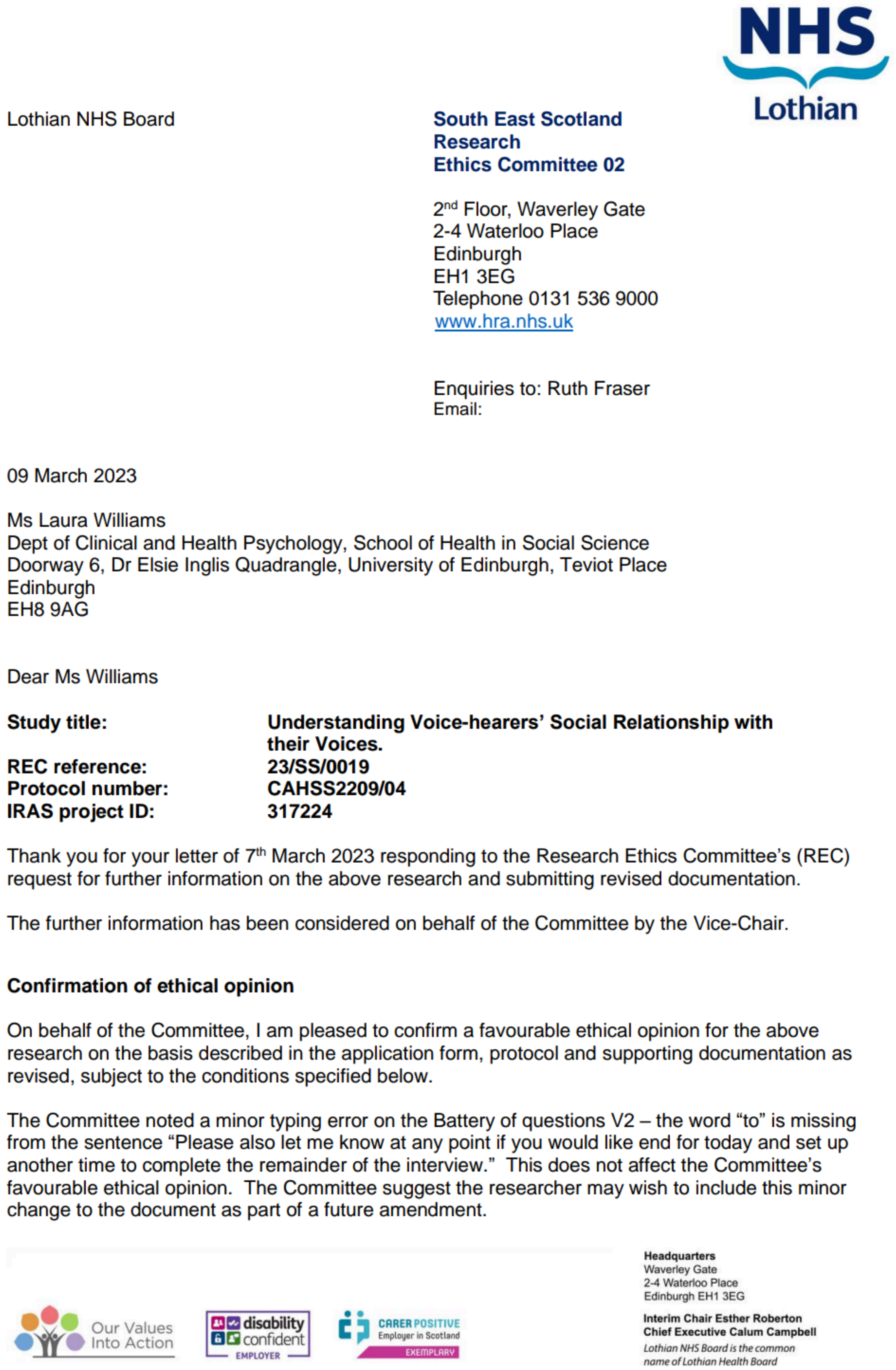
If it is okay with you, we will just take a few minutes to debrief after the interviews? *[Give debrief sheet]*

How are you feeling after taking part today? What are you doing after this?

If you have any questions after today, please feel free to call on the numbers provided on this sheet.

Thank you for taking part in this study.

Appendix 9: Favourable Opinion Letter



NHS
Lothian

Lothian NHS Board

South East Scotland Research Ethics Committee 02

2nd Floor, Waverley Gate
2-4 Waterloo Place
Edinburgh
EH1 3EG
Telephone 0131 536 9000
www.hra.nhs.uk

Enquiries to: Ruth Fraser
Email:

09 March 2023

Ms Laura Williams
Dept of Clinical and Health Psychology, School of Health in Social Science
Doorway 6, Dr Elsie Inglis Quadrangle, University of Edinburgh, Teviot Place
Edinburgh
EH8 9AG

Dear Ms Williams

Study title: **Understanding Voice-hearers' Social Relationship with their Voices.**
REC reference: **23/SS/0019**
Protocol number: **CAHSS2209/04**
IRAS project ID: **317224**

Thank you for your letter of 7th March 2023 responding to the Research Ethics Committee's (REC) request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Vice-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, subject to the conditions specified below.

