Voice-hearing and personification: Characterising social qualities of auditory verbal hallucinations in early psychosis.

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Main text: 4000

Abstract: 242

ABSTRACT

Background: Recent therapeutic approaches to auditory verbal hallucinations (AVH) exploit the person-like qualities of voices. Little is known, however, about how, why and when AVH become personified. We aimed to investigate personification in individuals' early voice experiences.

Methods: We invited users of Early Intervention in Psychosis (EIP) services aged 16–65 to participate in a semi-structured interview on AVH phenomenology. Voice-hearers in the first nine months of using EIP were recruited through two NHS trusts in the North-East of England. We used content and inductive thematic analysis to code the interviews, then examined key associations with personification using a variety of statistical methods.

Results: Forty individuals participated between September 2017 and April 2019. Many participants reported a range of negative emotions (predominantly fear, 60%, 24/60, and anxiety, 62.5%, 26/40), visual hallucinations (75%, 30/40), bodily states (65%, 25/40), and “felt presences” (52.5%, 21/40) in relation to voices. Complex personification, reported by a sizeable minority (16/40, 40%), was associated with experiencing voices as conversational (OR = 2.56) and companionable (OR = 3.19), but not as commanding or connected to trauma. Neither age of onset nor time since voices were first reported related to voice personification.

Conclusions: Our findings affirm recent investigations of the heterogeneity of AVH while offering new insights into the variety and significance of personified voices. Personified voices appear to be distinguished less by their intrinsic properties, commanding qualities or connection with trauma, than by their affordances for conversation and companionship.

INTRODUCTION

Auditory verbal hallucinations (AVH) – hearing voices that others cannot hear – are a prominent feature of psychotic disorders. Not all AVH warrant psychiatric care, but they are often distressing, debilitating and persistent, despite treatment with antipsychotic medication and cognitive behavioural therapy (CBT) for psychosis¹.

Recent therapeutic approaches to AVH have gained attention by encouraging voice-hearers to talk to their voices. This may involve “empty chair” work, role-play, or dialoguing with a computer simulation of a distressing voice^{2–4}. Such techniques exploit person-like qualities of AVH and treat them as entities that can be conversed with meaningfully. Talking to voices has not always been encouraged for various reasons, including fear of reinforcing beliefs about the reality of the experience. However, promising results in long-term voice-hearers suggest that dialogue may be considerably beneficial for some⁵. To understand the broader suitability of such methods, we first need to ask whether, how, why, and when AVH become personified.

Influential theories posit voice personification as a secondary response to a primary hallucinatory experience, which may be elaborated over time^{6,7}. The focus has been on *who* the voices represent and whether voice identity, real or unreal^{8,9}, reflects delusional thinking⁷. Prominent cognitive approaches to AVH have placed emphasis on beliefs concerning voice power and omnipotence, orienting therapy towards challenging commands from malevolent voices^{10,11}.

Personification, though, consists of more than identity and power; to apprehend something as being “like a person” may also involve ascribing animacy, agency, physical features, intentions, or linguistic and characterological complexity^{12–15}. Recent phenomenological research has emphasised the multimodal and embodied nature of AVH: for example, voices may be described as having presence or “appearing” in more than one modality¹⁶. Similarly, voices may be experienced with an emotional depth that goes beyond fears of omnipotence and malevolence^{17–19}. These considerations imply that social and agent-like properties of AVH are, in fact, primary to the experience, rather than secondary interpretations²⁰. This is also consistent with trauma-informed and Hearing Voices Movement approaches, where person-like voices are often understood as reflecting past relationships and interpersonal trauma^{17,21,22}.

Understanding the role of personification in AVH requires a clear account of what voices are like when they start¹³. Few studies, however, have focused on early AVH phenomenology, with researchers relying instead on retrospective accounts from long-term voice-hearers of how their voices began^{17,20}. Some qualitative studies have collected longitudinal data on voices^{23–25}, but they have not typically tracked early phenomenology or personification in detail, instead focusing on beliefs about voices. Exploring how voices present initially – or as early as possible – is key to understanding their potential person-like qualities. Moreover, it allows for closer examination of the psychological, biographical and social context in which such qualities emerge.

