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Mapping Schema Modes in Voice Hearers: Investigating the Role of Schema Modes in Voice Hearers' Experience

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ABSTRACT

Auditory verbal hallucinations, or hearing voices, occur across various mental health conditions and can vary widely in distress and content. Understanding the factors that influence these experiences is essential for effective therapy. Schema therapy, particularly its concept of schema modes, offers a framework to explore how emotional states and coping strategies shape the nature and distress of voice hearing. Despite this, there is limited research on the relationship between schema modes and voice-hearing experiences. This study aimed to address this gap by developing a schema mode profile for transdiagnostic voice hearers, and investigating whether schema modes predict voice-related distress and positive or negative voice-related content. The study included 76 voice hearers who completed assessments of their voices and schema modes. The schema mode scores in voice hearers were generally elevated compared to nonclinical and Axis I populations (e.g., those with anxiety or depressive disorders) and closely mirrored those of Axis II populations (e.g., personality disorders). The greatest elevations compared to Axis I patients were observed in the Vulnerable Child, Impulsive Child, Detached Protector, Bully and Attack and Punitive Parent modes. Regression analyses showed that Vulnerable Child mode significantly predicted greater voice-related distress. For negative voice content, both the Vulnerable Child and Detached Self-Soother modes were associated with an increased negativity. For positive voice content, the Happy Child and Enraged Child modes were positive predictors, while the Detached Self-Soother was negatively associated with positive voice experiences. These findings suggest schema modes may play a role in voice-hearing experiences, offering promising avenues for schema therapy interventions and future research.

1 | Introduction

Hearing voices, or auditory verbal hallucinations, refers to the perception of sounds or voices in the absence of external auditory stimuli (Baumeister et al. 2017; Ohayon 2000). Previous research has indicated that voice hearing is not limited to any single psychiatric diagnosis but is a phenomenon observed across a wide range of mental health disorders (McCarthy-Jones

et al. 2017; Toh et al. 2016) and may be experienced by approximately 13% of the general population at some point in their lives (Maijer et al. 2018). The content of these voices plays a crucial role in determining the level of distress experienced (Larøi et al. 2019). The dominant voice, the most prominent or influential voice experienced, typically exerts the greatest power over the individual and drives distress (when negative) or well-being (when positive); see Salt et al. (2024) for

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Summary

- Schema therapy may provide a framework to help better understand and guide more targeted interventions for voice content and distress.
- Certain schema modes were elevated in voice hearers compared to nonclinical groups, with some elevations exceeding Axis I populations and closely resembling the patterns in Axis II populations. Some schema modes were associated with positive and negative voice content and predicting voice-related distress.
- Schema therapy interventions focusing on specific modes, particularly those associated with voice content and distress, may offer promising avenues for treating voice hearers and reducing associated distress.

its assessment and clinical relevance. More positive dominant voice content, which may include supportive or encouraging messages, is generally associated with lower levels of distress and can sometimes provide a sense of comfort or companionship (Salt et al. 2024). In contrast, negative voice content, characterised by critical, threatening or derogatory messages, is strongly linked to higher levels of distress, exacerbating feelings of fear, worthlessness and anxiety (Salt et al. 2024). By comprehensively assessing both the distress caused by these voices and the nature of dominant voices' content, clinicians can develop more effective strategies to improve the therapeutic outcomes for individuals who hear voices.

Schema therapy was developed and has been evidenced as being particularly effective for treating chronic psychological disorders and personality disorders (Taylor et al. 2017). It is an integrative therapeutic approach that combines elements of cognitive behavioural therapy, attachment theory and emotion-focused therapies (Young et al. 2003). Central to schema therapy are the concepts of early maladaptive schemas and schema modes. Early maladaptive schemas develop in response to unmet core emotional needs and early adverse experiences, and schema modes represent the momentary emotional states or behavioural responses that arise when schemas are activated. Schema modes represent the dynamic interaction between an activated schema, intense emotions and coping strategies (e.g., overcompensation, avoidance or surrender), resulting in distinct patterns such as a vulnerable childlike state, or a detached, self-protective response (Young et al. 2006). Previous preliminary research from Whitehead (2018) identified specific schema modes, including the Punitive Parent, Vulnerable Child and Detached Protector, as being particularly relevant in the context of psychosis. While Whitehead's (2018) exploratory work offered initial observations, its limited sample size of seven participants, with only four showing elevations in these identified modes, constrained the generalisability of its findings.

