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An exploratory investigation of schema modes in social anxiety disorder: Empirical findings and case conceptualization

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Abstract

Background: Current "gold standard" treatments for social anxiety disorder (SAD) are limited by the limited emphasis of key etiological factors in conceptualization, and many individuals with SAD experience residual symptoms post-treatment. Hence, the novel application of the Schema Therapy Mode Model may provide a helpful framework for extending clinical understanding and treatment options for SAD. This exploratory study aimed to investigate the presence and pattern of schema modes among SAD individuals.

Method: Forty individuals with SAD completed questionnaire measures of symptomatology, social anxiety-relevant cognitions, schema modes, childhood trauma, and parental style.

Results: Key maladaptive schema modes identified in SAD were Vulnerable Child, Punitive Critic, Demanding Critic, Compliant Surrender, and Detached Self-Soother.

Conclusion: Outcomes provide the basis for a proposed schema mode case conceptualization for SAD and are hoped to provide a rationale for testing the applicability of Schema Therapy as a novel treatment for SAD. Key limitations are discussed.

KEYWORDS
case conceptualization, schema modes, schema therapy, social anxiety

1 | INTRODUCTION

Social anxiety disorder (SAD) is characterized by an excessive and persistent fear of negative evaluation by others in a social or performance situation (DSM-5; American Psychiatric Association, 2013). SAD is a common psychiatric disorder (8.4% lifetime prevalence in Australia; Crome et al., 2015), with a chronic course, and typically low incidence of spontaneous remission (Beesdo-Baum et al., 2012; Bruce et al., 2005). Cognitive-Behavioral Therapy (CBT) is currently the gold standard treatment for SAD (Mayo-Wilson et al., 2014); however, not all patients respond or maintain gains following CBT, and most continue to experience residual symptoms (Heimberg, 2002; Mörtberg et al., 2011; Rodebaugh et al., 2004). For example, in a large multisite trial of CBT versus psychodynamic therapy versus WL for SAD (n[CBT] = 209), found a 60% response rate and only 36% of the sample were in remission following treatment (Leichsenring et al., 2013). A number of factors have been implicated in predicting treatment response to CBT for SAD, notably the significant comorbidity associated with the disorder, including depressive disorders, other anxiety disorders, substance use disorders, and personality disorders (Crome et al., 2015; Heimberg, 2002; Rodebaugh et al., 2004).

Given these limitations of CBT for SAD, empirical investigation to enhance understanding of the disorder and its treatment are of clinical importance. Developmental models and research (e.g., Norton & Abbott, 2017a,b; Spence & Rapee, 2016; Wong & Rapee, 2015) suggest that greater focus on the etiology and origins of SAD may be a useful avenue for enhancing treatment efficacy. An initial investigation by Hackmann et al. (2000) suggested that adverse social experiences that clustered around the onset of the disorder are connected to recurrent negative self-imagery. Since this study, CBT models have increasingly recognized the value of incorporating etiological factors and targeting them to a limited degree (see Clark, 2001; Heimberg et al., 2010 for updated CBT models of SAD). Indeed, there is a growing body of evidence supporting a number of etiological factors implicated in the development of SAD, including peer relationships and school context, parenting factors, trauma, abuse, and adverse life events (see Norton & Abbott, 2017a; Spence & Rapee, 2016 for reviews). Specifically, research to date suggests that the risk of developing SAD is increased by parental overcontrol and overprotection, a cold/critical parenting style, insecure attachment relationships, aversive experiences, and childhood emotional maltreatment (Norton & Abbott, 2017b; Spence & Rapee, 2016). Indeed, social anxiety has been linked to an anxious-preoccupied attachment style in adulthood, suggesting that suboptimal attachment experiences with early caregivers may lead to negative internal working models of self, thereby increasing expectations of social rejection and associated avoidant behaviors (Manning et al., 2017; Vertue, 2003). Further, Calvete (2014) demonstrated that peer emotional abuse predicted worsening of maladaptive schemas (specifically, the other-directedness domain), which in turn predicted social anxiety symptoms. These findings are consistent with a number of studies demonstrating the benefits of imagery rescripting for SAD, indicating that restructuring previously maladaptive meanings associated with aversive early peer experiences reduces symptoms of social anxiety (e.g., Knutsson et al., 2020; Lee & Kwon, 2013; Norton & Abbott, 2016; Wild et al., 2008). Imagery rescripting is increasingly being integrated into CBT treatment approaches, and has demonstrated promise as an adjunct to standard CBT for SAD (Norton et al., 2021).

In light of these findings, Schema Therapy (ST; Young, 1999; Young et al., 2003) may present a promising alternative for SAD patients, especially those who do not respond to cognitive-behavioral treatment as it was originally developed for complex patients who did not respond to traditional interventions (Arntz & Jacob, 2013). ST may be of particular relevance for SAD because of its emphasis on the etiology of symptoms and detailed

exploration of defense mechanisms, as well as its inclusion of imagery rescripting, which can target social, developmental, and attachment traumas common to SAD. As an integrative approach, ST for SAD would incorporate best practice CBT techniques as appropriate, while placing emphasis on relational and experiential techniques (e.g., imagery rescripting, chair dialog) as outlined in best practice guidelines to ST (Arntz & Jacob, 2013; also see Penney & Norton, 2021 for a case study integrating cognitive restructuring and behavioral experiments within ST). Additionally, ST demonstrates promise as a treatment for Avoidant Personality Disorder (AvPD; Arntz & Jacob, 2013; Bamelis et al., 2011) and given the hypothesized link between AvPD and SAD existing on the same continuum at different levels of severity (Lampe & Malhi, 2018), it may have similar benefits for SAD individuals who do not respond to CBT.