The Committee noted a minor typing error on the Battery of questions V2 – the word "to" is missing from the sentence "Please also let me know at any point if you would like end for today and set up another time to complete the remainder of the interview." This does not affect the Committee's favourable ethical opinion. The Committee suggest the researcher may wish to include this minor change to the document as part of a future amendment.

Good practice principles and responsibilities

The UK Policy Framework for Health and Social Care Research sets out principles of good practice in the management and conduct of health and social care research. It also outlines the responsibilities of individuals and organisations, including those related to the four elements of research transparency:

1. registering research studies
2. reporting results
3. informing participants
4. sharing study data and tissue

Conditions of the favourable opinion

The REC favourable opinion is subject to the following conditions being met prior to the start of the study.

Confirmation of Capacity and Capability (in England, Northern Ireland and Wales) or NHS management permission (in Scotland) should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements. Each NHS organisation must confirm through the signing of agreements and/or other documents that it has given permission for the research to proceed (except where explicitly specified otherwise).

Guidance on applying for HRA and HCRW Approval (England and Wales)/ NHS permission for research is available in the Integrated Research Application System.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of management permissions from host organisations

Registration of Clinical Trials

All research should be registered in a publicly accessible database and we expect all researchers, research sponsors and others to meet this fundamental best practice standard.

It is a condition of the REC favourable opinion that **all clinical trials are registered** on a publicly accessible database within six weeks of recruiting the first research participant. For this purpose, 'clinical trials' are defined as:

- clinical trial of an investigational medicinal product
- clinical investigation or other study of a medical device
- combined trial of an investigational medicinal product and an investigational medical device

- other clinical trial to study a novel intervention or randomised clinical trial to compare interventions in clinical practice.

Failure to register a clinical trial is a breach of these approval conditions, unless a deferral has been agreed by the HRA (for more information on registration and requesting a deferral see: Research registration and research project identifiers).

If you have not already included registration details in your IRAS application form you should notify the REC of the registration details as soon as possible.

Publication of Your Research Summary

We will publish your research summary for the above study on the research summaries section of our website, together with your contact details, no earlier than three months from the date of this favourable opinion letter.

Should you wish to provide a substitute contact point, make a request to defer, or require further information, please visit: https://www.hra.nhs.uk/planning-and-improving-research/application-summaries/research-summaries/

N.B. If your study is related to COVID-19 we will aim to publish your research summary within 3 days rather than three months.

During this public health emergency, it is vital that everyone can promptly identify all relevant research related to COVID-19 that is taking place globally. If you haven't already done so, please register your study on a public registry as soon as possible and provide the REC with the registration detail, which will be posted alongside other information relating to your project. We are also asking sponsors not to request deferral of publication of research summary for any projects relating to COVID-19. In addition, to facilitate finding and extracting studies related to COVID-19 from public databases, please enter the WHO official acronym for the coronavirus disease (COVID-19) in the full title of your study. Approved COVID-19 studies can be found at: https://www.hra.nhs.uk/covid-19-research/approved-covid-19-research/

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

After ethical review: Reporting requirements

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study, including early termination of the study
- Final report

- Reporting results

The latest guidance on these topics can be found at https://www.hra.nhs.uk/approvals-amendments/managing-your-approval/.

Ethical review of research sites

NHS/HSC sites

The favourable opinion applies to all NHS/HSC sites taking part in the study, subject to confirmation of Capacity and Capability (in England, Northern Ireland and Wales) or management permission (in Scotland) being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Non-NHS/HSC sites

I am pleased to confirm that the favourable opinion applies to any non-NHS/HSC sites listed in the application, subject to site management permission being obtained prior to the start of the study at the site.

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	*Version*	*Date*
Copies of materials calling attention of potential participants to the research [Poster]	2.0	24 February 2023
Covering letter on headed paper		
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only)		
GP/consultant information sheets or letters	2	24 February 2023
Interview schedules or topic guides for participants [Interview Questions]	2	24 February 2023
IRAS Application Form [IRAS_Form_09032023]		09 March 2023
Other [Debrief form]	2	24 February 2023
Other [Online CF]	2	24 February 2023
Participant consent form [PCF clean]	2	24 February 2009
Participant information sheet (PIS) [PIS]	2	24 February 2023
Referee's report or other scientific critique report [Feedback on Proposal Submission]		26 May 2023
Research protocol or project proposal [Protocol]	2	24 February 2023
Summary CV for Chief Investigator (CI) [CI CV]		19 July 2022
Summary CV for supervisor (student research) [CV Supervisor]		17 February 2022

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website: http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/

HRA Learning

We are pleased to welcome researchers and research staff to our HRA Learning Events and online learning opportunities– see details at: https://www.hra.nhs.uk/planning-and-improving-research/learning/

IRAS project ID: 317224   Please quote this number on all correspondence

With the Committee's best wishes for the success of this project.