A recent qualitative study by Baelemans et al. (2025) explored the subjective experience of the Punitive Parent mode in individuals with Borderline Personality Disorder (BPD) following schema therapy. Notably, approximately half of the

participants in this study reported auditory verbal hallucinations as manifestations of the Punitive Parent mode prior to therapy. The study found that schema therapy techniques were effective at reducing the impact of the Punitive Parent mode, leading to a reduction in this mode's associated symptoms, including auditory verbal hallucinations. Similarly, Bach and Lobbestael (2019) found that elevations in the Angry Child mode significantly predicted paranoia and dissociative symptoms in BPD. These findings suggest that specific schema modes, such as the Punitive Parent and Angry Child, may contribute to voice-hearing experiences in BPD in ways that may parallel the mechanisms underlying voice hearing in other populations.

Recent research by Strachan et al. (2024), Paulik et al. (2019) and Ison et al. (2014) supports the use of imagery rescripting, a technique utilised in schema therapy, as an effective therapeutic intervention for individuals who hear voices, with participants reporting a reduction in the intensity and distress of their voices, as well as an improved ability to manage them. These preliminary findings indicate the potential benefits of integrating schema mode work into treatment for voice hearers. However, there remains a paucity of comprehensive studies that systematically investigate this relationship.

Research suggests that schema modes mutually influence or trigger one another and addressing specific schema modes may yield broader therapeutic benefits by disrupting maladaptive patterns (Bamelis et al. 2011). For instance, activation of a Vulnerable Child mode may trigger a Self-Soother mode as an attempt at emotional regulation (Bamelis et al. 2011). Recent findings from Bartulovich et al. (2025), exploring the relationship between voice-hearing experiences and schema modes, indicate that the content of distressing voices often maps onto specific schema modes, such as the Punitive Parent and Vulnerable Child modes. Understanding this schema mode triggering phenomenon is crucial, as it provides deeper insights into the internal psychological dynamics of voice hearers. For instance, a voice hearer who perceives their voice as resembling a Punitive Parent may experience corresponding schema modes being triggered. Voices that resemble the Vulnerable Child mode may elicit feelings of helplessness, shame and anxiety associated with the Vulnerable Child mode in the voice hearer. Evidence suggests that schema-focused therapies, which specifically target these modes, can lead to significant improvements in emotional regulation and symptom reduction (Bamelis et al. 2014). By focusing on the interplay between voice content and schema mode activation, clinicians can develop more precise and effective treatment strategies tailored to the unique experiences of voice hearers. For instance, if a voice hearer predominantly exhibits the Vulnerable Child mode, therapy can focus on building emotional resilience and addressing feelings of helplessness and fear. Conversely, if the Punitive Parent mode is dominant, interventions can aim to challenge and modify self-critical and punitive thoughts.

This study aimed to develop a schema mode profile for transdiagnostic voice hearers and to determine whether schema modes predict voice-related distress and dominant voice-related content.

2 | Method

2.1 | Ethics Approval and Lived Experience Input

Ethics approval for this research was obtained from the Murdoch University Human Research Ethics Committee (project number: 2024/045).

During the initial stages of the project, voice hearers were engaged through the Perth Voices Clinic Research Advisory Committee and one-on-one consultations. Participants' feedback on the study's aims, procedures, and potential impact was reviewed and integrated into the project design.

2.2 | Recruitment

Participants were recruited through the Perth Voices Clinic research registry, the clinic's Facebook page and the Australia Hearing Voices Networks social media. Eligible registry members were first contacted by phone and then emailed study details. Inclusion criteria required participants to be over 18 and to have experienced voice hearing within the past month. Questionnaires were completed online via Qualtrics (or paper for three participants) in this fixed order: study information and informed consent, demographics information, Schema Mode Inventory (SMI V1.1; Young et al. 2008), Hamilton Program for Schizophrenia Voices Questionnaire (HPSVQ, Van Lieshout et al. 2007) and Perth Voice Content Questionnaire (PVCQ; Salt et al. 2024). The questionnaires took approximately 30–40min to complete on average, and participants were offered a \$10 Tango rewards card as remuneration for their time. This information was collected separately from the main questionnaire in accordance with ethics approval and was processed continuously throughout data collection (June–September 2024). Explanations and debriefing options were provided in email communications, on initial Qualtrics pages, throughout the survey and at the end, with contact details for the research team members.