Young (1999) proposed that pervasive and negative cognitive, affective, and behavioral life patterns (termed 'Early Maladaptive Schemas' [EMS]) stem from unmet childhood needs. Eighteen EMSs were initially hypothesized and mapped onto five broad domains of childhood unmet needs: Disconnection and Rejection; Impaired Autonomy and Performance; Impaired Limits; Other-Directedness; and Over-Vigilance. A number of studies have explored the relationship between social anxiety and EMSs on the Young Schema Inventory (Young et al., 2007), finding social anxiety to be most strongly associated with the Disconnection and Rejection domain (e.g., Social Isolation, Defectiveness/Shame) (Calvete et al., 2013; Calvete et al., 2018; Calvete, 2014; Mairet et al., 2014; Pinto-Gouveia et al., 2006), which stems from experiences of instability, humiliation, emotional deprivation, defectiveness, and social isolation. This is consistent with findings that early relational trauma is a key risk factor for SAD (e.g., Norton & Abbott, 2017a).

Whilst some research has investigated predominant EMSs in SAD (e.g., Pinto-Gouveia et al., 2006), the authors are not aware of empirical studies to date exploring key schema modes in the disorder. Schema modes are current emotional states activated by underlying trait schemas, and are of particular significance as they are often more amenable to treatment than underlying EMSs (Arntz & Jacob, 2013; Young et al., 2003). Schema modes bring a valuable nuance to case conceptualization, and are likely an efficient and useful way of conceptualizing individuals with SAD given the current understanding of etiological factors and EMSs associated with the disorder (Mairet et al., 2014; Spence & Rapee, 2016). For example, as described in a case study by Penney and Norton (2021), the experience of ostracism from a close friend may be interpreted as meaning one "does not belong," and is "unlikable," or "less interesting" than others. This may lead to the development of a social isolation schema, and manifest in modes such as a Vulnerable Child (characterized by fears of negative evaluation and low self-worth) and a Punitive Critic (characterized by shame-inducing negative self-beliefs around unlikability and lack of belonging).

Schema modes fall within four categories (Arntz & Jacob, 2013). First, Dysfunctional Child Modes are defined by the experience of intense negative emotions (e.g., fear, distress, and anger) in response to the experience of unmet needs (e.g., Disconnection and Rejection). For example, where needs for autonomy are not supported by caregivers, a Vulnerable Child mode may develop, characterized by anxiety and a lack of self-efficacy. Second, Dysfunctional Parent or Critic Modes involve internalized self- and other-criticism. Whilst these modes often develop from internalizing parental responses, they can also originate from other adverse and critical experiences beyond parents (Arntz & Jacob, 2013; Young et al., 2003), and therefore are more commonly referred to as 'Critic Modes' (Farrell & Shaw, 2018). This is consistent with the idea that Critic Modes may be connected with multiple key others (e.g., peers, siblings, teachers, and parents); and are likely to have a strong foundation in aversive peer experiences among SAD individuals. For example, repeated experiences of criticism and rejection by peers may be internalized as a shame-inducing Punitive Critic mode that then self-berates the individual with learned messages that they are defective and unlikable.

Third, Dysfunctional Coping Modes are prominent when individuals are attempting to neutralize the negativity of the Critic Modes or avoid the emotional distress of the Child Modes and take the form of avoidance, overcompensation, or surrender (Arntz & Jacob, 2013; Young et al., 2003). Avoidance-based coping modes may encourage an individual to physically avoid perceived threats (i.e., Avoidant Protector), experientially avoid uncomfortable feelings (i.e., Detached Protector), or even self-sooth with experientially avoidant experiences such

as intoxication or comfort eating (i.e., Detached Self-Soother). Overcompensation-based coping modes encourage an individual to act in a way that is opposite to their EMSs by, for instance, pursuing perfectionism when they fear failure (i.e., Over-controller) or intimidating others when they feel scared (i.e., Bully and Attack mode). To cope via the mode of surrender involves resigning to the perceived truth of one's underlying EMS and to give up the effortful struggle against it (i.e., Compliant Surrender).

For an example of the mode structure in a socially anxious individual, Penney and Norton (2021) observed a number of coping modes to manage the distress elicited by the individual's Vulnerable Child and Punitive Critic modes. These included a strong Avoidant Protector Mode (characterized by avoidance of interpersonal situations), Detached Self-Soother (characterized by alcohol consumption and passive fantasies about death), and Compliant Surrender (characterized by resignation to the perceived "truth" that she was defective and would never belong).

Finally, Healthy Modes include a resourceful, wise, and well-regulated Healthy Adult mode and a spontaneous, joyful, and securely attached Happy Child mode (Arntz & Jacob, 2013; Young et al., 2007). As schema modes are considered to be state-based emotional and coping responses, they are likely to provide further insight into factors that maintain social anxiety symptoms in the present (e.g., Avoidance-based coping modes), including the pattern of relationships between these states.

Schema modes have primarily been explored among personality disorders (e.g., Arntz et al., 2005; Bamelis et al., 2011; Lobbestael et al., 2008), however, there is emerging literature to suggest that the mode model may be a useful way of conceptualizing other chronic clinical presentations (e.g., treatment-resistant anxiety disorders, see Peeters et al., 2021; depression, see Basile et al., 2018; and eating disorders, see Talbot et al., 2015). In 2021, Penney and Norton, outlined an individual conceptualization and successful treatment of a SAD case study with the ST Mode Model. This emerging empirical support for the application of schema mode conceptualizations and interventions to complex and chronic disorders (such as SAD) is anticipated to provide valuable new treatment avenues.

