International Journal of Psychology & Psychological Therapy, 2013, *13*, 1, 113-124

Early maladaptive schemas and interpersonal problems: A circumplex analysis of the YSQ-SF

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Abstract

According to Schema Therapy, early maladaptive schemas (EMSs) are closely tied to interpersonal problems. The current study investigated these relationships using a circumplex analysis approach. A sample of psychiatric outpatients (*N*= 106) completed the Young Schema Questionnaire -Short Form (YSQ-SF) and the Inventory of Interpersonal Problems -Circumplex (IIP-C). Results showed strong relationships between EMSs and interpersonal problems. Findings from circumplex analyses suggest that EMSs are associated with a broad range of maladaptive interpersonal behaviors. However, none of the YSQ-SF scales were located in the domineering, intrusive, and overly nurturing octants of the circumplex
Key words: Early maladaptive schemas, interpersonal problems, YSQ-SF, IIP-C, circumplex analysis.

Schema Therapy (ST) is an integrative treatment approach developed by Jeffrey Young (1990) to treat patients with personality disorders or long-standing characterological problems. Central to ST is the notion of so-called early maladaptive schemas (EMSs). Early maladaptive schemas can be described as broad, self-perpetuating, and maladaptive life themes originating from repetitive adverse relational experiences with significant others in childhood and adolescence (Young, Klosko, & Weishaar, 2003). Due to these toxic experiences, basic psychological needs are not met making the individual vulnerable to developing EMSs. Over time, EMSs evolve into a defining part of the construal of the self and significant others. In situations relevant to an EMS, the individual experiences strong emotions. Maladaptive coping with EMSs (surrendering, avoiding, overcompensating) and the need for cognitive consistency prohibit the natural modification of EMSs through corrective experiences, with the result that EMSs are maintained over time and become trait-like (Rafaeli, Bernstein, & Young, 2011).

Young and colleagues distinguish between 18 EMSs that are organized in five domains, which correspond to the frustration of five basic psychological needs in childhood: secure attachment, autonomy, realistic limits, self-directedness, and playfulness (Rafaeli *et al*., 2011). As a self-report measure for the assessment of EMSs, the Young Schema Questionnaire (YSQ) and a short form (YSQ-SF) have been constructed. The YSQ-SF is based on a factor-analytic study of the YSQ (Schmidt, Joiner, Young, & Telch, 1995) and covers 15 of the 18 EMSs on the current schema list (Young *et al*., 2003). The scales of the YSQ-SF are briefly described in Table 1.

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Table 1. YSQ-SF scales.

Scale	Description
Disconnection and rejection domain	
Emotional deprivation	The expectation that one's need for nurturance, empathy, and protection will not be met by others.
Abandonment	The belief that significant others providing support are unstable, unreliable or unpredictable.
Mistrust	The expectation that others will intentionally hurt, abuse, cheat, or take advantage.
Social isolation	The feeling that one is fundamentally different from other people, isolated, and not part of a community.
Defectiveness	The belief that one is inherently flawed, defective, and unlovable.
Impaired autonomy and performance domain	
Failure	The belief that one is fundamentally inadequate when it comes to performance and achievement.
Dependence	The belief that one is dependent of others to handle everyday life.
Vulnerability	The fear that an imminent and unpreventable catastrophe will strike at any time.
Enmeshment	Extensive emotional involvement and closeness with significant others at the expense of full individuation.
Other-directedness domain	
Subjugation	The belief that one has to surrender control to others and to suppress one's own needs and emotions.
Self-sacrifice	An excessive focus on meeting the needs of others at the expense of one's own needs and well-being.
Overvigilance and inhibition domain	
Emotional inhibition	The belief that one must inhibit spontaneous feelings and actions.
Unrelenting standards	The belief that one must strive to meet high internalized standards.
Impaired limits domain	
Entitlement	The belief that one is superior and entitled to special rights and privileges.
Insufficient self-control	A lack of self-control and tolerance of frustration to achieve one's goals.