2.3 | Materials

2.3.1 | Schema Mode Inventory (SMI V1.1; Young et al. 2008, February 2009 revision)

The SMI (Young et al. 2008, February 2009 revision) is a 124-item self-report measure that evaluates 14 schema modes on a 6-point Likert scale ranging from 1 (*Never or almost never*) to 6 (*All the time*). Research has shown that the SMI has good internal consistency and is a reliable and valid measure of schema modes (Lobbestael et al. 2010). An additional nine items were added from the SMI-2 (Bamelis et al. 2011). These items were designed to assess the Suspicious Over-Controller Mode, which was designed to assess high levels of suspicion and vigilance regarding the intentions of others from a fear of being manipulated, controlled or harmed. These cognitive, behavioural and emotional patterns are commonly observed in voice hearers (Baumeister et al. 2017; Daalman et al. 2013; Davenport et al. 2020). Therefore, 133 items were used to assess schema modes, see Table 1. To obtain a total score for each schema mode, all items within that mode were averaged, and the scores ranged from 1 to 6.

2.3.2 | Hamilton Program for Schizophrenia Voices Questionnaire (HPSVQ, Van Lieshout et al. 2007)

The HPSVQ is a 13-item self-report instrument designed to measure the severity and distress associated with hearing voices (Van Lieshout et al. 2007). Items are scored on a 5-point Likert scale ranging from 0 (*Least severe or impairing*) to 4 (*Most severe*). The HPSVQ has demonstrated strong reliability and validity in assessing the impairment and distress related to hearing voices (Berry et al. 2021; Kim et al. 2010; Ratcliff et al. 2011). For the purposes of this study, the four items assessing the emotional characteristics of voices were utilised, which previous research has labelled as 'voice-related distress' (see Berry et al. (2021) for a review). The total score for this subscale ranges from 0 to 16 and will hereafter be referred to as 'voice-related distress'.

2.3.3 | Perth Voice Content Questionnaire (PVCQ; Salt et al. 2024)

The PVCQ (Salt et al. 2024) is a 20-item self-report measure that evaluates positive and negative voice content. Participants rate each item on a 5-point Likert scale ranging from 0 (*Not at all*) to 4 (*Extremely*). Total scores are calculated separately for positive and negative voice content by summing the relevant 10 items, yielding a possible range of 0–40 for each subscale. Preliminary psychometric analyses of the PVCQ in the initial validation study have supported its reliability and validity as a measure of voice content characteristics (Salt et al. 2024).

2.4 | Statistical Analysis

Assumption testing indicated that 10 out of the 15 schema modes were normally distributed, based on nonsignificant Shapiro–Wilk tests ($p > 0.05$), skewness and kurtosis values within ± 1.0 , and visual inspection of histograms. For these modes, means and standard deviations (SD) are reported, see Table 2. For the remaining nonnormally distributed modes, medians and interquartile ranges are reported. Mean schema mode scores for the voice-hearing sample were compared with published norms from Lobbestael et al. (2010) for nonpatient controls, Axis I and Axis II groups. As shown in Table 2, scores were classified as: *below average* (more than 1 SD below the reference mean), *average* (within 1 SD above the mean), *moderately elevated* (1–2 SD above the mean) or *highly elevated* (more than 2 SD above the mean). Prior to the main analyses, bivariate Pearson correlations were performed to assess relationships between demographic variables and schema-voice measures. This preliminary analysis identified potential significant associations that informed subsequent regression analyses.

Key regression assumptions were also assessed, including normality of residuals, independence of errors, homoscedasticity, detection of influential observations and multicollinearity. Most assumptions were met; however, moderate multicollinearity was observed, with VIF values ranging from 5 to 10 across all models. Least Absolute Shrinkage and Selection Operator (LASSO) regression was conducted to identify the most relevant schema mode predictors simultaneously for each of the models. Model tuning was performed using fivefold cross-validation

TABLE 1 | Modes.