Given the overlap between SAD and AvPD (Lampe & Malhi, 2018), there is likely to be some similarity in the underlying EMS and schema mode case conceptualization for the two disorders. Carr and Francis (2010) demonstrated that subjugation and emotional inhibition EMSs mediate the relationship between maternal overprotection and AvPD, and that abandonment and subjugation EMSs mediate the relationship between family sociability and AvPD, suggesting that parental overcontrol and a lack of early nurturing relationships can lead to fears of abandonment and a need to inhibit emotional expression and needs. Bamelis et al. (2011) reported that key schema *modes* in AvPD include Abandoned/Abused Child mode, Punitive Critic mode, Avoidant Coping modes (i.e., Avoidant Protector and Detached Protector), and Compliant Surrender modes. Given that EMSs can be considered akin to traits that influence the development of state-like modes, early negative family experiences, abandonment, or parental overcontrol may be consistent with the development of an Abandoned/Abused child mode and the internalization of a Punitive Critic mode. Similarly, the development of Avoidant and Compliant Surrender coping modes may be consistent with findings that AvPD individuals believe they need to inhibit their expressions and subjugate their needs to others (Bamelis et al., 2011; Carr & Francis, 2010). While these AvPD conceptualizations may provide some insight into key schema modes in SAD given the similarity of the disorders, the schema mode model has yet to be thoroughly empirically investigated in SAD.

Hence, the current study is an exploratory investigation of schema modes in SAD. The study aimed to identify key schemas in SAD and their relationship with social anxiety symptoms, cognitions, and early life experiences. In doing so, the study hoped to identify modes that would inform a proposed schema mode case conceptualization for SAD. To this end, 40 individuals with SAD completed questionnaire measures of symptomatology, social anxiety relevant cognitions, and schema modes, as well as retrospective measures of childhood trauma and parental style. Given the association of SAD with schemas from the Disconnection/Rejection Domain, we hypothesize that social anxiety symptoms will be associated with Vulnerable Child mode (characterized by anxiety and shame) and Punitive Critic mode (inducing shame). As overreliance on avoidant coping is a defining feature of SAD (Clark & Wells, 1995; Rapee & Heimberg, 1997), we further predict that avoidance-based Coping Modes will be associated with social

anxiety symptomatology. Further exploratory analyses will investigate the relative predictive value of identified key schema modes on social anxiety symptoms and cognitions to investigate the specific impact of key modes on both social anxiety symptoms and social anxiety cognitions.

2 | METHODS

2.1 | Participants

Participants in the current study have previously been reported on in Norton and Abbott (2017a), and were recruited via mass screening of first-year psychology students and flyers placed around the university campus. The sample comprised a total of 40 individuals who met criteria for DSM-5 SAD (APA, 2013). All participants were administered the Anxiety and Related Disorders Interview Schedule for DSM-5 (ADIS-5; Brown & Barlow, 2014) and the Avoidant Personality Disorder (AvPD) section of the International Personality Disorder Examination for ICD-10 (Loranger et al., 1997) by a registered psychologist and post-graduate clinical psychology student. Assessment of AvPD was included consistent with a dimensional perspective in which SAD and AvPD symptomatology lies on a continuum rather than representing discrete disorders (Crome et al., 2010). Participants who met criteria for a principal clinical diagnosis of SAD were included in the study (clinician-rated severity, $M = 6.13$, $SD = 1.42$ on a Likert scale ranging from 0 to 8). Participants were excluded if they were not proficient in English or if a clinical disorder other than SAD better accounted for their symptoms (DSM-5; APA, 2013).

The mean age of participants was 20.25 years, $SD = 3.56$, and 87.5% ($n = 35$) were female. The majority of the sample identified their ethnicity as Asian (50%) or Anglo-Australian (30%). The majority of the sample identified their relationship status as single (62.5%) or dating (22.5%). Most participants were in their first (55%) or second (20%) year of tertiary education. The sample reported high levels of comorbidity, including AvPD (17.5%), Generalized Anxiety Disorder (27.5%), Major Depressive Disorder (22.5%), Post Traumatic Stress Disorder (20%), and Specific Phobia (25%). See Norton and Abbott (2017a) for further detail on recruitment and participant characteristics.

2.2 | Measures

Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998). The SIAS is a 20-item self-report measure that assesses fears of social interaction, including cognitive, affective, and behavioral symptoms. Respondents indicate the degree to which they feel each statement is characteristic/true of them on a 5-point scale ranging from 0 (not at all) to 4 (extremely), including three reverse-scored items. A systematic review of the psychometric properties of self-report measures of social anxiety indicated that psychometric properties for the SIAS were equivalent, regardless of whether reverse-scored items were included (Modini et al., 2015). The SIAS possesses high internal consistency and strong validity as a measure of social anxiety (Mattick & Clarke, 1998). The SIAS demonstrated good internal consistency in the current study ($\alpha = 0.84$).

Brief Fear of Negative Evaluation Scale (B-FNE; Leary, 1983). The BFNE is a 12-item self-report measure assessing cognitions central to SAD, that is, fears of negative evaluation (Leary, 1983; Weeks et al., 2005). Items describe fearful or worrying cognitions that are rated on a 5-point scale ranging from 1 (not at all characteristic of me) to 5 (very characteristic of me), including four reverse-scored items. A systematic review of the psychometric properties of self-report measures of social anxiety indicated that psychometric properties for the BFNE were equivalent, regardless of whether reverse-scored items were included (Modini et al., 2015). The BFNE demonstrates sound psychometric properties (Weeks et al., 2005) and internal consistency in the current study was excellent ($\alpha = 0.86$).

Self-Beliefs Related to Social Anxiety Scale (SBSA, Wong & Moulds, 2011). The SBSA is a 15-item measure that was used to assess maladaptive self-beliefs characteristic of social anxiety. Participants rate the extent to which they agree with various high standard (e.g., "I must get everyone's approval"), conditional (e.g., "If I make mistakes others will reject me"), and unconditional (e.g., "People think I'm inferior") beliefs on a 10-point scale from 0 (do not agree at all) to 10 (strongly agree). Each subscale has demonstrated good internal consistency and test-retest reliability in both student samples (Wong et al., 2014) and those diagnosed with SAD (Wong et al., 2021). Internal consistency in the current study was ranged from good to excellent (α's ranged from 0.61 to 0.90).