In ST, EMSs and maladaptive coping responses are proposed to underlie personality disorders and some recurrent or chronic axis-I disorders (e.g., depression, anxiety, or substance abuse) as well as milder psychological problems, such as relationship difficulties or problems at work (Young, 1990). An accumulating body of research has confirmed that EMSs are related to a broad range of psychiatric diagnoses and psychological problems, particularly personality disorders (e.g., Brotchie, Meyer, Copello, Kidney, & Waller, 2004; Dutra, Callahan, Forman, Mendelsohn, & Herman, 2008; Hawke & Provencher, 2011; Lee, Taylor, & Dunn, 1999; Waller, Kennerly, & Ohanian, 2007).

Interpersonal problems are present in axis-I and axis-II disorders (e.g., Cain *et al*., 2012; Hilsenroth, Menaker, Peters, & Pincus, 2007; Salzer *et al*., 2008; Soldz, Budman, Demby, & Merry, 1993) and are often the reason why clients seek psychological treatment (Horowitz, 1979). From an ST perspective, these problems can often be understood as maladaptive coping responses to EMSs. In contrast to early definitions of EMSs (e.g., McGinn, Young, & Sanderson, 1995), the current conceptualization of EMSs emphasizes that maladaptive behaviors are not considered part of schemas, but are driven by schemas (Young *et al*., 2003). Hence, interpersonal problems may represent maladaptive interpersonal strategies that are used to manage the painful emotions that accompany the activation of EMSs.

Thus, according to the ST model, EMSs reflect early adverse interaction patterns and lead to interpersonal difficulties later in life. Bernstein (2005) argues that EMSs are fundamentally interpersonal in nature. However, despite theoretically proposed close

connections between EMSs and interpersonal problems, to the author's best knowledge, these relationships have not yet been empirically explored. Therefore, the aim of the present study is to fill this gap and to investigate how EMSs and interpersonal problems are related.

It has been proposed that interpersonal behavior and interpersonal problems can be conceptualized and organized by means of a circumplex model (Alden, Wiggins, & Pincus, 1990; Leary, 1957; Wiggins, 1996). The interpersonal circumplex is defined by a circular arrangement of interpersonal behaviors around the two orthogonal dimensions of dominance (or control) and love (or affiliation) (Gurtman & Balakrishnan, 1998). These two dimensions are also referred to as agency and communion (Gurtman, 2009; Horowitz, Dryer, & Krasnoperova, 1997). It has been shown that these two dimension, rotated 45 degrees, correspond to the dimensions of agreeableness and extraversion of the five-factor model of personality (McCrae & Costa, 1989; Soldz et al., 1993). The circular space is often divided into eight segments or octants (Leary, 1957; Wiggins, 1979). The structural properties of the model make it possible to reduce a circular interpersonal profile to a vector in the interpersonal space and thereby to locate individuals within the circumplex and to classify them with respect to their predominant interpersonal style. In a similar way, psychological scales can be projected onto the circle to evaluate their relationships with interpersonal themes or their "interpersonalness" (Gurtman, 1991, 1992). The structural properties of a circular profile of an individual or a scale can be summarized by three parameters: angular displacement, amplitude, and elevation (Gurtman & Balakrishnan, 1998; Wright, Pincus, Conroy, & Hilsenroth, 2009). The vector's angle shows the predominant theme or central tendency in the profile. Its length or amplitude indicates whether there is a clear peak. The profile elevation shows the average interpersonal distress which has been related to maladjustment (Pincus & Gurtman, 2006).

Thus, the aim of the current study is to examine the relationships between EMSs, as measured by the YSQ-SF, and interpersonal problems by conducting a circumplex analysis of the YSQ-SF scales. Based on the definitions of schema domains and the specific EMSs, it is hypothesized that the EMSs of the disconnection/rejection and overvigilance/inhibition domains are related to low dominance and low love. The impaired autonomy domain is expected to be associated with low dominance. The EMSs of the impaired limits domain is hypothesized to be related to high dominance and low love, whereas the opposite is expected for the EMSs of the other-directedness domain, namely low dominance and high love.

