

Splitting of Associative Threads: The Expression of Schizotypal Ambivalence in Daily Life

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Abstract:

Ambivalence, which refers to the simultaneous experience of contradictory emotions and cognitions, has a longstanding and important role in the study of both normal and pathological functioning. Bleuler and Meehl viewed ambivalence as a central component of schizophrenic, and more broadly schizotypic, psychopathology. Ambivalence is associated with questionnaire and interview measures of schizotypic symptoms and impairment. However, its real-world expression has not been explored. The present study examined the expression of ambivalence, as assessed by the Schizotypal Ambivalence Scale, in daily life using experience sampling methodology. Specifically, it examined the association of ambivalence with affect, daily activities, and social and cognitive functioning in the moment. A sample of 430 male and female young adults completed an average of 42 daily life assessments during a one-week period. Ambivalence predicted diminished positive affect, increased negative affect, cognitive impairment, and social impairment. Furthermore, ambivalence moderated the effects of social closeness, emotional expression, and activity enjoyment on affect and functioning in daily life. Specifically, ambivalence was associated with affective dysregulation and greater reactivity to social stress. The present findings provided the first examination of the expression of ambivalence in daily life and support its inclusion as a component of schizophrenia-spectrum psychopathology.

Keywords: Schizotypal ambivalence | Experience sampling methodology | Schizotypy | Schizophrenia | Daily life

Article:

The present study examined the experience and expression of ambivalence in daily life using experience sampling methodology. Ambivalence has been described as a core feature of schizophrenia (e.g., Bleuler 1911/1950) and of schizotypy (e.g., Meehl 1962). However, the construct has been relatively understudied and its expression outside of traditional laboratory settings has not been examined. The present study builds on recent psychometric and laboratory

studies to examine the construct validity of ambivalence as assessed by the Schizotypal Ambivalence Scale.

Ambivalence, Schizotypy, and Schizophrenia

Bleuler (1911/1950) introduced ambivalence as one of the four core characteristics of schizophrenia. Specifically, he defined ambivalence as the tendency to make both positive and negative attributions to thoughts or feelings, such as simultaneously experiencing both love and hate for a person, an object, or a situation. Bleuler viewed ambivalence as a manifestation of thought disorder and an example of his concept of splitting of associative threads. Meehl (1962) applied Bleuler's definition of ambivalence to the construct of schizotypy. Although there is not a universally agreed upon definition of schizotypy, we use schizotypy to refer to a dynamic continuum of symptoms and impairment that expresses the underlying developmental vulnerability for schizophrenia (e.g., Claridge 1997; Kwapil and Barrantes-Vidal 2012; Lenzenweger 2010). To this extent, we view schizophrenia as the most severe manifestation of schizotypy. Meehl initially viewed ambivalence as central to schizotypy, although in later formulations he suggested that it had a secondary role in schizotypy as a potentiating factor (e.g., Meehl 1990). Despite its role in the descriptive psychopathology literature of schizotypy and schizophrenia, ambivalence has been surprisingly understudied by psychopathologists and the term has been more readily associated with psychoanalytic models—especially regarding borderline personality (e.g., Kernberg 1977; Kemp 2011).

Two main forms of ambivalence are distinguished in the literature (e.g. Conner and Sparks 2002; Stocker 1990): diachronic ambivalence, conceptualized as the fluctuation between opposing ideas, and synchronic ambivalence, conceptualized as the simultaneous experience of positive and negative attitudes. Diachronic ambivalence may be more common to borderline personality disorder and depression; Raulin therefore distinguished ambivalence characteristic of schizotypal thought from such back-and-forth thinking patterns by emphasizing the “simultaneous and antithetical” nature of ambivalent cognition experienced by schizotypic individuals (Raulin and Brenner 1993). It is suggested that this difficulty with successfully integrating one's feelings may be largely due to an inability to inhibit negative affect, even during the experience of positive emotions (Cohen et al. 2010; Horan et al. 2006). To measure this schizotypic-like trait of feeling simultaneous, contradictory emotions, Raulin (1986) created the Schizotypal Ambivalence Scale (SAS), a 19-item self-report questionnaire. The scale primarily taps synchronic ambivalence, or the inability to integrate one's thoughts and feelings, as described in Bleulerian thought disorder (1911/1950) characteristic of schizotypy and schizophrenia.