Childhood Trauma Questionnaire – Short Form (CTQ-SF; Bernstein et al., 2003). The CTQ-SF is a 28-item self-report measure designed to assess frequency and severity of different childhood maltreatment across five domains: Sexual Abuse, Physical Abuse, Physical Neglect, Emotional Abuse, and Emotional Neglect (Bernstein & Fink, 1998; Bernstein et al., 2003). Participants rated the degree to which each item was true of their experience growing up on a scale from 1 (never) to 5 (very often). The CTQ-SF demonstrates good to excellent reliability and validity (Bernstein & Fink, 1998; Bernstein et al., 2003), and excellent internal consistency was evident in the current study (α's ranged from 0.81 to 0.98).

Measure of Parental Style (MOPS; Parker et al., 1997). The MOPS is a 15-item self-report measure retrospectively assessing dysfunctional parenting. Participants rate the behavior of each parent toward them during their first 16 years on a 4-point scale from 0 (not at all) to 3 (extremely). Items form three subscales corresponding to three dysfunctional parental characteristics: indifference, abuse, and overcontrol. In the current study, totals for each of the three subscales were averaged across ratings for each parent to form an average for each parental characteristic. The MOPS has demonstrated good psychometric properties (Parker et al., 1997), and subscales demonstrated good to excellent internal consistency in the current study (α's ranged from 0.66 to 0.90).

Schema Mode Inventory (SMI; Lobbestael et al., 2010; Young et al., 2007). Participant's schema modes were identified using the SMI, which is a self-report measure assessing the presence of 14 common schema modes within four mode categories: (1) Dysfunctional Child Modes (i.e., Vulnerable Child, Angry Child, Enraged Child, Impulsive Child, Undisciplined Child Modes); (2) Dysfunctional Coping Modes (i.e., Compliant Surrender, Detached Protector, Detached Self-Soother, Self-Aggrandizer, and Bully and Attack Coping Modes); (3) Dysfunctional Critic Modes (i.e., Punitive Critic and Demanding Critic Modes); and (4) Healthy Modes (i.e., Health Adult and Happy Child Modes). The 124-item inventory is scored on a Likert scale ranging from 0 ('never or hardly ever') to 5 ('always). Example items include: "I feel lost", "I feel humiliated", "I feel weak and helpless" (Vulnerable Child); "I deserve to be punished", "I'm a bad person" (Punitive Critic); "I let other people get their own way instead of expressing my own needs" (Compliant Surrender); and "I like doing something exciting or soothing to avoid my feelings (e.g., working, gambling, eating, shopping, sexual activities, and watching TV)" (Detached Self-Soother). A mean score is calculated for each of the 14 mode scales with higher scores indicating stronger endorsement of that particular mode. Strong psychometric validity and reliability has previously been demonstrated for the SMI with an excellent 14-factor model fit (CFI = 0.98), good internal consistency (α = 0.86), excellent test-retest reliability (mean ICC = 0.84), reasonable construct validity, good convergent validity, and moderate divergent validity (Lobbestael et al., 2010). Internal consistency for individual subscales in the current study was mostly good or excellent (α's > 0.80) aside from Healthy Adult (α = 0.75), Bully and Attack (α = 0.66) and Self-Aggrandizer (α = 0.54).

2.3 | Procedure

After giving informed consent, participants completed questionnaire measures of social anxiety symptomatology (SIAS) and social anxiety relevant cognitions (BFNE, SBSA), as well as the diagnostic interview (ADIS-5). One week later, participants completed the Schema Modes Questionnaire (SMI), as well as self-report measures of childhood trauma (CTQ-SF) and parenting (MOPS). All elements of the current study were approved by the Human Research Ethics Committee at The University of Sydney (HREC Project Number 2014/647).

2.4 | Statistical analyses

Means were calculated for schema modes and compared to other clinical samples where available. Zero-order correlations were conducted to explore the relationships of schema modes with (1) social anxiety symptoms, (2) social anxiety cognitions, (3) parental styles (overcontrol, indifference, and abuse), and (4) childhood trauma domains (emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect). Multiple regression analyses were utilized to explore the relative predictive value of key maladaptive modes for social anxiety symptoms and cognitions. Due to construct similarity, a composite variable was created for social anxiety cognitions by summing SBSA and BFNE scores for the regression analysis.

3 | RESULTS

Analyses indicated that key symptom measures (SIAS, BFNE, SBSA) were normally distributed (Shapiro–Wilk test; all p's > 0.05) and inspection of box plots indicated no outliers. Some subscales of measures of trauma (CTQ), parental style (MOPS), and schema modes (SMI) were positively skewed, consistent with relatively low prevalence of specific traumatic experiences and parental styles reported among SAD populations, and expectations of low prevalence of specific schema modes among SAD individuals (e.g., Bully and Attack mode). However, comparison of means and 5% trimmed means were almost identical on subscales that were not normally distributed. Hence, outliers were not removed from these subscales.