Here we present findings exploring AVH personification in a group of new Early Intervention in Psychosis (EIP) users. Although many people hear voices *before* becoming known to services, recruitment of such individuals can be highly challenging; we chose EIP to provide a pragmatic snapshot of early clinical presentation in a large, regional UK service. Within this context AVH assessment may be influenced by range of clinical concerns (such as risk or capacity) and this is reflected in the detail and focus of many standard interviews for AVH^{26,27}. For a complex topic such as personification, it is important to look beyond existing clinical constructs and draw upon multiple kinds of expertise, both from experts-by-experience and across the academy²⁸. Our previous study¹⁶ utilised an online phenomenological survey with the input of multiple disciplines and lived experience researchers to explore hitherto unexamined properties of voice-hearing in a heterogeneous sample.

Here we used a similar approach to explore AVH characteristics in more depth, using a semi-structured interview that focused on early presentation and person-like qualities of voices (characteristics not typically emphasised in prior surveys^{9,27}). We used a mixed-methods approach to characterise the degree of personification evident in the sample alongside other phenomenological and clinical characteristics, permitting comparisons with prior research^{8,29}. We identified common associations with “person-like” voices, and examined whether personification reflects trauma and commanding voices – as suggested previously^{11,21} – or is in itself an important, independent dimension of AVH.

METHOD

Participants

Users of two EIP services in northern England were invited to take part if they i) were aged 16–65, ii) heard voices at least once a week for a month, iii) were in their first nine months of using EIP services, iv) were fluent English speakers, and v) had normal or corrected-to-normal vision. Exclusion criteria were i) the presence of a suspected duration of untreated psychosis longer than five years, ii) any neurological diagnoses, or iii) having a hearing impairment that required the use of hearing aids. Participant information sheets did not define AVH characteristics in advance, but referred to “hearing voices that others cannot hear”. Recruitment was open from September 2017 to April 2019 and was conducted primarily via case-list review. This cohort are being followed up using the same protocol at 12- and 24-months following entry into the study. A pragmatic sample of 40 participants was recruited to enable in-depth qualitative interviewing and analysis, exploratory quantitative analysis, and longitudinal follow-up. All procedures were approved by a local NHS Research Ethics Committee.

Materials

- The Hearing the Voice Phenomenology Interview

Participants took part in a semi-structured interview with one of two interviewers trained in clinical, phenomenological and qualitative health interviewing. Following our previous survey¹⁶, eight open-ended questions about AVH were used to elicit discussion, followed by prompts allowing for comparison and elaboration. The interview was developed by an interdisciplinary team (including psychologists, philosophers, linguists, theologians, literary and medical humanities scholars) in consultation with experts-by-experience and with service-user input into its design and acceptability (see **Supplementary Materials**). Bracketing assumptions about voice-hearing experiences, questions progressed from the general (“Please could you describe the voice or voice-like experiences you have been having?”) to the specific, being careful not to introduce suggestions of character or presence until participants’ own descriptions and interpretations were firmly established in the interview. Sessions typically took one hour (range 24–105 minutes).

- Psychotic Symptoms Rating Scale (PSYRATS)

The PSYRATS is a common tool for assessing severity of hallucinations and delusions in people with psychosis, consisting of 13 questions about AVH and six about unusual beliefs²⁷. Item ratings are made by the interviewer ranging from 0–4 (absent-most severe). The PSYRATS was used to allow for

examination of how properties of voices related to standardised ratings of severity and distress, as per prior research.¹

Procedure

Participants were approached by a clinical research worker and provided with information about the study. After providing written consent to take part, participants completed the phenomenology interview and PSYRATS with a study interviewer. Sessions took place in participants' homes, NHS settings, or a university room, depending on participant preference. All interviews were recorded and then professionally transcribed for analysis.

Analysis

Interview data were analysed using a mixture of qualitative and quantitative methods. A combination of content analysis and inductive thematic analysis³⁰ was used to derive a coding frame that permitted direct comparison with prior phenomenological surveys of AVH^{8,9,16}, while also allowing for nuanced analysis of the specific qualities of the data collected. This was developed iteratively by an interdisciplinary team (two psychologists and a medical humanities scholar) who met after each interview to discuss new codes, fully co-coded seven interviews, discussed and resolved disagreements, and then coded the rest of the sample independently. Interrater reliability for co-coded interviews was satisfactory, using the three-way rating permitted by Krippendorff's alpha ($\alpha = 0.70$). Coding discussions included re-checking of code use and ongoing consideration of saturation. Two recent service-users with lived experience of voices were employed as consultants who read and discussed the anonymised interview transcripts with the research team, prior to results dissemination.