Yours sincerely

Miss Sarah Gregory
Vice Chair

Email:ruth.fraser4@nhslothian.scot.nhs.uk

Enclosures:	"After ethical review – guidance for researchers" *[SL-AR2]*
Copy to:	Charlotte Smith

Lead Nation
Scotland: gram.nrspcc@nhs.scot

Appendix 10: NHS Lothian Research and Development Approval

Lothian NHS Board

Queen's Medical Research Institute
47 Little France Crescent, Edinburgh, EH16
4TJ

Research & Development
Room E1.16
Tel: 0131 242 3330

Email:
accord@nhslothian.scot.nhs.uk

Director: Professor Alasdair Gray

FM/LS/approval

17th March 2023

Miss Laura Williams
NHS Lothian
Doorway 6
Dr Elsie Inglis Quadrangle
Teviot Place
Edinburgh
EH8 9AG

Dear Miss Williams

Lothian R&D Project No: 2023/0004 **REC No: 23/SS/0019**

Title of Research: An exploration of voice-hearers reflective functioning and how they experience their voices as social agents

Participant Information Sheet:
Version 2, dated 24 February 2023

Consent Form:
Version 2, dated 24 February 2023

Protocol: Version 2, dated 24 February 2023

Approved Location(s) within NHS Lothian: CMHTs and Mental Health Inpatient Units

I am pleased to inform you this letter provides Site Specific approval for NHS Lothian for the above study, and you may proceed with your research, subject to the conditions below.

We note that this study has obtained approval from NHS Lothian Information Governance/IT Security for those aspects of the study that involve collection and/or transfer of identifiable information. You are responsible for informing the NHS Lothian R&D Office if there are any changes to the study that impact the terms of this approval.

Please note that the NHS Lothian R&D Office must be informed of any changes to the study such as amendments to the protocol, funding, recruitment, personnel or resource input required of NHS Lothian.

Substantial amendments to the protocol will require approval from the ethics committee which approved your study and the MHRA where applicable.

Data controllers and processors have a legal obligation to hold a register of all their information assets (e.g. personal information (data) and/or special categories of personal data held in paper or electronic format for the purpose of clinical research). This R&D management approval is given on the understanding that you, as a potential information asset owner, will register any information assets associated with this research project with your employing organisation (where the data is held) in accordance the Data Protection Act 2018.

Please keep this office informed of the following study information, **which is a condition of NHS Lothian R&D Management Approval**:

1. Date you are ready to begin recruitment, date of the recruitment of the first participant and the monthly recruitment figures thereafter.
2. Date the final participant is recruited and the final recruitment figures.
3. Date your study / trial is completed within NHS Lothian.

I wish you every success with your study.

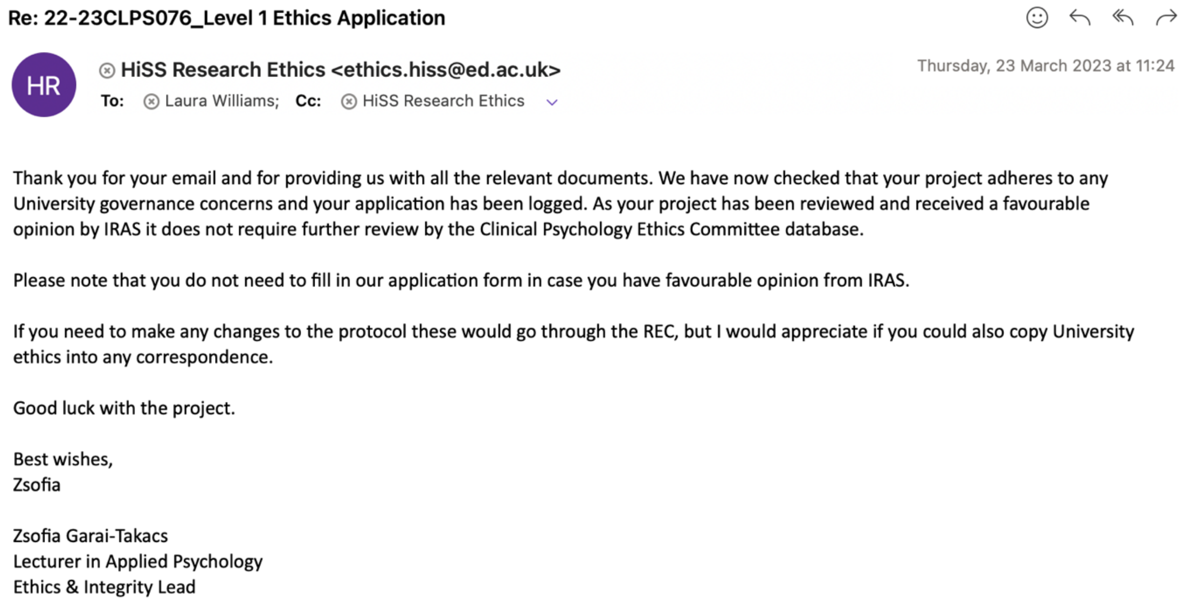
Yours sincerely

Fiona McArdle (Mar 17, 2023 09:15 GMT)