Means, standard deviations, and schema modes are presented in Table 1. The correlations of schema modes with social anxiety symptoms (SIAS) are presented graphically in Figure 1. Correlations ≥ ±.4 were deemed of primary interest, consistent with factor analytic techniques, and hence only these modes were included in subsequent analyses. These key modes were: Vulnerable Child, Happy Child, Compliant Surrender, Detached Self-Soother, Punitive Critic, Demanding Critic, and Healthy Adult. For a comparison of means and standard deviations

TABLE 1 Means and standard deviations for schema modes on the SMI

Schema mode	Mean *(SD)*	Range
Vulnerable Child	2.96 (*1.00*)	1.20–5.40
Angry Child	2.60 (*1.04*)	1.10–5.40
Enraged Child	1.52 (*0.57*)	1.00–4.22
Impulsive Child	2.34 (*0.88*)	1.00–4.75
Undisciplined Child	3.42 (*1.05*)	1.20–5.60
Happy Child	3.42 (*0.75*)	1.80–5.40
Compliant Surrender	3.65 (*1.00*)	2.14–5.29
Detached Protector	2.67 (*0.89*)	1.11–4.44
Detached Self-Soother	3.23 (*1.11*)	1.50–5.75
Self-Aggrandiser	2.50 (*0.69*)	1.50–4.30
Bully and Attack	1.81 (*0.55*)	1.00–3.56
Punitive Critic	2.37 (*0.78*)	1.10–4.20
Demanding Critic	3.44 (*0.96*)	1.86–5.57
Healthy Adult	3.76 (*0.63*)	2.40–5.30

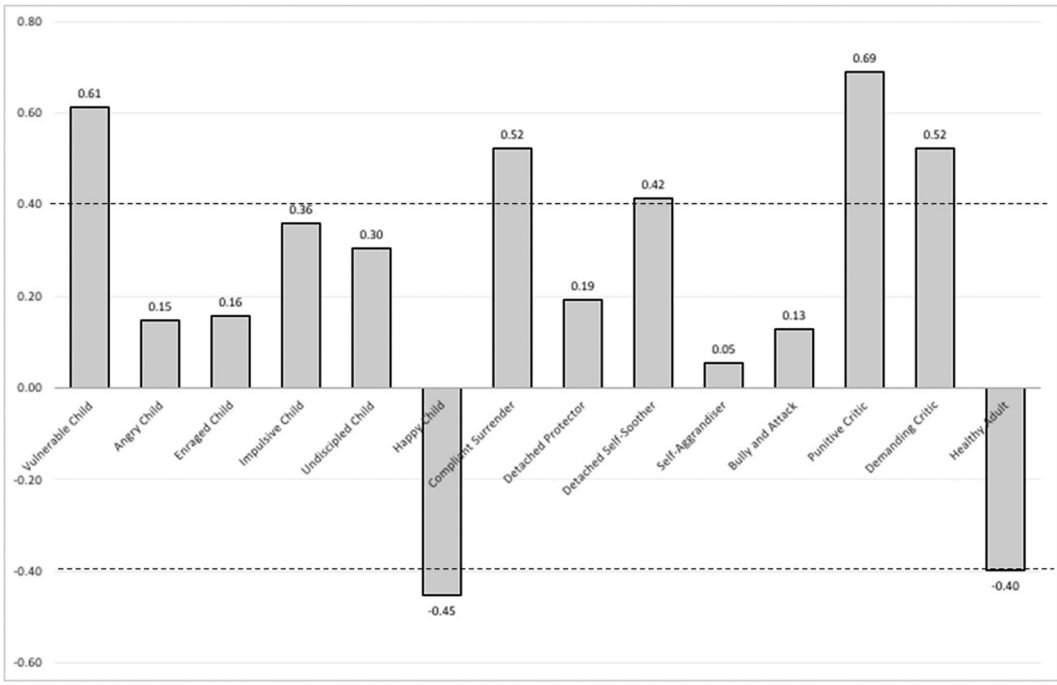

FIGURE 1 Correlations of schema modes (SMI) with social anxiety symptom severity (SIAS). The dotted lines represent that correlations ≥ ±0.4 were deemed of primary interest.

with a personality disorder sample, see Bamelis et al. (2011), who completed similar exploratory analyses in the investigation of schema mode conceptualizations for specific personality disorders. Correlations among these key schema modes, social anxiety symptoms (SIAS), and social anxiety cognitions (BFNE and SBSA) are presented in Table 2. Strong correlations were particularly observed between key modes and unconditional beliefs on the SBSA, with all being significant aside from Detached Self-Soother (*r*'s ranged from 0.48 to 0.76).

Correlations among key schema modes, parental styles on the MOPS (indifference, overcontrol, abuse), and childhood trauma domains on the CTQ (emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect) are presented in Table 3. Of the parenting and trauma variables, parental overcontrol was most consistently correlated with key schema modes (Vulnerable Child, Compliant Surrender, Detached Self-Soother, and Punitive Critic, *r*'s ranged from 0.41 to 0.44).

Social anxiety symptoms (SIAS) were predicted by the Punitive Critic, $\beta = 0.61$, $p = 0.03$. The other key maladaptive schema modes were not found to be significant. The overall model fit was $R^2 = 0.49$. When social anxiety cognitions (BFNE and SBSA composite) were predicted by key maladaptive schema modes, it was found that Detached Self-Soother, $\beta = -0.38$, $p = 0.01$, and Punitive Critic, $\beta = 0.61$, $p = 0.01$, were significant predictors. The overall model fit was $R^2 = 0.60$. Full results of both regressions are presented in Table 4.

4 | DISCUSSION

The current study explored the presence of 14 common schema modes among 40 individuals with SAD. Correlations of schema modes with social anxiety symptoms suggest that key maladaptive modes in SAD include Punitive Critic (and Demanding Critic to a lesser extent), Vulnerable Child mode, as well as avoidance-based coping (Detached Self-soother mode). Correlations demonstrate that Compliant Surrender is also a significant coping mode

TABLE 2 Correlations among key schema modes, symptom measures, and social anxiety cognitions