Quantitative analysis was used to examine common associations among codes of interest, and to compare participants with and without key codes on continuous outcomes (such as levels of distress). Due to the sample size and exploratory nature of the research question, a descriptive approach was deployed using log odds ratios and effect sizes (Cohen's *d*) to indicate strengths of association, rather than a hypothesis-testing approach using significance testing. All analyses were conducted in R using the *jmv* package. For parsimony, only odds ratios with confidence intervals not crossing zero are referred to in the text. If not included in figures or tables, all other relevant odds ratios and 95% confidence intervals are reported in **Supplementary Materials**. R code and quantitative data for the paper are available at <https://osf.io/arj86/>.

RESULTS

Forty-one participants took part, although one participant was excluded retrospectively after it was established that they had not experienced sufficiently recent AVH ($n = 40$, Age $M(SD) = 28.70 (9.96)$ years). The average amount of time in EIP was just under four months ($M = 114.13$ days, $SD = 64.77$). Thirty-five (87.5%) were currently taking antipsychotic medication, while 17 (42.5%) had had access to some form of psychological therapy (in 11 cases – 27.5% – this was CBT). At time of assessment, 45% of participants did not have any clinical diagnosis, consistent with the fact that distressing symptom

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¹ As part of a wider study, subsets of participants also completed self-report measures of delusional thinking, inner speech, hallucination-proneness, loneliness, and functioning, plus a cognitive assessment and MRI scan as part of separate sessions. These data will be reported elsewhere.

presence rather than fulfilment of diagnostic criteria is an entry requirement for EIP services. 42.5% had a psychotic disorder diagnosis (substance induced psychosis 2.5%, schizophrenia 5%, depression with psychotic features 10%, unspecified psychosis 25%). while the remaining 12.5% had a non-psychotic diagnosis (5% EUPD, 5% PTSD, 2.5% delirium). Reflecting regional norms, all but one participant was of white British ethnicity (1/40 British Asian).

On average, participants had been hearing voices for 74.38 months ($SD = 81.24$, range 1–329). Mean age of voice onset was 22.68 years ($SD = 13.45$)². Onset did not always coincide with need-for-care: in nine cases, the first experience was not distressing (age $M (SD) = 11.11 (7.97)$ years), with distressing voices only appearing many years later ($M (SD) = 20.67 (9.02)$). For those whose first experience was distressing ($N = 30$), the age of onset was often higher ($M = 26.15$ years, $SD = 12.87$, $d = 1.26$). In these cases, participants had typically been hearing voices for less than four years ($M = 43.93$ months, $SD = 56.96$). Earlier onsets in life were often described with more benign voice content and interpretation, while later onsets implicated issues with monitoring reality (see **Panel 1**).

Table 1. Sensory quality, space, control and change over time.

Sensory qualities and modality	N	%
Auditory	37	92.5
Thought-like	21	52.5
Non-verbal	16	40
Visual hallucination	30	75
Visual imagery	2	5
Tactile hallucination	9	22.5
Olfactory hallucination	15	37.5
Gustatory hallucinations	0	0
Dissociative experiences	12	30
Bodily states	26	65
Felt presence	21	52.5
Multimodal voices	11	27.5
Spatiality		
Internal	25	62.5
External	32	80
Egocentric voices	28	70
Allocentric voices	15	37.5
"Boundary" voices	14	35
Control & change		
Non-volitional occurrence	40	100
Volitional occurrence	1	2.5
Ability to influence voice	11	27.5
Change in influence	5	12.5
Change in frequency	28	70
Change in number or structure of voices over time	32	80

² This estimate excludes one participant could only say that it first happened “a very long time ago”.

Table 2. Affect, agency and interpretation.