Ms Fiona McArdle
Deputy R&D Director

CC: Ms Tracey McKigen, Services Director, Psychiatry, NHS Lothian
Ms Morag Barrow, Joint Director, Health and Social Care, NHS Lothian
Ms Judith Proctor, Chief Officer, Waverley Court, NHS Lothian
Ms Alison White, Chief Officer, NHS Lothian
Ms Fiona Wilson, Head of Health, West Lothian Health and Social Care Partnership

Appendix 11: Health in Social Science Ethics Email Confirmation



Re: 22-23CLPS076_Level 1 Ethics Application

HiSS Research Ethics <ethics.hiss@ed.ac.uk> Thursday, 23 March 2023 at 11:24
To: Laura Williams; **Cc:** HiSS Research Ethics

Thank you for your email and for providing us with all the relevant documents. We have now checked that your project adheres to any University governance concerns and your application has been logged. As your project has been reviewed and received a favourable opinion by IRAS it does not require further review by the Clinical Psychology Ethics Committee database.

Please note that you do not need to fill in our application form in case you have favourable opinion from IRAS.

If you need to make any changes to the protocol these would go through the REC, but I would appreciate if you could also copy University ethics into any correspondence.

Good luck with the project.

Best wishes,
Zsofia

Zsofia Garai-Takacs
Lecturer in Applied Psychology
Ethics & Integrity Lead

Appendix 12: Psychosis Journal Author Guidelines (Systematic Review)

Preparing Your Paper

All authors submitting to medicine, biomedicine, health sciences, allied and public health journals should conform to the Uniform Requirements for Manuscripts Submitted to Biomedical Journals, prepared by the International Committee of Medical Journal Editors (ICMJE).

Structure

Your paper should be compiled in the following order: title page; abstract; keywords; main text introduction, materials and methods, results, discussion; acknowledgments; declaration of interest statement; references; appendices (as appropriate); table(s) with caption(s) (on individual pages); figures; figure captions (as a list).

Word Limits

Please include a word count for your paper.

Word limits include everything, i.e abstract, tables and references.

The journal does not publish supplementary material.

- **Research Article or a Literature Review**

- The maximum word length this journal is 6000 words.
- **First Person Account**
- The maximum word length is 3500 words.
- **Brief Report**
- The maximum word length is 1500 words.
- **Opinion Piece**
- The maximum word length is 1500 words.
- **Letters to Editor**
- The maximum word length is 400 words.
- **Book Review**
- The maximum word length is 1000 words.
- **Registered Report**
- Should be written with the following elements in the following order: title page; abstract; keywords; main text introduction, materials and methods, results, discussion; acknowledgements; data availability statement; declaration of interest statement; references; appendices (as appropriate); table(s) with caption(s) (on individual pages); figures; figure captions (as a list).
- Should be no more than 3500 for Stage 1 reports and no more than 5000 words for Stage 2, inclusive of the abstract, tables, references, figure captions, footnotes, endnotes.
- Should contain an unstructured abstract of 250 words.
- Should contain no more than 6 keywords. Read making your article more discoverable, including information on choosing a title and search engine optimization.
- Registered reports – are a form of empirical article in which the methods and proposed analyses are pre-registered and reviewed prior to the research being conducted. High quality protocols are then provisionally accepted for publication before data collection commences. Acceptance in principle indicates that the article will be published pending successful completion of the study according to the pre-registered methods and analytic procedures, as well as inclusion of a defensible and evidence-based interpretation of the results. Full details on the registered reports workflow and policies can be found here.

Style Guidelines

Please refer to these quick style guidelines when preparing your paper, rather than any published articles or a sample copy.

Any spelling style is acceptable so long as it is consistent within the manuscript.

Please use double quotation marks, except where “a quotation is ‘within’ a quotation”. Please note that long quotations should be indented without quotation marks.

Formatting and Templates

Papers may be submitted in Word format. Figures should be saved separately from the text. To assist you in preparing your paper, we provide formatting template(s).

Word templates are available for this journal. Please save the template to your hard drive, ready for use.

If you are not able to use the template via the links (or if you have any other template queries) please contact us here.

References

Please use this reference guide when preparing your paper.

An EndNote output style is also available to assist you.

Taylor & Francis Editing Services

To help you improve your manuscript and prepare it for submission, Taylor & Francis provides a range of editing services. Choose from options such as English Language Editing, which will ensure that your article is free of spelling and grammar errors, Translation, and Artwork Preparation. For more information, including pricing, visit this website.