Method

Participants

The present study included 106 psychiatric outpatients who participated in a study on the concept of EMSs (e.g., Thimm, 2010). Seventy-eight (74%) of the patients were female, and the patients' average age was 40.3 years (*SD*= 12.2; range= 18-67). Of the

participants in this study, 35% were married, 27% were single, 26% were cohabiting, 11% were divorced/separated, and 2% were widowed. The participants' highest educational levels were as follows: lower secondary school 15%, upper secondary school 38%, and higher education 36% (11% did not report their education). All patients were diagnosed by their respective therapists using ICD-10 criteria. As an aid in the diagnostic process, the MINI (Sheehan *et al*., 1998) was employed. The majority of the patients had a diagnosis of depression/dysthymia (52%) or an anxiety disorder (22% social phobia, 17% agoraphobia, 13% panic disorder, 6% generalized anxiety disorder). Other relatively frequent diagnoses in the sample were posttraumatic stress disorder (9%) and ADHD (5%). Forty-two (40%) patients had two or more diagnoses. A personality disorder was diagnosed in 12% of the participants. A detailed description of the distribution of diagnoses in the original sample can be found in Thimm (2011).

Research procedure has been approved by the Regional Committee for Medical Research Ethics for Northern Norway.

Instruments and measures

Young Schema Questionnaire -Short Form (YSQ-SF). The YSQ-SF consists of 75 items measuring 15 EMSs (Table 1). Items are answered on a six-point Likert scale from "completely untrue of me" to "describes me perfectly". Research has demonstrated that the scales of the Norwegian version of the YSQ-SF have adequate internal consistency and that its factor structure closely resembles the theoretically proposed structure on the first- and second-order levels (Hoffart *et al*., 2005).

Inventory of Interpersonal Problems -Circumplex (IIP-C). The IIP-C (Alden *et al*., 1990) is a short circumplex version of the Inventory of Interpersonal Problems (Horowitz, Rosenberg, Baer, Ureño, & Villaseñor, 1988) with eight scales: domineering, intrusive, overly nurturing, exploitable, non-assertive, socially avoidant, cold, and vindictive. Its circumplex structure has been confirmed in several studies (Pincus & Gurtman, 2006). The IIP-C is composed of 64 statements describing general interpersonal problems. Items are rated on a 5-point Likert scale from "not at all" to "very much", with 39 of the statements referring to behavioral inhibitions and beginning with "it is hard for me to…" The remaining 25 items assess excesses in interpersonal behaviors and begin with "things that I do too much…" The Norwegian translation of the IIP-C has shown satisfactory psychometric properties and circumplex structure (Monsen, Hagtvet, Havik, & Eilertsen, 2006).

Data analysis

First, descriptive statistics (skewness, means, standard deviations, and Cronbach's α) were calculated for all YSQ-SF and IIP-C scales. Prior to further analyses, highly skewed variables (YSQ-SF scales mistrust/abuse, defectiveness/shame, failure, dependence/incompetence, vulnerability to harm and illness, enmeshment, emotional inhibition, entitlement, insufficient self-control; IIP-C scales domineering, intrusive, vindictive) were log transformed resulting in distributions closer to normality. Next, bivariate correlations between YSQ-SF and IIP-C scales were computed. The YSQ-SF scales were projected onto the circumplex of interpersonal problems by calculating factor scores for dominance

(DOM) and love (LOV) (Wiggins, Phillips, & Trapnell, 1989) and correlating the YSQ-SF scales with these factors. Finally, structural summary parameters were calculated. Angular displacements and vector lengths of the YSQ-SF scales were computed using the formulas provided by Wiggins and colleagues (2003; Wiggins & Broughton, 1991; Wiggins *et al*., 1989). Elevation was computed by averaging the correlations of a given YSQ-SF scale with the eight IIP-C scales using Fisher-z transformations (Silver & Dunlap, 1987).

Results

The means, standard deviations, and reliabilities of the scales included in the analyses are displayed in Table 2. The level of interpersonal problems and the presence of EMSs in the current sample were similar to those previously reported in studies using large samples of Norwegian outpatients (Bjerke, Hansen, Solbakken, & Monsen, 2011; Hoffart *et al*., 2005). All YSQ-SF and IIP-C scales had adequate to excellent internal

Table 2. Means, standard deviations, and internal consistencies of the YSQ-SF and IIP-C.