Several studies have examined the psychometric properties and concurrent validity of the SAS. Kwapil et al. (2002) reported evidence for good internal consistency reliability (coefficient alpha = .84) and showed that the SAS was associated with both questionnaire and interview measures of schizotypy. Specifically, the SAS significantly correlated with the Wisconsin Schizotypy Scales (Chapman et al. 1976, 1978; Eckblad and Chapman 1983; Eckblad et al. 1982) including the Perceptual Aberration ($r = .52$), Magical Ideation ($r = .47$), Revised Social Anhedonia ($r = .43$), and Physical Anhedonia ($r = .17$) Scales. It also was associated with interview-based ratings of psychotic-like experiences, schizotypal, schizoid, and paranoid personality traits, and impaired global functioning, but was not associated with major depressive

disorder or substance use ratings. Kwapil et al. (2002) also reported that the SAS accounted for variance in interview measures of psychotic-like and schizotypic symptoms over-and-above scores on the Perceptual Aberration and Magical Ideation Scales. Mann et al. (2008) corroborated these findings by showing that high SAS scorers exceeded control subjects on interview-based ratings of psychotic-like, negative, schizotypal, schizoid, and paranoid symptoms, and poorer overall functioning. Note that the SAS and control groups did not differ significantly on rates of mood episodes or ratings of substance use. Thus, Kwapil et al. and Mann et al. demonstrated that the SAS was associated with schizotypic symptoms and impairment, but not other forms of psychopathology. Loas et al. (2013) demonstrated the criterion validity of the scale by showing that first-degree relatives of patients with schizophrenia had higher SAS scores than first-degree relatives of patients with other psychiatric disorders (neurotic disorders, mood disorders, personality disorders, and substance-related disorders).

Kerns (2006) showed that individuals with heightened negative and disorganized symptom schizotypy reported elevated ambivalence on the SAS. Additionally, ambivalence scores were correlated with the Wisconsin Schizotypy Scales and the Schizotypal Personality Questionnaire (Raine 1991), with lack of emotional clarity and emotional attention, and with specific personality traits. An extension of this study found that disorganized schizotypy was associated with greater emotional ambivalence and neuroticism. Furthermore, ambivalence was associated with increased communication disturbances, but only for those individuals with elevated scores of disorganized schizotypy (Kerns and Becker 2008). These effects are found cross-culturally as well: SAS scores correlated significantly with the positive schizotypy scales and were shown to be one predictor of self-reported cognitive disturbances in a French undergraduate sample (Yon et al. 2009). In sum, ambivalence seems to be a characteristic feature of schizotypy and schizophrenia, and the SAS appears to be a promising measure for assessing the construct. Furthermore, the SAS appears to tap ambivalence associated with schizotypy, as opposed to mood disorders and other psychopathology. However, the assessment of ambivalence has been limited to laboratory settings and little is known about the expression of the construct in daily life.

Experience Sampling Methodology

Researchers have employed ESM to examine the experience and expression of psychological constructs in daily life (e.g., Oorschot et al. 2009). ESM is a within-day self-assessment technique in which participants are prompted at random intervals to complete brief questionnaires about their current experiences, including cognition, affect, social functioning, and other symptoms. ESM offers several powerful advantages to traditional assessment procedures (e.g., Conner, Tennen, Fleeson, and Barrett 2009; deVries et al. 1992; Hektner et al. 2007). Specifically, ESM (1) repeatedly assesses participants in their normal daily environment, thereby enhancing ecological validity, (2) assesses the participants' experiences at the time of the signal, thereby minimizing retrospective bias, and (3) allows for an examination of the context of participants' experiences. ESM measures exhibit good reliability, validity and internal consistency and provide a useful method for studying psychological phenomena outside the traditional (and artificial) confines of laboratory and clinical settings (Shrout and Lane 2012).

Researchers have increasingly used ESM to assess the daily life expression of schizotypy (e.g., Kwapil et al. 2012; Barrantes-Vidal et al. 2013), the psychosis prodrome (Palmier-Claus et al. 2012), and schizophrenia (e.g. Kimhy et al. 2010; Myin-Germeys et al. 2001). However, no study to date has employed ESM to examine the expression of ambivalence in schizotypy and its relation to affect, cognition, and social functioning in daily life.

Goals and Hypotheses

The goal of the present study was to provide further assessment of the construct validity of ambivalence as assessed by the SAS by examining its expression in daily life. We hypothesized that ambivalence would be associated with both direct effects in daily life and that it would moderate the association of experiences in the moment. In terms of direct effects, we hypothesized that ambivalence would predict elevated rates of negative affect and thought impairment, and diminished positive affect and enjoyment of activities in the moment. It was also hypothesized to predict social impairment, including lower likelihood of being with others, more social distance, and feelings of rejection.

ESM provides a unique opportunity to examine Raulin's contention that people high in schizotypal ambivalence simultaneously experience contradictory thoughts or feelings in the moment. Specifically, we computed cross level interactions to determine whether SAS scores moderated the association of such thoughts and feelings. We hypothesized that ambivalence would moderate the association of social closeness and desire to be alone, such that at high levels of social closeness, high schizotypal people would want to be alone more than low schizotypal people. We expected that ambivalence would moderate the association of social closeness and loneliness, such that at high levels of social closeness, high schizotypal people would feel lonelier than low schizotypal people. We also hypothesized that ambivalence would moderate emotional expression, such that at high levels of positive affect, people high in schizotypy would experience more negative affect than people low in schizotypy. Finally, we hypothesized that ambivalence would moderate the association between liking an activity and wanting to do something else, such that at high levels of liking an activity, high SAS scorers would want to do something else more than people low in ambivalence.