Affect and content	N	%
Voices elicit positive emotions	14	35
Voices elicit negative emotions	40	100
i) Anxiety-associated	26	65
ii) Depression-associated	21	52.5
iii) Fear-associated	24	60
iv) Paranoia-associated	20	50
Simple linguistic structure	16	40
Directly address voice-hearer	33	82.5
Voices comment on voice-hearer	18	45
Voices converse with voice-hearer	19	47.5
Commanding voices	27	67.5
i) Voice-hearer follows commands	13	32.5
Abusive/violent voices	35	87.5
Positive/helpful voices	17	42.5
Companionship from voice	13	32.5
Voice knows more than voice-hearer	18	45
Agency and character		
Recurring voices	37	92.5
Voices recognisable from voice-hearer's life	19	47.5
Change in character or personality of voices across time	7	17.5
Absent agency§	6	15
Agency without individuation§	18	45
Internally individualised agency§	30	75
Externally individualised agency§	20	50
Minimal personification*	24	60
Complex personification*	16	40
Archetypal features	17	42.5
Social context and interpretation		
Voices important to identity/sense of self	5	12.5
Positive impact on relationships	2	5
Negative impact on relationships	31	77.5
Self-stigma regarding voices	19	47.5
Suicidal thoughts or actions	20	50
Sleep disruption	25	62.5
Traumatic context around onset	26	65
Trauma interpretation	10	25
Biophysical interpretation	10	25
Stress interpretation	15	37.5
Idiosyncratic interpretation	13	32.5
Supernatural/spiritual interpretation	8	20
Family narrative	9	22.5

Panel 1: When voices start

I can hear her since I was like six.... Actually see her from about sixteen I'd say.... she was just copying, taking the mick out of me a little bit when I was little.... But then like when I was little, I saw it as imaginary friend type of thing, I just put it down to that.... And then when I got to about thirteen, fourteen, she got on about me weight a lot. And when I was sixteen, it got to about her hurting me because I was trying to lose weight so much. [Orla, age 19]

They started in ... the voices that actually talk to me, I'm overhearing conversations. And they started the beginning of November last year, when I believed I was witnessing either a... a sex ring or a drug ring outside... and initially it was only a couple of nights a week, gradually it became more and more, and what I believed I was hearing was... turned into an undercover operation, involving police officers who were part of, who had infiltrated the ring, and were part of this ring that was going on outside. 99% of the time it was voices that I heard, sometimes I heard footsteps, but it was all me witnessing things outside me house. [Jade, age 62]

Table 1 displays the sensory characteristics coded from the interview data (see **Supplementary Materials** for all codes and their definitions). Most participants reported literal *auditory* qualities of their voices, but around half (21/40; 52.5%) also reported voices that had thought-like qualities. Other senses featured prominently, including *visual* (30/40, 75%) and *olfactory* (15/40, 37.5%) hallucinations. Two-thirds (26/40) of the sample reported changes to *bodily states* associated with AVH, while 21 (52.5%) reported *felt presences*, in which voices (or other entities) were experienced as being present or close by without speaking. *Multimodal* voices, where more than one sensory experience was explicitly connected to the voice (e.g., the voice could be seen or smelled, even if not simultaneously heard; see **Panel 2**), were reported by 11 participants (27.5%).

As well as coding for *internally-* and *externally-located* voices, we also coded for voices that were positioned either in relation to the voice-hearer (*egocentric*; 28/40, 70%), their immediate environment (*allocentric*; 15/40, 37.5%), and cases of *boundary voices*, or voices that were predominantly experienced at thresholds such as doors, walls and other barriers (14/40, 35%). Here the location of voices was often described in terms of a struggle to establish who was speaking or what was happening beyond their immediate space.

All participants reported their voices being associated with *negative emotions* – most notably, *anxiety* and *fear* – but 35% (14/40) also reported *positive emotions* relating to their voices (see **Table 2**). The majority (27/40, 67.5%) reported voices that provided them with *commands* to act, ranging from mundane imperatives, to clear instructions to harm (mostly towards themselves). Other voices *commented* on day-to-day activities, choices and thoughts (18/40, 45%) or could be engaged in a *conversation* (47.5%, 19/40). Despite the overall negativity of many of the voices described, 32.5% (13/40) of the sample also reported their voices providing a sense of *companionship*. Almost all participants reported specific voices that *recurred* over time (37/40, 92.5%), and a large proportion (19/40, 47.5%) included voices that were *recognisable* as real people. Wilkinson and Bell²⁰ propose four levels of AVH agency: using these criteria (marked with a § in **Table 2**), most participants described voices that recurred over time, had a distinct character, but could not be related to a known person (*internally-individuated agency*; 30/40, 75%).