	1	2	3	4	5	6	7	8	9	10	11	12
1. SIAS	-											
2. BFNE	0.63**	-										
3. SBSA: Conditional beliefs	0.40*	0.50**	-									
4. SBSA: Unconditional beliefs	0.52**	0.33*	0.77**	-								
5. SBSA: High standard beliefs	0.18	0.27	0.49**	0.35	-							
6. Vulnerable child	0.61**	0.58**	0.57**	0.64**	0.23	-						
7. Happy child	−0.52**	−0.52**	−0.53**	−0.51**	−0.31	−0.76**	-					
8. Compliant surrender	0.52**	0.49**	0.51**	0.59**	0.34*	0.78**	−0.55**	-				
9. Detached elf-soother	0.42**	0.26	0.06	0.29	−0.13	0.51**	−0.35*	0.44**	-			
10. Punitive Critic	0.69**	0.57**	0.63**	0.76**	0.29	0.86**	−0.61**	0.76**	.45**	-		
11. Demanding Critic	0.52**	0.53**	0.48**	0.48**	0.36*	0.67**	−0.43**	0.607**	.47**	.69**	-	
12. Healthy Adult	−0.40	−0.25	−0.58**	−0.58**	−0.04	−0.48**	0.54**	−0.50**	−0.10	−0.56**	−0.24	-

Note: SIAS, Social Interaction Anxiety Scale (Mattick & Clarke, 1998); BFNE, Brief Fear of Negative Evaluation Scale (Leary 1983); SBSA, Self Beliefs in Social Anxiety Scale (Wong & Moulds, 2011). * $p < 0.05$, ** $p < 0.01$.

TABLE 3 Correlations among key schema modes, parental style, and childhood trauma

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. ulnerable child	-														
2. Happy child	−0.76**	-													
3. Compliant surrender	0.78**	−0.55**	-												
4. Detached self-soother	0.51**	−0.35*	0.44**	-											
5. Punitive critic	0.86**	−0.61**	0.76**	0.45**	-										
6. Demanding critic	0.67**	0.43**	0.61**	0.47**	0.69**	-									
7. Healthy adult	−0.48**	0.54**	−0.50**	0.50**	0.56**	−0.24	-								
8. Parental indifference	0.23	−0.21	0.16	0.16	0.15	0.02	−0.18	-							
9. Parental overcontrol	0.44**	−0.23	0.44**	0.44**	0.44**	0.30	−0.12	0.41**	-						
10. Parental abuse	0.21	−0.14	0.18	0.18	0.24	−0.03	−0.14	0.59**	0.65**	-					
11. Childhood emotional abuse	0.39*	−0.18	0.34*	0.16	0.40*	−0.02	−0.19	0.56**	0.62**	0.80**	-				
12. Childhood physical abuse	0.38*	−0.24	0.32*	0.18	0.43**	0.08	−0.12	0.44**	0.50**	0.66**	0.76**	-			
13. Childhood sexual abuse	0.19	−0.07	0.17	0.14	0.30	0.10	−0.08	0.24	0.47**	0.65**	0.52**	0.67**	-		
14. Childhood emotional neglect	0.19	−0.44**	0.20	0.00	0.11	−0.16	−0.20	0.63**	0.36*	0.62**	0.63**	0.48**	.43**	-	
15. Childhood physical neglect	0.24	−0.18	0.12	−0.14	0.28	0.05	−0.14	0.73**	0.47**	0.80**	0.68**	0.71**	.67**	.71**	-

*$p < 0.05$, **$p < 0.01$.

TABLE 4 Results of the final regression model of key maladaptive schema modes predicting (1) social anxiety symptoms (SIAS), and (2) social anxiety cognitions (composite BFNE and SBSA)

Variable	Full model R^2	*β*	*t*	*p*
Social anxiety symptoms				
Vulnerable child		0.32	0.12	0.91
Compliant surrender		−0.06	−0.27	0.79
Detached self-soother		0.12	0.85	0.40
Punitive critic		**0.61**	**2.35**	**0.03**
Demanding critic	**0.49**	0.06	0.33	0.75
Social anxiety cognitions				
Vulnerable child		0.04	0.17	0.87
Compliant surrender		0.19	1.03	0.31
Detached self-soother		**−0.38**	**−2.87**	**0.01**
Punitive critic		**0.61**	**2.59**	**0.01**
Demanding critic	**0.60**	0.12	0.75	0.46

Note: Bold values are statistically significant. SIAS, Social Interaction Anxiety Scale (Mattick & Clarke, 1998); BFNE, Brief Fear of Negative Evaluation Scale (Leary, 1983); SBSA, Self Beliefs in Social Anxiety Scale (Wong & Moulds, 2011).

for socially anxious individuals, suggesting that they are likely to act in ways that are consistent with their schema beliefs, for instance, they might surrender to being an outsider (i.e., social isolation schema), to being inherently flawed (i.e., defectiveness schema), or fearful to put their own needs first (i.e., subjugation schema). This association between social anxiety and surrender is consistent with previous findings regarding key schemas in SAD (Pinto-Gouveia et al., 2006). Furthermore, negative correlations of social anxiety symptoms with Healthy Adult and Happy Child modes suggest that socially anxious individuals have difficulty accessing healthy parts of the self (Arntz & Jacob, 2013).

A limitation of the SMI is that it is not able to measure all recognized modes, and some which might be hypothesized to play a role in anxiety disorders, such as an Over-Controller Coping Mode (which can include over-preparedness, over-analysing, and control-based safety behaviors; Arntz & Jacob, 2013) or the more recently hypothesized Over-Analyser coping mode (which more specifically focuses on rumination and negative repetitive thinking patterns common to anxiety disorders; Stavropoulos et al., 2021). In particular, it does not capture the Avoidant Protector mode (i.e., situational avoidance and avoidance-based safety behaviors), or more nuanced forms of Vulnerable Child mode (e.g., Abandoned and Abused child). In contrast to the cognitive and experiential avoidance demonstrated in Generalized Anxiety Disorder (Stapinski et al., 2010), situational and behavioral avoidance are a key feature of SAD (Clark & Wells, 1995; Rapee & Heimberg, 1997) suggestive of the important role of Avoidant Protector as a coping mode in SAD conceptualizations. Further research is needed on expanding the ability of the Schema Mode Inventory to reliably assess for other common modes (Bamelis et al., 2011).