Methods

Participants

The study included 430 undergraduates (107 men and 323 women) enrolled at the UNC-Greensboro. Participants received course credit upon completion of the study. The composition of the sample was 71 % Caucasian, 26 % African American, and 3 % identifying themselves as another ethnicity. The mean age of participants was 20.0 ($SD = 3.8$).

Materials and Procedures

Participants completed the 19-item SAS during mass screening sessions. Example items include: "Very often when I feel like doing something, at the same time I don't feel like doing it" and "I doubt if I can ever be sure exactly what my true interests are." All participants completed the

Wisconsin Schizotypy Scales and a subset of 196 participants completed the Beck Depression Inventory (BDI; Beck et al. 1961).

Participants completed the ESM component of the study using personal digital assistants (PDAs) that were programmed to run iESP software (Intel 2004). Participants attended an information session at the beginning of the study to learn how to operate the PDA. The PDA signaled participants to complete the ESM questionnaire eight times daily between noon and midnight for one week. This 12-hour period was broken up into eight 1.5-hour blocks with participants receiving a signal randomly within each block. The questionnaire consisted of 36 items that inquired about affect, cognition, and social interaction at the time of the signal (Table 1 displays all items and indices used in the current study). Participants responded to most of the items using a 7-point scale that ranged from 1 (not at all) to 7 (very much). Two items (alone right now and the most important event involved other people) were scored dichotomously (yes/no).

- 1) My thoughts are clear right now
- 2) I have trouble concentrating right now
- 3) My thoughts are suspicious right now
- 4) I feel happy right now
- 5) I feel uncertain right now
- 6) I feel lonely right now
- 7) I feel relaxed right now
- 8) I feel guilty right now
- 9) I feel satisfied right now
- 10) I feel anxious right now
- 11) I feel sad right now
- 12) I feel enthusiastic right now
- 13) I like what I am doing right now
- 14) It takes a lot of effort to do this activity
- 15) I have the ability to do this activity
- 16) I would prefer to do something else right now
- 17) I feel tired right now
- 18) I don't feel well right now
- 19) Are you alone at this time? (1 = yes, 2 = no)
- 20) I like this person (these people)
- 21) My time with this person (these people) is important to me.
- 22) We are interacting together
- 23) I feel close to this person (these people)
- 24) Right now I would prefer to be alone (when with others)
- 25) Right now I enjoy being alone
- 26) Being alone right now is my choice
- 27) I am alone right now because people do not want to be with me
- 28) Right now I would prefer to be with other people (when alone)
- 29) Since the last beep, the most important thing that happened to me was pleasant
- 30) The most important thing that happened to me involved being with other people (1 = yes, 2 = no)

Table 1. Experience-sampling methodology questionnaire and summary indices. Note: all questions answered from 1 (not at all) to 7 (very much), unless otherwise noted

Positive affect index is the mean of items 4, 7, 9, and 12 (coefficient alpha = .89)
Negative affect index is the mean of items 5, 6, 8, 10, and 11 (coefficient alpha = .90)
Thought impairment index is the mean of items 1 and 2 (coefficient alpha = .79)
Social distance index is the mean of items 20 reversed, 21 reversed, 22 reversed, 23 reversed,
and 24 (coefficient alpha = .91)

Each questionnaire required approximately two minutes to answer. Once participants finished each questionnaire, the PDA would shut off and become inactive until the next signal. During the course of the 7-day experiment, participants were required to return to the laboratory three times to download their data from the PDA to a computer. This was done in order to minimize data loss and increase compliance.

Results

The mean SAS score for the current sample was 6.95 ($SD = 4.62$, range 0–19). The distribution of scores was continuous and covered the entire range. Coefficient alpha internal consistency reliability of the SAS in this sample was .86. Participants completed an average of 41.7 ESM questionnaires during the course of the week ($SD = 10.9$). The SAS correlated significantly ($p < .001$) with the positive schizotypy index ($r = .60$) and negative schizotypy index ($r = .51$) computed from the Wisconsin Schizotypy Scales in the full sample, and with the BDI in the subsample ($r = .62$).