Mode	Descriptor
Vulnerable child	Characterised by feelings of helplessness, emotional distress and vulnerability. Individuals in this mode often feel overwhelmed, sad, lonely or scared.
Angry child	Marked by feelings of anger and frustration. Individuals in this mode may react with temper tantrums or aggressive behaviour when their needs are not met.
Enraged child	An intensified version of the Angry Child mode, where the individual experiences intense rage and may exhibit destructive behaviours.
impulsive child	Characterised by difficulty resisting impulses and urges. Individuals in this mode may act without thinking of the consequences and struggle with self-control.
Undisciplined child	Characterised by a dislike for rules and responsibilities. Individuals in this mode may avoid tasks that require sustained effort or delayed gratification.
Punitive parent	Characterised by harsh self-criticism and self-punishment. Individuals in this mode may feel worthless, guilty or deserving of punishment.
Demanding parent	Marked by unrealistic expectations and pressure to achieve perfection. Individuals in this mode may feel constant pressure to perform and meet high standards.
Coping mode: Avoidance	
Detached protector	Characterised by emotional withdrawal and detachment. Individuals in this mode may appear numb, distant or disconnected to protect themselves from emotional pain.
Detached self-soother	Engaging in distracting, stimulating or self-soothing behaviours such as substance use, overeating or excessive screen time to escape emotional distress
Coping mode: Surrender	
Compliant surrender	Marked by passive compliance and submission to others' demands. Individuals in this mode may avoid conflict by yielding to others, often at the expense of their own needs.
Coping mode: Overcompensation	
Self-aggrandiser	Characterised by an inflated sense of self-importance and entitlement. Individuals in this mode may display grandiose behaviours to compensate for feelings of inadequacy.
Bully and attack	Marked by aggressive and intimidating behaviours aimed at dominating or controlling others to protect oneself from perceived threats.
Healthy adult	Characterised by balanced, rational thinking and behaviour. Individuals in this mode can effectively manage their emotions, set boundaries and make decisions that promote their well-being.
Happy child	Represents the state of feeling content, playful and joyful. This mode reflects the fulfilment of emotional needs and a sense of security.

Note: Adapted from Lobbestael et al. (2010) and Young et al. (2003).

to determine the optimal penalty parameter and assess model generalisability. Following variable selection via LASSO, a standard linear regression was performed with only those predictors uniquely contributing to the outcome, to confirm effect estimates and significance.

3 | Results

3.1 | Participants

The study included 76 voice-hearing participants (age $M = 34.23$ years, $SD = 10.99$), ranging from 20 to 66 years old. See Table 2 for a detailed participant demographic breakdown.

3.2 | Schema Mode Profile for Voice Hearers

The mean scores and standard deviations for each of the schema modes within the sample of voice hearers are presented in Table 3. As discussed above, schema mode scores are qualitatively interpreted in relation to the normative reference groups reported by Lobbestael et al. (2010). For reference, classifications are defined as below average ($> 1SD$ below the reference mean), average (within 1 SD above), moderately elevated (1–2 SD above) and highly elevated (> 2 SD above). Comparative norms for the Suspicious Over-Controller mode are not included as normative data are not yet available (Arnoud Arntz, personal communication, 27 January 2024). To avoid redundancy, a separate column for Axis II

TABLE 2 | Participant demographic and clinical characteristics ($N = 76$).

Demographic	M (SD)
Age (years)	34.23 (10.99), range = 20–66
Gender, n (%)	
Male	36 (47.37)
Female	34 (44.74)
Nonbinary	4 (5.26)
Self-described	2 (2.63)
Employment status	
Employed full-time	26 (34.21)
Employed part-time/casual	21 (27.63)
Unemployed	19 (25)
Student	8 (10.5)
Retired	2 (2.63)
Marital status	
Single	25 (32.89)
Married/civil partnership/de facto	25 (32.89)
Separated/divorced/widowed	12 (15.79)
In a long-term relationship	14 (18.42)
Diagnosis/diagnoses across lifespan (missing $n = 4$)	
Psychotic disorder	7 (9.72)
Multiple, including psychotic disorder	21 (29.17)
Nonpsychotic disorder	13 (18.05)
No diagnosis	31 (43.05)
Current medication	
Antipsychotic medication only	8 (10.53)
Other psychotropic medication only	44 (57.89)
Combination (antipsychotic and other)	24 (31.58)

Note: N = number of participants; M = mean; SD = standard deviation.

comparisons was not included in Table 3, as all schema mode scores for the voice-hearing sample fell within the average range for Axis II patient norms.

Overall, participants demonstrated elevated scores across many schema modes apart from the positive schema modes Happy Child and Healthy Adult, which were below average in comparison to nonpatient norms. Almost all were within the highly elevated range compared to normative controls, apart from Self-Aggrandizer, Demanding Parent and Undisciplined Child mode, which were only moderately elevated. In comparison to Axis I norms, all schema modes were in the average range apart from Vulnerable Child, Impulsive Child, Detached Protector, Bully and Attack and Punitive Parent,

which were elevated. Notably, the schema mode scores for the voice-hearing sample closely mirrored those observed in Axis II patient populations, with all modes falling within the average range for Axis II norms.