We also coded the data for the overall level of voice personification. Often only 1–2 references were made to voices as persons, such as a name, or a general manner (*minimal personification*), but sometimes multiple references to qualitatively different person-like properties were made (*complex personification*; see **Panel 3** for a full code description). Some personification was evident in all interviews, although the majority (24/40, 60%) only described minimally-personified voices

Panel 2: Multimodal voices

It's a couple of voices, like throughout the years it's always been a couple of voices... but then I started seeing the person as well, and then I could... like physically I guess I could touch them and I could hear them because I could see them talking as well. [Will]

I see him.... It's normally like in the doorway.... Or sometimes like in the seat next to us, kind of thing. And upstairs when I'm bed as well.... Yeah, yeah, the corner of me eye, I can see him.... [Ian]

It's... pretty much every time when she talks to me outside [my head]... I can see her. Or like I could see her when she's just whispering... she doesn't have to be talking directly to me, but like I know she's there.... And like you can physically see her as she's speaking to us and her mouth's moving... I can see her standing in the room... I could feel her presence... the way she moves is just like another person standing there. [Orla]

Finally, we coded for impact of voices on daily life and relationships, and the presence of any provisional interpretations that participants offered for their voices. No single interpretation was predominant among participants, although *stress* factors (such as poor sleep, physical health and problems at work or school) were the most common trigger (15/40, 37.5%). Understanding voices as a response to *trauma* – which may be thought to bring out more person-like approaches to voices¹⁷ – was discussed by only 25% of the sample (10/40), despite trauma of various kinds being reported around voice onset for over half the sample (26/40, 65%).

Associations with personification

To explore the nature of person-like voices in the cohort, we then analysed *complex personification* for its co-occurrence with other codes. Based on prior theory^{13,31,32}, various person-like characteristics could be expected to predominately associate with personification via codes such as *multimodality*, *felt presence*, *voice knowledge* (voice possesses knowledge separate from the voice-hearer), *ability to influence* (voice changes in response to the voice-hearer, i.e. flexible agency), *conversational* (voice can be conversed with), and *companionship* (voice provides company or support). Personified voices might also be expected to have a *recognisable identity*, to *change in character* over time and to have no *simple linguistic structure*.

These predictions were only partially supported: positive associations with personification were evident for *companionship* (lgOR = 3.19) and *conversational* voices (lgOR = 2.56), but associations were generally lower for other theoretically person-like properties (see **Figure 1**). *Felt presence* in fact showed the lowest association with personification among all sensory codes (lgOR = -0.17), with *visual hallucinations* scoring highest (lgOR = 2.20)³. Across all codes (see **Supplementary Materials, Table S1**), complex personification was most associated with voices being experienced as *positive-helpful* in character (lgOR = 3.89) and *eliciting positive emotions* (lgOR = 3.50), even while also having the capacity to be very negative.

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³ In a side analysis, we identified that felt presence was associated with tactile hallucinations (lgOR = 2.41, CI = 0.21–4.60) and fear (lgOR = 1.99, CI = 0.55–3.42). A high odds ratio was also observed for voices using direct address (lgOR = 2.22) although with confidence intervals that marginally crossed 0 (CI = -0.007 – 4.45). Multimodal voices were similarly associated with tactile experiences (lgOR = 1.65, CI = 0.06–3.24) but were also associated with depression (lgOR = 2.80, CI = 0.01–5.86). and companionship (lgOR = 2.55, CI = 0.91–4.19), despite their aforementioned association with commands.

Panel 3 – Minimal and complex personification.

Minimal: The voice has few person-like qualities; is attributed to a person or described as being “like a person” but without further elaboration. Person-like characteristics tend to remain stable over time and follow a single theme (e.g. the voice is “mean” or a “nasty man”).