	Mean	*SD*	Cronbach's α
YSQ-SF			
Disconnection and rejection domain			
Emotional deprivation	14.68	6.92	.90
Abandonment	13.92	6.93	.91
Mistrust	10.44	5.48	.92
Social isolation	12.87	6.66	.93
Defectiveness	10.87	5.94	.90
Impaired autonomy and performance domain			
Failure	11.32	6.43	.95
Dependence	9.32	4.30	.80
Vulnerability	10.88	5.33	.84
Enmeshment	9.06	4.56	.80
Other-directedness domain			
Subjugation	12.73	6.19	.89
Self-sacrifice	18.25	5.85	.86
Overvigilance and inhibition domain			
Emotional inhibition	11.06	5.84	.89
Unrelenting standards	17.22	5.78	.81
Impaired limits domain			
Entitlement	10.05	4.09	.76
Insufficient self-control	12.34	5.32	.84
IIP-C			
Domineering (PA)	0.75	0.56	.69
Intrusive (NO)	1.21	0.71	.68
Overly nurturant (LM)	1.84	0.78	.79
Exploitable (JK)	1.89	0.83	.80
Nonassertive (HI)	1.95	0.94	.86
Socially avoidant (FG)	1.61	0.95	.85
Cold (DE)	1.17	0.78	.79
Vindictive (BC)	0.87	0.59	.69
IIP total	1.41	0.53	.93

consistency (Cronbach's α). Correlations between measures (Table 3) showed a high a degree of overlap between EMSs and interpersonal problems, with only the domineering scale of the IIP-C not significantly related to most YSQ-SF scales. Correlations with the IIP-total score ranged from .22 (entitlement) to .69 (subjugation) with a median of .44. Table 3 also displays the correlations of the YSQ-SF scales with the interpersonal factors of dominance and love. These correlations correspond to the coordinates of the YSQ-SF scales when projected onto the circumplex (Figure 1).

Table 4 provides the values for the structural summary parameters. As shown in figure 1 and table 4, none of YSQ-SF scales were located in the domineering, intrusive, or overly nurturing octants of the circumplex. With respect to schema domains, the EMSs of the impaired limits and other-directedness domains were located in the vindictive and exploitable IIP-C octants, respectively. The EMSs of the three remaining domains were spread over different octants. The EMSs of the disconnection/rejection domain were located in the exploitable (abandonment), nonassertive (defectiveness), socially avoidant (social isolation), and cold (mistrust) octants. Early maladaptive schemas of the impaired autonomy domain were related to low affiliation and fell into the socially avoidant (failure, vulnerability), cold (dependence), and vindictive (enmeshment) octants. The unrelenting standards and emotional inhibition schemas (overvigilance/ inhibition schema domain) were located in the exploitable and cold IIP-C octants, respectively. However, six YSQ-SF scales (abandonment, defectiveness, dependence, vulnerability, enmeshment, and unrelenting standards) had no significant correlations (p <.05) with either the dominance factor or the love factor, making their placement in specific octants questionable. Furthermore, there were large variations in the YSQ-SF scale amplitudes which ranged from .05 (abandonment) to .46 (entitlement) with a median of .24. According to Gurtman (1991), an amplitude of at least .30 indicates a substantial relationship with an interpersonal theme. Of the 15 YSQ-SF scales, five (entitlement: .46, subjugation: .42, self-sacrifice: .37, insufficient self-control: .34, social isolation: .31) met this criterion, and one scale (emotional inhibition: .29) was slightly below it. Finally, elevations of the YSQ-SF scales ranged from .19 (entitlement) to .46 (subjugation), with a median of .33.

DISCUSSION

According to the theoretical model of ST, interpersonal difficulties are closely tied to early maladaptive schemas. Early maladaptive schemas are proposed to cause interpersonal problems through maladaptive coping. The present study investigated the cross-sectional relationships between EMSs and interpersonal problems in a mixed psychiatric outpatient sample by conducting a circumplex analysis of the YSQ-SF based on the IIP-C.

The results of the correlational analysis showed that all YSQ-SF scales, as expected, were generally associated with interpersonal problems. A circumplex analysis allowed a more thorough examination of the interpersonal profiles of the YSQ-SF scales. Overall,

Table 3. Correlations between YSQ-SF and IIP-C Scales.