Outcomes suggest that these key schema modes in SAD are associated with particular types of self-beliefs and parental style. Specifically, unconditional (and to a lesser extent, conditional) beliefs were highly positively correlated with Vulnerable Child mode, Punitive and Demanding Critic modes, and Compliant Surrender (but not Detached Self-soother) coping modes. This suggests substantial overlap between dominant schema modes in SAD and key maintaining factors described in cognitive models of SAD (i.e., unconditional and conditional assumptions about the self; Clark & Wells, 1995), especially Punitive Critic mode (r's > 0.6). Further, results indicate that parental overcontrol was the only parenting and childhood trauma factor to be moderately and consistently correlated with

the key modes. This is consistent with etiological research implicating parental overcontrol in the development of childhood anxiety disorders (Spence & Rapee, 2016).

Correlation analyses highlight the central role of the Punitive Critic in SAD. Unsurprisingly, this mode was highly correlated ($r = 0.76$) with unconditional self-beliefs, which mirror many key themes of common schemas in SAD (e.g., defectiveness, social isolation). This is underscored by regression analyses finding that the Punitive Critic mode significantly predicted social anxiety symptoms and cognitions. The Punitive Critic mode represents internalized punitive messages or a critical object rooted in a variety of negative experiences, which previous research suggests may be more likely to be peer- than family related among SAD individuals (Calvete, 2014; Norton & Abbott, 2017a). Furthermore, we hypothesize that the Punitive Critic may be the first mode to be activated for an individual with SAD, and therefore is the most predictive of social anxiety symptoms and cognitions. In other words, the part of the self that is associated with self-critical messages may be the most prominent for a SAD individual when in a triggering situation (e.g., interpersonal interaction). This is consistent with data demonstrating that people with SAD are highly self-critical (Cox et al., 2000, 2004), that high levels of self-criticism are associated with social anxiety symptom severity, and that reductions in self-criticism are associated with improved outcomes of cognitive-behavioral treatment for SAD (Cox et al., 2002). In addition, Detached Self-Soother mode also significantly (negatively) predicted social anxiety cognitions, consistent with the idea that the more experientially distracted someone is, the less aware they are of their negative cognitions. Indeed, we hypothesize that the Detached Self-soother functions as an escape from the activation of negative self-beliefs and associated distress.

As anticipated, the schema modes associated with SAD symptoms have significant overlap with the schema modes associated with AvPD (Bamelis et al., 2011), consistent with the severity continuum hypothesis that AvPD and SAD exist as a similar underlying disorder at different levels of severity (Lampe & Malhi, 2018). Given the theorized overlap between SAD and AvPD (Lampe & Malhi, 2018), it is interesting to note that the Detached Protector mode appears to be the key differentiating mode between the two disorders. Bamelis et al. (2011) reported Detached Protector to be a key coping mode in AvPD, whereas this mode was not strongly or significantly correlated ($r = 0.19$) with social anxiety symptoms. This finding might suggest that socially anxious individuals engage in less internal or experiential avoidance than AvPD individuals, and instead they endeavor to prevent their strong internal experiences via behavioral avoidance strategies (Clark & Wells, 1995; Rapee & Heimberg, 1997). However, given the sparsity of research in these areas and the small sample size of the current study, further investigation is needed to better understand whether these two disorders do indeed exist on a continuum, whether the difference in Protector Modes are a replicable difference, and if so, what mechanisms determine that difference.

The findings of this study, along with contemporary SAD research, is suggestive of a case conceptualization that emphasizes the role of Punitive Critic, Compliant Surrender, Detached Self-soother, and Avoidant Protector in maintaining the shame-filled Vulnerable Child. Figure 2 illustrates this hypothesized schema mode conceptualization.

Consistent with research that has previously demonstrated the significance of shame-inducing messages in the development and maintenance of SAD (Shahar et al., 2015), we theorize from an ST perspective that parental overcontrol and social trauma likely lead to the development of the internalized Punitive Critic. Negative or ambiguous external cues likely trigger EMS memories of negative evaluation, which the Punitive Critic then interprets as cause for shame and criticism of the individual in the present, reinforcing core beliefs that the person is inherently unlikable.

Both traumatic interpersonal experiences and Critic mode messages (i.e., the part of the self that engages in punitive and shaming self-talk) likely contribute to the development of the Vulnerable Child mode (i.e., the part of the self which is sensitive to criticism and rejection), and is congruent with findings that SAD is characterized by a high degree of anxiety and a fear of negative evaluation (Moscovitch, 2009). In an attempt to cope with the shaming messages of the Punitive Critic and the intense emotions of the Vulnerable Child, it is likely that individuals with SAD rely on the Avoidant Protector to avoid triggers for distress or the Detached Self-soother to distract