3.3 | Relationship Between Voice-Related Distress and Schema Modes

To control for multicollinearity among schema modes and identify those uniquely associated with voice-related distress, a LASSO regression analysis was conducted. Model tuning was performed using fivefold cross-validation, resulting in a training R^2 of 0.36 and an average test R^2 of 0.19, indicated moderate explained variance and some reduction in generalisability to new data. One schema mode, the Vulnerable Child mode, was identified by the lasso regression as predictive of voice-related distress ($B = 1.77$, $\beta = 1.51$). All other modes had coefficients shrunk to 0, indicating no additional predictive contribution. Following this, a standard linear regression was conducted using only the Vulnerable Child mode as a predictor of voice-related distress. This model was statistically significant, $F(1,74) = 53.88$, $p < 0.001$, explaining 42.1% of the variance ($R^2 = 0.41$, adjusted $R^2 = 0.41$). Vulnerable child significantly predicted distress ($B = 2.93$, $SE = 0.4$, $p < 0.001$) such that each 1-point increase in the Vulnerable Child score was associated with a 2.93-point increase in voice-related distress.

3.4 | Relationship Between Schema Modes and Negative-Main Voice Content

To account for potential multicollinearity and to identify predictors uniquely associated with negative voice content, a LASSO regression was conducted including all schema modes and the demographic variable first language English, which was identified as statistically significant during the preliminary analysis stage (see Table 4). Model tuning was performed using fivefold cross-validation ($\alpha = 1.00$), resulting in a training R^2 of 0.44 and an average test R^2 of 0.25, indicating moderate explained variance with reasonable generalisability.

The final LASSO model identified five schema modes, Vulnerable Child ($B = 2.41$, $\beta = 2.07$), Angry Child ($B = 0.73$, $\beta = 0.66$), Compliant Surrenderer ($B = 0.64$, $\beta = 0.56$), Detached Self-Soother ($B = 1.46$, $\beta = 1.25$), Punitive Parent ($B = 0.35$, $\beta = 0.38$), along with the demographic variable ($B = -5.24$, $\beta = -1.29$). All other variables had coefficients reduced to 0, indicating no further predictive contribution to negative voice content.

A hierarchical multiple linear regression was completed using the LASSO-retained schema modes as predictors of negative-main voice content. In Step 1, the demographic variable significantly predicted negative-main voice content, accounting for 7% of the variance ($R^2 = 0.07$, $p = 0.02$). In Step 2, the five schema modes were added, which significantly improved the model fit ($\Delta R^2 = 0.43$, F -change (5,69) = 12.02, $p < 0.001$). The final model explained 50.3% of the variance in negative-main voice content ($R^2 = 0.50$, adjusted $R^2 = 0.46$).

TABLE 3 | Descriptive statistics and qualitative ranges for schema modes in voice hearers compared to nonpatient norms and Axis I patient norms.

Schema mode	Current sample	Nonpatient	Axis I
Vulnerable child	M = 3.80 (SD = 0.86)	Highly elevated	Moderately elevated
Angry child	M = 3.33 (SD = 0.90)	Highly elevated	Average
Enraged child	Mdn = 2.20 (IQR = 2.30)	Highly elevated	Average
Impulsive child	Mdn = 3.33 (IQR = 1.44)	Highly elevated	Moderately elevated
Undisciplined child	M = 3.36 (SD = 0.76)	Moderately elevated	Average
Happy child	Mdn = 3.50 (IQR = 1.18)	Below average	Average
Compliant surrender	M = 3.83 (SD = 0.88)	Highly elevated	Average
Detached protector	Mdn = 3.67 (IQR = 1.11)	Highly elevated	Moderately elevated
Detached self-soother	M = 3.55 (SD = 0.86)	Highly elevated	Average
Self-aggrandiser	M = 3.17 (SD = 0.87)	Moderately elevated	Average
Bully and attack	Mdn = 2.83 (IQR = 2.06)	Highly elevated	Moderately elevated
Punitive parent	M = 3.64 (SD = 1.10)	Highly elevated	Moderately elevated
Demanding parent	M = 3.94 (SD = 0.89)	Moderately elevated	Average
Healthy Adult	M = 3.68 (SD = 0.77)	Below average	Average
Suspicious overcontroller	M = 3.87 (SD = 0.88)	NA	

Note: N = 76; M = Mean; SD = Standard Deviation; Mdn = Median; IQR = Interquartile Range; NA = Not available (Norms for the Suspicious Over-Controller mode are currently unavailable as this scale is an international work in progress) (Arnoud Arntz, personal communication, 27 January 2024). Qualitative descriptors are defined as follows: below average = more than 1 SD below the mean of the reference group; average = within 1 SD of the mean; moderately elevated = more than 1 SD but below 2 SD above the mean; highly elevated = more than 2 SDs above the mean. Normative data for nonpatient, Axis I and Axis II patient groups are available in Lobbestael et al. (2010).