	PA	NO	LM	JK	HI	FG	DE	BC	Total	LOV	DOM
Disconnection and rejection domain											
Emotional deprivation	-.02	.21*	.30**	.37***	.37***	.42***	.33***	.21*	.43***	-.03	-.24*
Abandonment	.15	.42***	.27**	.29**	.28**	.36***	.18	.33***	.42***	.05	-.02
Mistrust	.23*	.31**	.22*	.20*	.24*	.46***	.34***	.57***	.46***	-.23*	.05
Social isolation	.00	.25*	.26**	.39***	.46***	.60***	.35***	.28**	.50***	-.13	-.29**
Defectiveness	.06	.48***	.32***	.41***	.35***	.55***	.47***	.27**	.56***	-.05	-.16
Impaired autonomy and performance domain											
Failure	-.10	.27**	.13	.30**	.34***	.43***	.31**	.18	.36***	-.10	-.23*
Dependence	.15	.46***	.19*	.24*	.28**	.36***	.32***	.36***	.44***	-.07	.01
Vulnerability	.08	.33***	.23*	.27**	.30**	.38***	.25**	.41***	.42***	-.08	-.06
Enmeshment[1]	.22*	.48***	.30**	.27**	.24*	.36***	.42***	.45***	.50***	-.08	.07
Other-directedness domain											
Subjugation	.02	.48***	.62***	.65***	.60***	.53***	.38***	.22*	.69***	.24*	-.34***
Self-sacrifice[1]	-.07	.31**	.53***	.45***	.24*	.35***	.28**	-.04	.41***	.27**	-.25*
Overvigilance and inhibition domain											
Emotional inhibition[1]	.30**	.25*	.30**	.33***	.37***	.55***	.62***	.37***	.58***	-.27**	-.10
Unrelenting standards[1]	.14	.34***	.45***	.41***	.38***	.41***	.33***	.21*	.52***	.10	-.16
Impaired limits domain											
Entitlement[1]	.53***	.35***	-.02	-.08	-.06	.11	.19*	.44***	.22*	-.20*	.41***
Insufficient self-control[1]	.34***	.36***	.05	.04	.08	.22*	.29**	.50***	.32***	-.22*	.25**

Notes: *= p <.05; **= p <.01; ***= p <.001; N= 106; [1]N= 105; PA= Domineering; NO= Intrusive; LM= Overly nurturant; JK= Exploitable; HI= Nonassertive; FG= Socially avoidant; DE= Cold; BC= Vindictive; LOV= Love; DOM= Dominance.

Table 4. Structural summary.

	Displacement	Octant	Amplitude	Elevation
Disconnection and rejection domain				
Emotional deprivation	262.45	HI	.24	.28
Abandonment	333.15	JK	.05	.29
Mistrust	167.78	DE	.24	.33
Social isolation	246.33	FG	.31	.33
Defectiveness	253.61	HI	.16	.37
Impaired autonomy and performance domain				
Failure	247.20	FG	.25	.24
Dependence	171.51	DE	.07	.30
Vulnerability	219.05	FG	.10	.28
Enmeshment	138.84	BC	.11	.35
Other directedness domain				
Subjugation	305.72	JK	.42	.46
Self-sacrifice	317.62	JK	.37	.27
Overvigilance and inhibition domain				
Emotional inhibition	199.48	DE	.29	.39
Unrelenting standards	302.58	JK	.18	.34
Impaired limits domain				
Entitlement	116.02	BC	.46	.19
Insufficient self-control	131.68	BC	.34	.24

Notes: JK= Exploitable; HI= Nonassertive; FG= Socially avoidant; DE= Cold; BC= Vindictive.