It's a female voice, as if she's in the room with me... I wouldn't say she's nasty, she's just really stern and to the point... it's mainly to do with me being a bad mum and like the guilt of... it just drives me nuts.... [Dawn]

Mine are just some lad that just chatters on about crap constantly.... Different voices, yeah, and then, then it dwindled down to one... it's hard to explain what somebody's voice is like but you know... middle-aged... that's about all, you know? Kinda, kinda like it's coming through you know like some sort of voice thing.... They have some sort of accent, but I can't really tell, it's probably from round here, you know. [Yan]

There's different ones. I hear me name a lot being shouted from down the street or whatever, but obviously there's no one there. Eh... so I can hear people trying to talk to us, people that I know, that I'm close to, friends, family or something. And it's just random what they say, it's never anything important or whatever. [Brad]

Complex: The voice is described as having more than one kind of person-like quality; may include elaborate descriptions of intentional states (the voice wants/thinks/feels), agency (the voice will “make something happen”), or identity (the voice “comes” from somewhere or has a specific and idiosyncratic ontological status). Complexity is not a simple function of the frequency, quantity or topic of speech, but will typically involve a voice being attributed multiple, qualitatively different person-like qualities (e.g. voice has an identity *and* multiple mental states) which may vary over time.

When I was a teenager, I used to go out when I needed to get out the house, from my parents, my family and so on, I would walk and talk to her, and she'd be the one that always held my hand, and ever since... she'll be the one that'll say, 'you will stop now, calm down, it's OK, I'll keep you safe, let's go home', and she'll be the one that I'll s... I can sort of see... it's a nice, gentle face, and she just sort of hovers there in... yeah, and next to me. And she'll be the one that kind of manages to get me home. [Eric]

I've got two main voices that I hear, one of them's a girl and one of them's a boy, ehm, weird man... and the girl's really quite nice.... Like she makes us feel really good.... She sounds quite young, like I'm going to say maybes... I don't know, like a young girl kind of thing, maybes like... ten, eleven, and she's like very child-like in like she's like, 'oh [name] you look wonderful today' and like 'life's glorious, like let's do this and let's do that'.... I know that the little girl's like proper bubbly, like she loves life like you know what I mean? She loves everything.... I dunno, she's just like a typical kid you know what I mean, like where they see optimism in everything and like... yeah. [Kath]

Well, it's like every single day I hear three different voices, there's a female voice, she's called Bex, she actually introduced herself to me, and then there's an angry male voice, who's like there all the time, I don't know his name, but he's there like constantly unless I'm asleep, he like, he's like... a boy in a way but like he just, he's a bully to everyone. And then the third one is very quiet and... just he doesn't, like I don't hear him like every day, it might be like once a week that I hear him.... Bex can be quiet, like she doesn't talk all the time, but he's, the angry male voice is like constant... with the very quiet male voice, who I don't hear, like once a week I'll hear him, he's a surprise, but with Bex, it's weird, I, like I can sense that she's going to talk. Bex mainly talks to me... she'll argue with the angry male voice, telling him to like shut up and that, but... at the same... she... I feel like she holds back a lot because she, she knows how like exhausting it can be, like... hearing that.... Bex will be happy and you can tell she's happy, or you know I wouldn't say she's sad but you can tell when she's not happy, but she won't be sad.... [Xander]

N.b. Voice and voice-hearer names have been changed to preserve anonymity.

Table 3. Associations of person-like characteristics with commanding voices and trauma at voice onset.

Commanding voices	Log OR	Low CI (2.5%)	High CI (97.5%)
Multimodality	2.93	0.01	5.86
Felt presence	-0.08	-1.41	1.25
Voice knowledge	-0.07	-1.40	1.26
Ability to influence	0.34	-1.19	1.87
Conversational	1.03	-0.37	2.44
Companionship	1.33	-0.36	3.02
Recognisable	1.03	-0.37	2.44
Character change	0.22	-1.57	2.02
Simple linguistic structure	-0.38	-1.72	0.96
Complex personification	0.10	-1.26	1.45
Traumatic context around onset			
Multimodality	1.16	-0.55	2.86
Felt presence	1.06	-0.29	2.41
Voice knowledge	-1.22	-2.58	0.14
Ability to influence	-0.62	-2.04	0.81
Conversational	-0.15	-1.45	1.15
Companionship	0.28	-1.13	1.69
Recognisable	0.74	-0.60	2.08
Character change	0.36	-1.43	2.14
Simple linguistic structure	0.76	-0.63	2.15
Complex personification	-0.64	-1.96	0.69