Checklist: What to Include

1. **Author details.** Please ensure everyone meeting the International Committee of Medical Journal Editors (ICMJE) requirements for authorship is included as an author of your paper. Please ensure all listed authors meet the Taylor & Francis authorship criteria. All authors of a manuscript should include their full name and affiliation on the cover page of the manuscript. Where available, please also include ORCiDs and social media handles (Facebook, Twitter or LinkedIn). One author will need to be identified as the corresponding author, with their email address normally displayed in the article PDF (depending on the journal) and the online article. Authors' affiliations are the affiliations where the research was conducted. If any of the named co-authors moves affiliation during the peer-review process, the new affiliation can be given as a footnote. Please note that no changes to affiliation can be made after your paper is accepted. Read more on authorship.
2. Should contain a structured abstract of 200 words. (BACKGROUND, METHODS, RESULTS, DISCUSSION)
3. You can opt to include a **video abstract** with your article. Find out how these can help your work reach a wider audience, and what to think about when filming.
4. Between 5 and 6 **keywords**. Read making your article more discoverable, including information on choosing a title and search engine optimization.
5. **Funding details.** Please supply all details required by your funding and grant-awarding bodies as follows:
   For single agency grants
   This work was supported by the [Funding Agency] under Grant [number xxxx].
   For multiple agency grants
   This work was supported by the [Funding Agency #1] under Grant [number xxxx]; [Funding Agency #2] under Grant [number xxxx]; and [Funding Agency #3] under Grant [number xxxx].

6. **Disclosure statement.** This is to acknowledge any financial or non-financial interest that has arisen from the direct applications of your research. If there are no relevant competing interests to declare please state this within the article, for example: *The authors report there are no competing interests to declare.* Further guidance on what is a conflict of interest and how to disclose it.
7. **Data availability statement.** If there is a data set associated with the paper, please provide information about where the data supporting the results or analyses presented in the paper can be found. Where applicable, this should include the hyperlink, DOI or other persistent identifier associated with the data set(s). Templates are also available to support authors.
8. **Data deposition.** If you choose to share or make the data underlying the study open, please deposit your data in a recognized data repository prior to or at the time of submission. You will be asked to provide the DOI, pre-reserved DOI, or other persistent identifier for the data set.
9. **Figures.** Figures should be high quality (1200 dpi for line art, 600 dpi for grayscale and 300 dpi for colour, at the correct size). Figures should be supplied in one of our preferred file formats: EPS, PS, JPEG, TIFF, or Microsoft Word (DOC or DOCX) files are acceptable for figures that have been drawn in Word. For information relating to other file types, please consult our Submission of electronic artwork document.
10. **Tables.** Tables should present new information rather than duplicating what is in the text. Readers should be able to interpret the table without reference to the text. Please supply editable files.
11. **Equations.** If you are submitting your manuscript as a Word document, please ensure that equations are editable. More information about mathematical symbols and equations.
12. **Units.** Please use SI units (non-italicized).

Appendix 13: Psychology and Psychotherapy: Theory, Research and Practice Author Guidelines (Used for Empirical paper)

PAPTRAP AUTHOR GUIDELINES

Sections

1. SUBMISSION

Authors should kindly note that submission implies that the content has not been published or submitted for publication elsewhere except as a brief abstract in the proceedings of a scientific meeting or symposium.

New submissions should be made via the Research Exchange submission portal. You may check the status of your submission at any time by logging on to submission.wiley.com and clicking the “My Submissions” button. For technical help with the submission system, please review our FAQs or contact submissionhelp@wiley.com.

All papers published in the *Psychology and Psychotherapy: Theory Research and Practice* are eligible for Panel A: Psychology, Psychiatry and Neuroscience in the Research Excellence Framework (REF).

Data protection:

By submitting a manuscript to or reviewing for this publication, your name, email address, and affiliation, and other contact details the publication might require, will be used for the regular operations of the publication, including, when necessary, sharing with the publisher (Wiley) and partners for production and publication. The publication and the publisher recognize the importance of protecting the personal information collected from users in the operation of these services, and have practices in place to ensure that steps are taken to maintain the security, integrity, and privacy of the personal data collected and processed. You can learn more at https://authorservices.wiley.com/statements/data-protection-policy.html.

Preprint policy:

This journal will consider for review articles previously available as preprints. Authors may also post the submitted version of a manuscript to a preprint server at any time. Authors are requested to update any pre-publication versions with a link to the final published article.

2. AIMS AND SCOPE

Psychology and Psychotherapy: Theory Research and Practice (formerly The British Journal of Medical Psychology) is an international scientific journal with a focus on the psychological and social processes that underlie the development and improvement of psychological problems and mental wellbeing, including:

- theoretical and research development in the understanding of cognitive and emotional factors in psychological problems;
- behaviour and relationships; vulnerability to, adjustment to, assessment of, and recovery (assisted or otherwise) from psychological distresses;
- psychological therapies, including digital therapies, with a focus on understanding the processes which affect outcomes where mental health is concerned.

The journal places particular emphasis on the importance of theoretical advancement and we request that authors frame their empirical analysis in a wider theoretical context and present the theoretical interpretations of empirical findings.

We welcome submissions from mental health professionals and researchers from all relevant professional backgrounds both within the UK and internationally.

In addition to more traditional, empirical, clinical research we welcome the submission of

- systematic reviews following replicable protocols and established methods of synthesis
- qualitative and other research which applies rigorous methods
- high quality analogue studies where the findings have direct relevance to clinical models or practice.