TABLE 4 | Hierarchical regression predicting negative voice content.

Predictor	B	SE B	β	t	p
Step 1					
Constant	27.92	3.75	—	7.45	<0.001
English as a first language	−8.06	3.42	−0.26	−2.35	0.02
Step 2 (final model)					
Constant	−0.63	4.81	—	−0.13	0.90
English as a first language	−9.75	2.68	−0.32	−3.64	<0.001
Vulnerable child	2.88	1.22	0.33	2.35	0.02
Angry child	1.30	0.90	0.15	1.45	0.15
Compliant surrender	1.55	0.97	0.18	1.61	0.11
Detached self-soother	2.12	0.83	0.24	2.55	0.01
Punitive parent	0.45	0.87	0.07	0.52	0.61

Note: Model 2 (final step): $R = 0.71$, $R^2 = 0.50$, adjusted $R^2 = 0.46$, $F(6,69) = 11.63$, $p < 0.001$. Significant predictors ($p < 0.05$) are in bold.

Two schema modes emerged as statistically significant predictors, Vulnerable Child and Detached Self-Soother. Vulnerable Child ($B = 2.88$, $p = 0.022$) was positively associated with negative voice content; for every 1-point increase in the Vulnerable Child mode score, there was an expected increase of 2.88 points in negative voice content. Detached Self-Soother was also a significant predictor of negative voice content ($B = 2.12$, $p = 0.013$), indicating that individuals who frequently engage in Detached Self-Soother behaviours, such as excessive daydreaming, substance use or other forms of avoidance and self-soothing, tend to experience more negative content in their dominant voice. The remaining schema modes (Angry Child, Compliant Surrender and Punitive Parent) were not significant predictors of negative voice content.

3.5 | Relationship Between Schema Modes and Positive Main Voice Content

To account for potential multicollinearity and to identify those uniquely associated with positive voice content, a LASSO regression was conducted including all 15 modes simultaneously as candidate predictors. Model tuning with fivefold cross-validation ($\alpha = 1.00$) resulted in a training R^2 of 0.48 and an average test R^2 of 0.35, indicating moderate explained variance with acceptable generalisability. The final model retained five schema modes—Vulnerable Child, Emotional Child, Happy Child, Detached Self-Soother and Demanding Parent, with

TABLE 5 | Regression predicting positive voice content.

Predictor	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>
Constant	16.31	8.76	—	1.86	0.07
Vulnerable child	−0.97	1.52	−0.08	−0.64	0.53
Enraged child	1.77	0.81	0.25	2.18	0.03
Happy child	4.82	1.32	0.43	3.64	<0.001
Detached self-soother	−3.14	1.05	−0.26	−2.99	0.004
Demanding parent	−2.31	1.18	−0.20	−1.96	0.05

Note: $R=0.72$, $R^2=0.51$, adjusted $R^2=0.48$, $F(5,70)=14.70$, $p<0.001$. Significant predictors ($p<0.05$) are in bold.

all other modes shrunk to 0, indicating no additional unique contribution.

A follow-up standard linear regression was then conducted including only these retained predictors. The model was statistically significant, $F(5, 70)=14.70$, $p<0.001$, accounting for 51.2% of the variance in positive voice content (adjusted $R^2=0.477$). Within this model, three schema modes were significant predictors, bolded in Table 5. Happy Child was a strong positive predictor ($B=4.82$, $\beta=0.43$, $p<0.001$), indicating that higher engagement with the Happy Child mode was associated with increased positive voice content. The Enraged Child mode was also positively associated with increased positive main voice content ($B=1.77$, $\beta=0.25$, $p=0.03$), suggesting that when voice hearers experienced intense and disproportionate feelings of rage and anger; they also experienced an increase in the positive content of their main voice. In contrast, Detached Self-Soother was a significant negative predictor ($B=-3.14$, $\beta=-0.26$, $p=0.004$), suggesting that increased reliance on avoidance or self-soothing behaviours was associated with lower levels of positive content from their main voice. Vulnerable Child and Demanding Parent were not statistically significant (both $p>0.05$) (see 5).