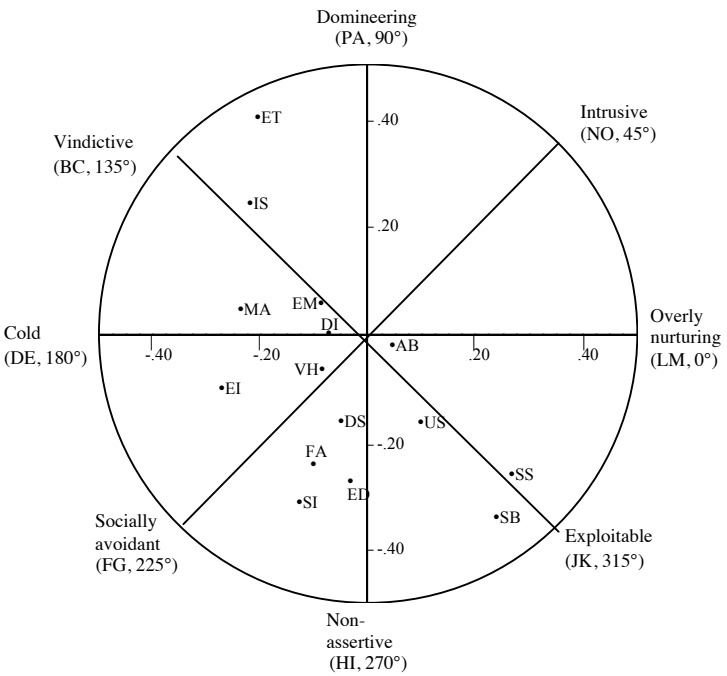

Figure 1. Location of Young Schema Questionnaire -Short Form scales in Inventory of Interpersonal Problems circumplex space. ED= Emotional deprivation. AB= Abandonment. MA= Mistrust. SI= Social isolation. DS= Defectiveness. FA= Failure. DI= Dependence. VH= Vulnerability. EM= Enmeshment. SB= Subjugation. SS= Self-sacrifice. EI= Emotional inhibition. US= Unrelenting standards. ET= Entitlement. IS= Insufficient self-control.

the results of the projection of the YSQ-SF scales onto the interpersonal circumplex were in accordance with the hypotheses. The YSQ-SF scales were located in all but the domineering, intrusive, and overly nurturing octants of the circumplex. Thus, none of the EMSs seem to be typically associated with these interpersonal themes. The EMSs of the impaired limits and other-directedness schema domains were homogenous with respect to interpersonal tendencies and were located in the vindictive and exploitable octants, respectively. The EMSs of the disconnection/rejection, impaired autonomy, and overvigilance/inhibition schema domains were spread over several octants.

A number of YSQ-SF scales were located relatively close to the center of the circumplex. In other words, they had low vector lengths or amplitudes, which is a measure of differentiation across the eight IIP-C scales. A high amplitude indicates a defined peak in the profile (Gurtman & Balakrishnan, 1998). Using Gurtman's (1991) criterion, five YSQ-SF scales (social isolation, self-sacrifice, subjugation, entitlement, and insufficient self-control) were strongly related to specific interpersonal tendencies. An interpretation of low differentiation may be that these EMSs are equally associated with different interpersonal coping strategies. However, low differentiation can also simply be the result of common variance due to distress or complaints (Horowitz *et al*., 1988).

Unfortunately, the design of the current investigation prevent us from concluding that the social isolation, self-sacrifice, subjugation, entitlement, and insufficient self-control schemas are associated with specific maladaptive interpersonal coping responses. Alternatively, it may be that interpersonal problems are partially inherent to the respective YSQ-SF scales. It has been noted that the YSQ items blend statements assessing cognitions and behaviors (Bhar, Beck, & Butler, 2012). To resolve this open question, future studies on the relationship between EMSs and maladaptive interpersonal coping should employ alternative assessment methods for EMSs. Another shortcoming of the current study related to the assessment of EMSs is the use of the YSQ-SF, which measures only 15 of the 18 EMSs described in the current schema list. The approval-seeking, negativity/pessimism, and punitiveness schemas are not covered by the YSQ-SF. Recently, forms of the YSQ (YSQ-L3, YSQ-S3) have been developed that include all 18 EMSs (Young, 2005). With regard to the participants of the current study, there is an overrepresentation of depression and anxiety disorders. Unfortunately, a structured assessment of personality disorders was not conducted for most participants. Given the existing prevalence data for psychiatric outpatients (Zimmerman, Rothschild, & Chelminski, 2005), it may seem that personality disorders were underdiagnosed in the present sample.

In conclusion, in line with ST theory, the present study demonstrated that EMSs and interpersonal problems are closely related. Results of circumplex analyses suggest that EMSs are associated with a broad range of maladaptive interpersonal behavior.

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Received, August 8, 2012
Final Acceptance, December 28, 2012