Oddly, personification also notably coincided with voice-hearers reporting experiences that were *absent of agency* (lgOR = 2.35). Further inspection of these cases identified non-agentic experiences (random banging, clicks, recording-like voices) occurring alongside other highly agentic voices, amidst a generally broader experiential landscape. For example, “Dan”, who hears over five voices, described a “computer-generated” voice that would often generate “random stuff” (i.e. *absent agency*), while also regularly experiencing other voices that were capable of being “fake”, “manipulative”, “respectable” and “trustworthy”. Supporting this, those with complex personification also tended to describe voices

across more levels of agency²⁰ (mean diff. = +0.67; $d = 0.79$) and in more modalities (mean diff. = +0.66, $d = 0.59$), when each of these were totalled.

Two codes with putative theoretical and causal links to voice personification are *commanding voices* (following the focus of certain kinds of CBT_{p11}) and *presence of trauma* when voices began. Neither commanding voices (lgOR = 0.10) nor trauma (lgOR = -0.64) were associated with complex personification itself, and they were generally unrelated to person-like qualities of voices (see **Table 3**). Commanding voices were associated with *multimodality* (lgOR = 2.93) – with the latter fully coinciding with commanding experiences (11/11) – but were no more likely to occur with categories such as *companionship* (lgOR = 1.33), *conversational voices* (lgOR = 1.03) or *felt presence* (lgOR = -0.08). Instead, when compared to all codes, commanding voices were linked most strongly to *suicidality* (lgOR = 3.35), *following commands* (lgOR = 3.22), voices being *abusive/violent* (lgOR = 2.45), and *direct forms of address* (lgOR = 2.06; see **Supplementary Materials**). Trauma around voice onset, conversely, was associated with *commanding voices* (lgOR = 1.72) and *stress-based narratives* (lgOR = 1.79), but associations with person-like qualities were generally low (e.g. *conversational*, lgOR = -0.15).

Complex personification, but not commanding voices or trauma onset, therefore appeared to be associated with conversational and companion-like voices. To identify potential confounds, we also checked the association of complex personification with gender, street drug use and diagnosis (present/absent). Complex personification was associated with gender (lgOR = -2.43) – with female participants (12/17) more likely to receive the code than males (4/23) – and with the absence of street drug use (lgOR = -1.89). No association was evident for diagnostic status (lgOR = 0.08).

Finally, we explored the relations between complex personification, age of voice onset, length of time hearing voices and PSYRATS scores (denoting “severity” of AVH and delusions). No clear differences between those with and without complexly personified voices were evident ($d = -0.12$ -0.05), suggesting that personification was unrelated to when voices started, how long they had been present, and overall symptom ratings (see **Supplementary Materials** for the full analysis).

Figure 1. Specific person-like properties associated with complex personification of voices

DISCUSSION

Are the person-like qualities of AVH present from the outset or developed over time? Consistent with a broader “new look” at the phenomenology of psychosis^{9,15,16,28}, the data presented here highlight the complexity of AVH in EIP services. Almost all participants described multiple, recurring voices associated with negative emotions; however, a variety of auditory and thought-like voices, accompanying somatic, felt presence, and multimodal experiences and positive emotions, were also reported.

Personification is a concept that has not been systematically explored in research on voice-hearing, with prior work tending to focus on voice identity specifically, or the idea of relating to voices more generally^{8,20}. By investigating not just who voices represent, but how they are experienced, we identified a significant subset of individuals for whom voices have multiple person-like qualities, including intentions, dispositions and capacities for action. While this could have co-occurred with any number of phenomenological variables, voices with complex personification stood out as affording companionship and conversation. In other words, highly personified voices are distinguished less by their intrinsic properties (such as identity, linguistic complexity, modality, or presence) than by what they can do (afford engagement in dialogue) and their role in the life of the voice-hearer (as companions): they represent a pragmatic opportunity for the voice-hearer³². They are also, curiously, reported alongside experiences distinctly *lacking* in agency. This could simply reflect a greater diversity of experiences in general for those with more complex voices, but also suggests the possibility of personification relying on contrast and comparison *across* voices, with the perception of personhood being a relative and comparative quality to assign. In this respect, AVH personification may be understood as the product or reflection of the different relational roles that voices can sometimes take up³³.