4 | Discussion

This exploratory study aimed to determine whether transdiagnostic voice hearers could be conceptualised using a schema mode framework and to elucidate the relationships between these schema modes and voice-related distress and dominant voice content. We found certain schema modes to be more elevated for voice hearers in comparison to a nonclinical sample, and some were less elevated. In comparison to other patient samples, voice hearers had similar elevations on the SMI to patients meeting criteria for a personality disorder diagnosis. We also found that a specific schema mode, the Vulnerable Child, was a significant predictor of voice-related distress. Finally, we found that specific schema modes were associated with more positive and negative dominant voice content. By identifying specific schema modes that predict negative voice content and

distress, this study aimed to gain a more nuanced understanding of the psychological mechanisms underlying voice hearing, thereby offering a potential pathway for targeted therapeutic interventions.

In comparison to nonclinical samples, most schema modes were more elevated in voice hearers, suggesting a pervasive, heightened presence of maladaptive emotional and behavioural patterns in voice hearers. Scores on the Happy Child and Healthy Adult modes were notably lower than those observed in nonclinical samples, suggesting that voice hearers have reduced access to the positive emotional experiences and adaptive coping strategies theorised to be linked to these two modes. Overall, these findings are unsurprising given the high rates of complex trauma histories typically reported by voice hearers. In comparison to Axis I populations, the most prominent elevated modes were Vulnerable Child, Impulsive Child, Detached Protector, Bully and Attack and Punitive Parent. Interestingly, when compared to Axis II populations, the schema mode profiles of voice hearers were very similar, reflecting a shared pattern of entrenched maladaptive schema modes. This similarity suggests that voice hearers may experience enduring and pervasive difficulties in thinking, emotional regulation and interpersonal functioning, paralleling those present in personality disorders.

The second aim of this study was to examine whether schema modes predicted distinct dimensions of voice-hearing outcomes, namely, voice-related distress, negative voice content and positive voice content.

The Vulnerable Child mode, marked by feelings of helplessness, emotional pain and vulnerability, emerged as a significant predictor of voice-related distress. Conceptually, this mode reflects an individual's deep-seated emotional wounds, often stemming from early adverse experiences such as neglect, abuse or emotional deprivation (Young et al. 2003). Research has shown that individuals who hear distressing voices often have a history of trauma and emotional neglect, which can activate the Vulnerable Child mode (McCarthy-Jones and Longden 2015; Varese et al. 2012). These early experiences create a foundation of emotional vulnerability, making individuals more susceptible to distress when confronted with negative or critical voices. It is therefore unsurprising that activation of the Vulnerable Child mode, representing a state of emotional fragility, significantly heightened the degree of distress provoked by voices in our transdiagnostic sample. Clinically, these findings highlight the centrality of targeting the Vulnerable Child mode, for example, through schema therapy, techniques that validate unmet needs, increase emotional safety and foster self-soothing skills to reduce distress in response to voices.

The analysis also highlighted significant predictors of dominant voice content, revealing a nuanced interplay between schema modes and the valence of voice content. First, consistent with the findings for distress, the Vulnerable Child mode was positively associated with hearing more negative content in their dominant voice. This suggests that a pervasive state of emotional vulnerability not only intensifies distress but also increases the likelihood of the voices being experienced as critical, threatening

or emotionally painful. Within the schema therapy framework, the dominant voice characterised by negative or critical content may function in a manner similar to the Punitive Parent mode (Bartulovich et al. 2025). Consequently, this critical voice could further elicit vulnerability and distress, potentially reinforcing or intensifying the activation of the Vulnerable Child mode. Interestingly, unlike Baelemans et al. (2025), who found the Punitive Parent mode predictive of critical in BPD voice hearers, it was nonsignificant here despite our sample's Axis II-like schema mode profile. This may reflect our transdiagnostic sample, study design (self-report vs. interview-based measurement, as in Baelemans et al. 2025), or reflect less Punitive Parent activation than in BPD clinical contexts.

Second, the Detached Self-Soother mode also significantly predicted more negative voice content. This mode involves strategies where individuals engage in activities like substance misuse, gambling or binge-watching TV to help detach from emotional pain and distress. This may occur because distraction and avoidance do not resolve underlying emotional issues, allowing distress to build up and manifest as critical voices (Sood et al. 2022). This interpretation, and those offered below with other modes, would be strengthened by mediational analyses with pathways from voice distress to voice content; however, the sample size of the current study did not permit this.