Clinical or case studies will not normally be considered except where they illustrate particularly unusual forms of psychopathology or innovative forms of therapy and meet scientific criteria through appropriate use of single case experimental designs.

All papers published in *Psychology and Psychotherapy: Theory, Research and Practice* are eligible for Panel A: Psychology, Psychiatry and Neuroscience in the Research Excellence Framework (REF).

3. MANUSCRIPT CATEGORIES AND REQUIREMENTS

- Articles should adhere to the stated word limit for the particular article type. The word limit excludes the abstract, reference list, tables and figures, but includes appendices.

Word limits for specific article types are as follows:

- Research articles: 5000 words
- Qualitative papers: 8000 words

- Review papers: 6000 words
- Special Issue papers: 5000 words

In exceptional cases the Editor retains discretion to publish papers beyond this length where the clear and concise expression of the scientific content requires greater length (e.g., explanation of a new theory or a substantially new method). Authors must contact the Editor prior to submission in such a case.

Please refer to the separate guidelines for Registered Reports.

All systematic reviews must be pre-registered and an anonymous link to the pre-registration must be provided in the main document, so that it is available to reviewers. Systematic reviews without pre-registration details will be returned to the authors at submission.

Brief-Report COVID-19

For a limited time, the *Psychology and Psychotherapy: Theory, Research and Practice* are accepting brief-reports on the topic of Novel Coronavirus (COVID-19) in line with the journal's main aims and scope (outlined above). Brief reports should not exceed 2000 words and should have no more than two tables or figures. Abstracts can be either structured (according to standard journal guidance) or unstructured but should not exceed 200 words. Any papers that are over the word limits will be returned to the authors. Appendices are included in the word limit; however online supporting information is not included.

4. PREPARING THE SUBMISSION

Free Format Submission

Psychology and Psychotherapy: Theory, Research and Practice now offers free format submission for a simplified and streamlined submission process.

Before you submit, you will need:

- Your manuscript: this can be a single file including text, figures, and tables, or separate files – whichever you prefer (if you do submit separate files, we encourage you to also include your figures within the main document to make it easier for editors and reviewers to read your manuscript, but this is not compulsory). All required sections should be contained in your manuscript, including abstract, introduction, methods, results, and conclusions. Figures and tables should have legends. References may be submitted in any style or format, as long as it is consistent throughout the manuscript. If the manuscript, figures or tables are difficult for you to read, they will also be difficult for the editors and reviewers. If your manuscript is difficult to read, the editorial office may send it back to you for revision.
- The title page of the manuscript, including a data availability statement and your co-author details with affiliations. *(Why is this important? We need to keep all co-authors informed of the outcome of the peer review process.)* You may like to use this template for your title page.

Important: the journal operates a double-anonymous peer review policy. Please anonymise your manuscript and prepare a separate title page containing author

details. *(Why is this important? We need to uphold rigorous ethical standards for the research we consider for publication.)*

- An ORCID ID, freely available at https://orcid.org. *(Why is this important? Your article, if accepted and published, will be attached to your ORCID profile. Institutions and funders are increasingly requiring authors to have ORCID IDs.)*

To submit, login at https://wiley.atyponrex.com/journal/PAPT and create a new submission. Follow the submission steps as required and submit the manuscript.

If you are invited to revise your manuscript after peer review, the journal will also request the revised manuscript to be formatted according to journal requirements as described below.

Revised Manuscript Submission

Contributions must be typed in double spacing. All sheets must be numbered.

Cover letters are not mandatory; however, they may be supplied at the author's discretion. They should be pasted into the 'Comments' box in Editorial Manager.

Parts of the Manuscript

The manuscript should be submitted in separate files: title page; main text file; figures/tables; supporting information.

Title Page

You may like to use this template for your title page. The title page should contain**:**

- A short informative title containing the major key words. The title should not contain abbreviations (see Wiley's best practice SEO tips);
- A short running title of less than 40 characters;

- The full names of the authors;
- The author's institutional affiliations where the work was conducted, with a footnote for the author's present address if different from where the work was conducted;
- Abstract;
- Keywords;
- Data availability statement (see Data Sharing and Data Accessibility Policy);
- Acknowledgments.

Author Contributions

For all articles, the journal mandates the CRediT (Contribution Roles Taxonomy)—more information is available on our Author Services site.

Abstract

Please provide an abstract of up to 250 words. Articles containing original scientific research should include the headings: Objectives, Design, Methods, Results, Conclusions. Review articles should use the headings: Purpose, Methods, Results, Conclusions.

Keywords

Please provide appropriate keywords.

Acknowledgments

Contributions from anyone who does not meet the criteria for authorship should be listed, with permission from the contributor, in an Acknowledgments section. Financial and material support should also be mentioned. Thanks to anonymous reviewers are not appropriate.

Practitioner Points

All articles must include Practitioner Points – these are 2-4 bullet point with the heading 'Practitioner Points'. They should briefly and clearly outline the relevance of your research to professional practice.