Although commanding voices and the presence of trauma were both prominent in our sample – and of clear clinical import – neither seemed to drive personification. Indeed, our findings suggest that multimodality, rather than degree of personification, may have a greater role in the experience of commanding voices. In addition, voice personification was unrelated to overall PSYRATS scores for either hallucinations or delusions, suggesting that person-like voices do not necessarily reflect a greater severity of psychosis in general, or delusional ideation in particular⁷.

A quarter of our sample had been hearing voices for many years before entering EIP for the first time. Although these participants reported higher levels of current distress (see **Supplementary Materials**), often their first experiences were not negative. By contrast, first voices were almost always distressing for participants with an adult onset. This accords with previous observations of early voice-hearing onsets in non-clinical samples, raising questions for the interaction of life-stage and appraisal on AVH development^{34–36}. Perhaps surprisingly, neither age-of-onset nor time spent hearing voices related to the degree to which voices were personified, suggesting that personification does not simply reflect some secondary elaboration or interpretation that grows over time. If some voices simply *are*, from the outset, experiences that afford interaction, this has implications for the preponderance of new therapies that encourage such relations^{2,3,5}. An important limitation to consider here, though, is the possible role of gender and drug use: male participants and drug-users were much less likely to experience strongly personified voices, which may confound our observed associations with companionship and conversational voices, and could influence therapy choices. Given that many in EIP services will be both male and using drugs, this could limit the relevance of relational therapies at early stages of psychosis, notwithstanding the evidence of extensive personification for some voice-hearers in this situation.

More general limitations of the study are the reliance on self-report and the ability of participants to distinguish and remember their first experiences, which in some cases were many years prior to contact with EIP services. Despite our attempts to explore some of the earlier stages of voice-hearing, it

should be acknowledged that onset of voices for our participants was still highly varied. The focus on EIP users self-reporting voice-hearing also requires an individual to recognise, in some minimal sense, that their experiences are not part of a shared reality: we therefore cannot comment on personification in individuals who fully believe in the veridicality of their voices and do not recognise “voice-hearing” as a description that applies to their experience. Finally, the diagnostic heterogeneity of an EIP sample and lack of ethnic diversity regionally limits strong generalisations to other clinical groups and populations. For diagnosis, this may change over time (especially considering the sizeable minority of our participants have not received a psychiatric diagnosis), but closer examination of personification in its relation to diagnostic groupings is clearly required. As such, this work can only be considered a starting point as we go about developing a more systematic understanding of voice personification.

The bracketing of presuppositions required in phenomenological investigation²⁸ – insofar as this is ever truly possible – demands an exploratory stance as we track this cohort longitudinally. Nevertheless, we can advance several tentative predictions. If the intensity and frequency of individuals’ AVH does recede over time and through contact with EIP services, we might expect to see a related reduction in phenomenological complexity (particularly where related to sensory modality). By contrast, our data suggest neither a clear reduction nor elaboration of voice personification across time. While many voices show person-like qualities, we predict that those with complex personification will occur only where an emotional role or pragmatic function for a voice – such as companionship – is also present. These data – combined with other phenomenological and longitudinal findings²⁵ – should allow us to answer the twin questions of whether there *is* always a speaker behind the voice, and for which voice-hearers that might matter most, in the longer term.

Acknowledgments

The authors thank Jahnese Hamilton, Jamie Rea, Sue Bonner and Bethan Senior for their assistance in recruitment along with staff in participating EIP teams. The Hearing the Voice team – including Sam Wilkinson, Chris Cook, Marco Bernini, John Foxwell in particular – are thanked for their contributions to the development of the interview. Finally, EL and EW are thanked for their consultation on study design and interpretation, and AT for introducing us to the Captain, and his presence.

Funding statement

This research was supported by a Wellcome Trust Collaborative Award (WT108720) awarded to BAD, AW & CF.

Author contributions

The study was originally conceived by authors BAD, AW, CF with PM, GD & FD also contributing to study design. Data collection was conducted by BAD, PM, SC, GD & FD, with analysis conducted by BAD, PM & AW. All authors contributed to data interpretation and writing of the manuscript.

Conflict of interest statements

The authors have no conflicts of interest to report.

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