The predictors of positive voice content revealed a different pattern. The Happy Child mode emerged as the strongest positive predictor. This mode reflects experiences of playfulness, joy, spontaneity and feelings of safety and predicted an increased likelihood of hearing voices with supportive, affirming or constructive content. These findings suggest that when individuals can access emotional states linked to safety and play, their voices may reflect more positive internal dialogues, consistent with schema therapy's emphasis on strengthening and nurturing healthier modes (Yakin and Arntz 2023).

The Enraged Child mode was also a positive predictor of positive voice content. At first glance, this may seem counterintuitive since the mode is characterised by intense anger and frustration in response to unmet needs (Arntz and Jacob 2012). One explanation is that expressing strong emotions like anger may provide emotional release, reducing distress and allowing for more positive voice experiences to emerge, which serve to regulate high emotional arousal (Bernstein et al. 2012). The content of positive main voice content from the PVCQ aligns with the characteristics of the Healthy Adult mode, which is compassionate, nurturing and functional in dealing with reality (Yakin and Arntz 2023). In schema therapy, the Healthy Adult mode is encouraged to soothe and regulate the Enraged Child mode, supporting emotional balance and positive self-talk (Arntz and Jacob 2012). In contrast, the Detached Self-Soother mode was a significant negative predictor of positive voice content, reinforcing the interpretation that avoidant coping strategies not only increase negative voice content but also diminish the likelihood of experiencing voices as positive or affirming. Therapeutic interventions that primarily target the Detached Self-Soother mode often aim to help the individual understand both the protective function and the long-term costs of emotional withdrawal. The findings of this study are consistent with these therapeutic goals and highlight the complex role of the Detached Self-Soother,

offering short-term relief but ultimately contributing to greater emotional isolation and distress.

4.1 | Clinical Implications

These findings contribute to the growing body of research (Baelemans et al. 2025; Bartulovich et al. 2025) suggesting that the schema therapy framework offers valuable insights into how early adverse experiences shape the present-day experiences of voice hearers. Targeting the Vulnerable Child mode is central in schema therapy, with imagery rescripting being a prominent technique used to achieve this. Imagery Rescripting as a stand-alone treatment of PTSD symptoms and voice distress was found to be effective in trauma-affected voice hearers (Ison et al. 2014; Paulik et al. 2019; Paulik 2025; Strachan et al. 2024). Future research should aim to explore the efficacy of these approaches in fostering lasting emotional healing and improving overall mental well-being for individuals who hear voices.

Furthermore, this research underscores the importance of understanding and adapting to the specific coping mechanisms employed by voice hearers. Therapeutic approaches may benefit from incorporating techniques that help voice hearers reduce their reliance on detachment-based coping mechanisms while cultivating more adaptive self-protective strategies.

One key area for future research and clinical practice in schema therapy for voice hearers is the potential role of healthy emotional expression. Interventions that support both playful engagement and the safe expression of difficult emotions may therefore enhance positive internal dialogue, reduce reliance on avoidant self-soothing strategies and ultimately promote more balanced and supportive voice-hearing experiences.

Finally, the complex interplay between specific schema modes and the content of auditory verbal hallucinations presents a rich area for future research. By understanding how different schema modes influence the emotional tone and content of voices, therapeutic interventions can become more targeted and effective. This nuanced approach could lead to significant advancements in the treatment of voice hearers, promoting greater understanding, self-compassion and ultimately improved mental health outcomes.

4.2 | Limitations and Future Research

Although this study provides valuable insights into the schema modes prevalent among individuals who hear voices and their relationships with voice-related distress and content, several limitations must be acknowledged. First, the sample size, although adequate for an exploratory study, may limit the generalisability of the findings and prevent the inclusion of post hoc mediation analyses to explore possible causal pathways. Future research should aim to replicate and extend these results with larger samples to validate the findings and enhance their generalisability.

The study's cross-sectional design also restricts the ability to infer causality between schema modes and voice-related distress or content. In conclusion, while this study offers important

insights into the schema modes associated with voice hearing, addressing these limitations in future research will be crucial for advancing our understanding and improving interventions for individuals who hear voices.

5 | Conclusion

This exploratory study found a pattern of schema mode activation common in other clinical populations. Furthermore, we also found specific schema modes, which significantly predicted voice-related distress and dominant voice content. Given the dearth of research in this area and the relatively common and often distressing nature of voice hearing, this research offers a promising avenue for improving therapeutic interventions and the quality of life for voice hearers.

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Ethics Statement

Approval was obtained from the Murdoch University Human Research Ethics Committee (project number: 2024/045).

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

Research data will be available from the corresponding author for 7 years.

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