Main Text File

As papers are double-anonymous peer reviewed, the main text file should not include any information that might identify the authors.

Manuscripts can be uploaded either as a single document (containing the main text, tables and figures), or with figures and tables provided as separate files. Should your manuscript reach revision stage, figures and tables must be provided as separate files. The main manuscript file can be submitted in Microsoft Word (.doc or .docx) or LaTex (.tex) format.

If submitting your manuscript file in LaTex format via Research Exchange, select the file designation "Main Document – LaTeX .tex File" on upload. When submitting a LaTex Main Document, you must also provide a PDF version of the manuscript for Peer Review. Please upload this file as "Main Document - LaTeX PDF." All supporting files that are referred to in the LaTex Main Document should be uploaded as a "LaTeX Supplementary File."

LaTex Guidelines for Post-Acceptance:

Please check that you have supplied the following files for typesetting post-acceptance:

- PDF of the finalized source manuscript files compiled without any errors.
- The LaTeX source code files (text, figure captions, and tables, preferably in a single file), BibTex files (if used), any associated packages/files along with all other files needed for compiling without any errors. This is particularly important if authors have used any LaTeX style or class files, bibliography files (.bbl, .bst. .blg) or packages apart from those used in the NJD LaTex Template class file.
- Electronic graphics files for the illustrations in Encapsulated PostScript (EPS), PDF or TIFF format. Authors are requested not to create figures using LaTeX codes.

Your main document file should include:

- A short informative title containing the major key words. The title should not contain abbreviations;
- Acknowledgments;
- Abstract structured (intro/methods/results/conclusion);
- Up to seven keywords;
- Practitioner Points Authors will need to provide 2-4 bullet points, written with the practitioner in mind, that summarize the key messages of their paper to be published with their article;
- Main body: formatted as introduction, materials & methods, results, discussion, conclusion;
- References;
- Tables (each table complete with title and footnotes);
- Figure legends: Legends should be supplied as a complete list in the text. Figures should be uploaded as separate files (see below);
- Statement of Contribution.

Supporting information should be supplied as separate files. Tables and figures can be included at the end of the main document or attached as separate files but they must be mentioned in the text.

- As papers are double-anonymous peer reviewed, the main text file should not include any information that might identify the authors. Please do not mention the authors' names or affiliations and always refer to any previous work in the third person.
- The journal uses British/US spelling; however, authors may submit using either option, as spelling of accepted papers is converted during the production process.

References

This journal uses APA reference style; as the journal offers Free Format submission, however, this is for information only and you do not need to format the references in your article. This will instead be taken care of by the typesetter.

Tables

Tables should be self-contained and complement, not duplicate, information contained in the text. They should be supplied as editable files, not pasted as images. Legends should be concise but comprehensive – the table, legend, and footnotes must be understandable without reference to the text. All abbreviations must be defined in footnotes. Footnote symbols: †, ‡, §, ¶, should be used (in that order) and *, **, *** should be reserved for P-values. Statistical measures such as SD or SEM should be identified in the headings.

Figures

Although authors are encouraged to send the highest-quality figures possible, for peer-review purposes, a wide variety of formats, sizes, and resolutions are accepted.

Click here for the basic figure requirements for figures submitted with manuscripts for initial peer review, as well as the more detailed post-acceptance figure requirements.

Legends should be concise but comprehensive – the figure and its legend must be understandable without reference to the text. Include definitions of any symbols used and define/explain all abbreviations and units of measurement.

Supporting Information

Supporting information is information that is not essential to the article, but provides greater depth and background. It is hosted online and appears without editing or typesetting. It may include tables, figures, videos, datasets, etc.

Click here for Wiley's FAQs on supporting information.

Note: if data, scripts, or other artefacts used to generate the analyses presented in the paper are available via a publicly available data repository, authors should include a reference to the location of the material within their paper.

General Style Points

For guidelines on editorial style, please consult the APA Publication Manual published by the American Psychological Association. The following points provide general advice on formatting and style.

- **Language:** Authors must avoid the use of sexist or any other discriminatory language.
- **Abbreviations:** In general, terms should not be abbreviated unless they are used repeatedly and the abbreviation is helpful to the reader. Initially, use the word in full, followed by the abbreviation in parentheses. Thereafter use the abbreviation only.
- **Units of measurement:** Measurements should be given in SI or SI-derived units. Visit the Bureau International des Poids et Mesures (BIPM) website for more information about SI units.
- **Effect size:** In normal circumstances, effect size should be incorporated.
- **Numbers:** numbers under 10 are spelt out, except for: measurements with a unit (8mmol/l); age (6 weeks old), or lists with other numbers (11 dogs, 9 cats, 4 gerbils).

Wiley Author Resources

Manuscript Preparation Tips: Wiley has a range of resources for authors preparing manuscripts for submission available here. In particular, we encourage authors to consult Wiley's best practice tips on Writing for Search Engine Optimization.

Article Preparation Support: Wiley Editing Services offers expert help with English Language Editing, as well as translation, manuscript formatting, figure illustration, figure formatting, and graphical abstract design – so you can submit your manuscript with confidence.