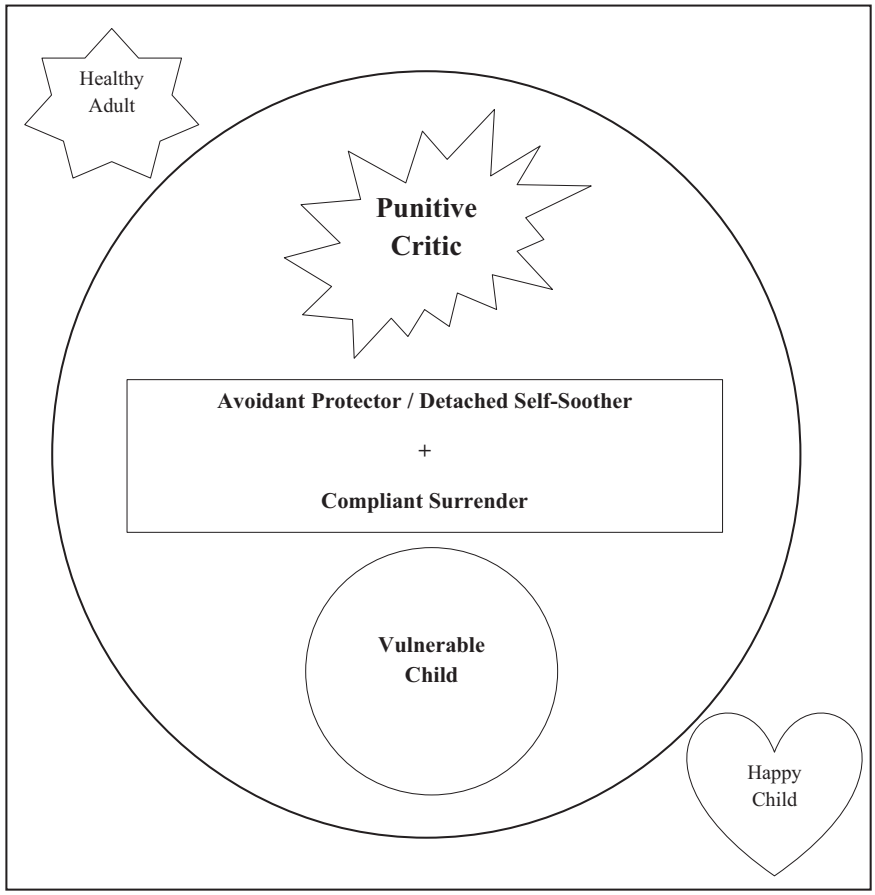

FIGURE 2 Hypothesized schema mode conceptualization in SAD.

themselves from distressing emotions, which inadvertently perpetuates anxiety and the mode pattern. This is congruent with previous theoretical models of SAD, which emphasize the defensive role of avoidance (Rapee & Heimberg, 1997).

The Compliant Surrender represents a further coping strategy used by individuals with SAD, who feel unable to engage in more active problem-solving and feel safer resigning themselves to the familiar. Thus, they subjugate their own needs and behave in a manner consistent with their negative schemata (e.g., allowing themselves to be bullied or excluded), thereby reinforcing their negative self-beliefs and shaming critic messages. Given the predominance of these maladaptive modes, it follows that individuals with SAD would have a lower than average capacity for the type of spontaneity and connection associated with Happy Child, and a lower capacity for adaptive coping and problem-solving typically associated with Healthy Adult.

Further study is needed to empirically validate this conceptualization, along with studies to determine the etiology and causal factors that predict the development of these modes. Additionally, it may be important for further inquiry to determine if there is a global pattern of modes in SAD, or if there are different mode subtype patterns, as per evidence that SAD can demonstrate heterogeneity in symptomology (Hofmann et al., 2004). Previous authors have supported the development of a more specific diagnostic classification system for SAD that could demarcate the prominence of different characteristics (i.e., fearfulness, anxiousness, shyness, self-consciousness, submissiveness, or anger; Hofmann et al., 2004), which may, in turn, indicate a possible variance of the prominence of different Critic, Coping, and Child modes in SAD individuals. The future inquiry might also

further identify common core beliefs (Wong et al., 2017) within EMSs most associated with SAD (Calvete et al., 2013; Pinto-Gouveia et al., 2006) and how these influence the state-based experience, function, and behavior of each mode.

Whilst this study demonstrates the need and relevance of further investigation of Schema Mode Therapy for SAD, it is limited by its exploratory nature, small sample size, absence of a control condition, and demographic features of the sample (i.e., nontreatment-seeking, predominantly female and well-educated), which impacts generalizability of this study. Power calculations suggest the sample size was sufficient to detect a large effect on the regression analyses ($\alpha = 0.05$, power = 0.8, required $N = 43$); however, a larger sample would be required to detect medium (required $N = 92$) or small effects (required $N = 647$) (power analyses conducted using G'Power, Version 3, Faul et al., 2007). Thus, replication of these findings using a larger sample and hence greater power is required.

Future research would benefit from the use of extended SMI measures that allow for the quantitative measurement of the Avoidant Protector and the differentiation of the subcategories of Vulnerable Child modes, and also to explore the potential role of negative peer experiences in the development of the key modes identified, as well as the impact of parental style and negative self-beliefs (Norton & Abbott, 2017a). Further research is needed to replicate these findings to determine if there is a common pattern of modes within SAD and whether this pattern supports the SAD-AvPD continuum hypothesis or a model of separate interpersonally anxious groups. To this end, comparison of modes (e.g., Detached Protector) among individuals with SAD-only compared to SAD + AvPD would be valuable.

If this mode pattern can be determined through further research then these maladaptive modes may be amenable to change through ST and treatment trial research may be indicated. This novel application of ST to SAD would be of significance given the limitations of current CBT treatments for SAD, which leave many clients with residual symptoms posttreatment (Heimberg, 2002; Leichsenring et al., 2013; Mörtberg et al., 2011; Rodebaugh et al., 2004). ST, with its emphasis on etiological factors and its efficacy with other chronic-course disorders, may offer a more comprehensive treatment of the underlying factors that precipitate and perpetuate SAD for those who do not respond to CBT.

In conclusion, the current study proposes a schema mode case conceptualization for SAD and attempts to expand the process of integrating etiological factors into models of the disorder. We hope that this exploratory study will provide a foundation for exploring the efficacy of Schema Mode Therapy Mode Model for SAD, especially among non-responders to CBT, and thereby enhance treatment outcomes for individuals with the disorder.

AUTHOR CONTRIBUTIONS

All authors have substantially contributed to this manuscript and meet American Psychological Association requirements for authorship. All authors approved of the content of this paper, and have agreed to submit our manuscript to your esteemed journal.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ETHICS STATEMENT

All elements of the current study were approved by the Human Research Ethics Committee at the relevant institution and all participants provided informed consent to participate in this study.

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