Also, check out our resources for **Preparing Your Article** for general guidance and the **BPS Publish with Impact infographic** for advice on optimizing your article for search engines.

5. EDITORIAL POLICIES AND ETHICAL CONSIDERATIONS

Peer Review and Acceptance

Except where otherwise stated, the journal operates a policy of anonymous (double-anonymous) peer review. Please ensure that any information which may reveal author identity is anonymized in your submission, such as institutional affiliations, geographical location or references to unpublished research. We also operate a triage process in which submissions that are out of scope or otherwise inappropriate will be rejected by the editors without external peer review. Before submitting, please read the terms and conditions of submission and the declaration of competing interests.

We aim to provide authors with a first decision within 90 days of submission.

Further information about the process of peer review and production can be found in 'What happens to my paper?' Appeals are handled according to the procedure recommended by COPE. Wiley's policy on the confidentiality of the review process is available here.

Clinical Trial Registration

The journal requires that clinical trials are prospectively registered in a publicly accessible database and clinical trial registration numbers should be included in all papers that report their results. Authors are asked to include the name of the trial register and the clinical trial registration number at the end of the abstract. If the trial is not registered, or was registered retrospectively, the reasons for this should be explained.

Research Reporting Guidelines

Accurate and complete reporting enables readers to fully appraise research, replicate it, and use it. Authors are encouraged to adhere to recognised research reporting standards.

We also encourage authors to refer to and follow guidelines from:

- Future of Research Communications and e-Scholarship (FORCE11)
- The Gold Standard Publication Checklist from Hooijmans and colleagues
- FAIRsharing website

Conflict of Interest

The journal requires that all authors disclose any potential sources of conflict of interest. Any interest or relationship, financial or otherwise that might be perceived as influencing an author's objectivity is considered a potential source of conflict of interest. These must be disclosed when directly relevant or directly related to the work that the authors describe in their manuscript. Potential sources of conflict of interest include, but are not limited to: patent or stock ownership, membership of a company board of directors, membership of an advisory board or committee for a company, and consultancy for or receipt of speaker's fees from a company. The existence of a conflict of interest does not preclude publication. If the authors have no conflict of interest to declare, they must also state this at submission. It is the responsibility of the corresponding author to review this policy with all authors and collectively to disclose with the submission ALL pertinent commercial and other relationships.

Funding

Authors should list all funding sources in the Acknowledgments section. Authors are responsible for the accuracy of their funder designation. If in doubt, please check the Open Funder Registry for the correct nomenclature: https://www.crossref.org/services/funder-registry/

Authorship

All listed authors should have contributed to the manuscript substantially and have agreed to the final submitted version. Authorship is defined by the criteria set out in the APA Publication Manual:

"Individuals should only take authorship credit for work they have actually performed or to which they have substantially contributed (APA Ethics Code Standard 8.12a, Publication Credit). Authorship encompasses, therefore, not only those who do the actual writing but also those who have made substantial scientific contributions to a study. Substantial professional contributions may include formulating the problem or hypothesis, structuring the experimental design, organizing and conducting the statistical analysis, interpreting the results, or writing a major portion of the paper. Those who so contribute are listed in the byline." (p.18)

Data Sharing and Data Accessibility Policy

Psychology and Psychotherapy: Theory, Research and Practice recognizes the many benefits of archiving data for scientific progress. Archived data provides an indispensable resource for the scientific community, making possible future replications and secondary analyses, in addition to the importance of verifying the dependability of published research findings.

The journal expects that where possible all data supporting the results in papers published are archived in an appropriate public archive offering open access and guaranteed preservation. The archived data must allow each result in the published paper to be recreated and the analyses reported in the paper to be replicated in full to support the conclusions made. Authors are welcome to archive more than this, but not less.

All papers need to be supported by a data archiving statement and the data set must be cited in the Methods section. The paper must include a link to the repository in order that the statement can be published.

It is not necessary to make data publicly available at the point of submission, but an active link must be included in the final accepted manuscript. For authors who have pre-registered studies, please use the Registered Report link in the Author Guidelines.

In some cases, despite the authors' best efforts, some or all data or materials cannot be shared for legal or ethical reasons, including issues of author consent, third party rights, institutional or national regulations or laws, or the nature of data gathered. In such cases, authors must inform the editors at the time of submission. It is understood that in some cases access will be provided under restrictions to protect confidential or proprietary information. Editors may grant exceptions to data access requirements provided authors explain the restrictions on the data set and how they preclude public access, and, if possible, describe the steps others should follow to gain access to the data.

If the authors cannot or do not intend to make the data publicly available, a statement to this effect, along with the reasons that the data is not shared, must be included in the manuscript.

Finally, if submitting authors have any questions about the data sharing policy, please access the FAQs for additional detail.

Open Research initiatives.

Recognizing the importance of research transparency and data sharing to cumulative research, *Psychology and Psychotherapy: Theory, Research and Practice* encourages the following Open Research practices.