Analytic Model

ESM data have a hierarchical structure in which participants' daily life ratings (level 1, within-person data) are nested within participants (level 2, between-person data). Multilevel modeling provides an appropriate method for analyzing this type of data (Bolger and Laurenceau 2013; Nezlek 2001). We tested our hypotheses using two types of models. Direct effects examined the prediction of daily life events (level 1 ESM data) by scores on the SAS (level 2 data). In other words, these analyses examined whether schizotypal ambivalence predicted experiences such as positive affect in daily life. Cross-level interactions assessed whether the association of experiences in daily life (e.g., positive affect and negative affect) was predicted by SAS scores. Thus these analyses examined whether SAS scores moderated the association of ESM predictors and criteria measured simultaneously. The coefficients produced by these analyses are analogous to the unstandardized regression weight of the between-person predictor (SAS) with the within-person measures (ESM questions); thus, they are not directly comparable. The analyses were conducted using Mplus 6.1 (Muthen and Muthen 2010). Within-person level predictors were centered at each person's mean and SAS scores were centered at the sample's grand mean (Luke 2004). Parameter estimates were calculated using maximum likelihood estimation with robust standard errors.

Direct Effects of Ambivalence in Daily Life

Table 2 displays the relationship between SAS scores and daily life experiences. SAS scores were negatively related to an aggregate score of positive affect (consisting of four questions that assessed feelings of happiness, relaxation, satisfaction, and enthusiasm). Conversely, SAS scores

were positively related to an aggregate score of negative affect (consisting of five questions measuring levels of uncertainty, loneliness, feelings of guilt, anxiety, and sadness.) Furthermore, SAS scores were associated with the variance of participants' positive affect, $r = .13$, $p < .01$, and negative affect, $r = .30$, $p < .001$ (i.e., participants with higher SAS scores exhibited greater variance in their positive and negative affect ratings during the week). Regarding cognition, SAS scores were positively related to an aggregate score of thought impairment (consisting of two questions that measured lack of concentration and clarity in thoughts). SAS scores were also positively associated with suspicious thoughts at the moment.

Level 1 (ESM daily life) criterion	Level 2 predictor SAS Scores γ_{01} ($df=427$)
<hr/>	
Affect in the moment	
Positive affect index	-0.052 ($SE=0.008$)*
Negative affect index	0.073 ($SE=0.045$)*
Cognition	
Thought impairment index	0.067 ($SE=0.01$)*
My thoughts are suspicious right now	0.053 ($SE=0.009$)*
Current activities	
I like what I am doing right now	-0.038 ($SE=0.007$)*
It takes a lot of effort to do this activity	0.010 ($SE=0.205$)
I have the ability to do this activity	-0.022 ($SE=0.007$)*
I would prefer to do something else right now	0.037 ($SE=0.008$)*
I feel tired right now	0.049 ($SE=0.011$)*
I don't feel well right now	0.065 ($SE=0.013$)*
Are you alone at this time?	0.039 ($SE=0.009$)*
The most important thing that happened to me was pleasant	-0.051 ($SE=0.009$)*
The most important thing that happened involved other people	-0.031 ($SE=0.012$)*
Social functioning - when with others	
Social distance index	0.043 ($SE=0.008$)*
Social functioning - when alone	
Right now I enjoy being alone	-0.010 ($SE=0.011$)
Being alone right now is my choice	-0.011 ($SE=0.012$)
I am alone right now because people do not want to be with me	0.041 ($SE=0.009$)*
Right now I would prefer to be with other people	0.001 ($SE=0.012$)

Table 2. Relationship of SAS scores with daily life criterion

Values are raw multilevel regression coefficients indicating the relationship of the level 2 predictor with the level 1 (daily life experience) criteria

* $p < .001$

Positive affect index includes items measuring: happiness, relaxation, satisfaction, and enthusiasm

Negative Affect Index includes items measuring: uncertainty, loneliness, feelings of guilt, anxiety, and sadness

Thought Impairment Index includes items measuring: lack of concentration and clarity in thoughts

Social Distance Index includes items measuring: dislike, unimportance of time spent with people, lack of interaction, distant feelings, and desire to be alone when with others

In regards to current activities, higher SAS scores were associated with liking current activities less. Furthermore, higher SAS scores were related to feeling unable to perform the current activity, wanting to do something else at the time, feeling tired, and not feeling well at the moment. SAS scores were negatively associated with feeling that the most important event since the last beep was pleasant. Despite these negative associations, SAS scores were not related with feeling that it took a lot of effort to perform the current activity. Higher SAS scores were also related to more reports of being alone, and negatively associated with the declaration that the most important event since the last beep involved other people.

When with others, levels of SAS predicted greater social distance (an aggregate score composed of dislike, unimportance of time spent with people, lack of interaction, distant feelings, and desire to be alone when with others). In addition, SAS scores were related to the feeling that one was alone due to rejection by others. However, SAS scores were unrelated to feelings of enjoyment when alone, preference for being alone, and preference to be with other people when alone.

Cross-Level Interactions

Table 3 presents cross-level interactions examining the moderating effects of SAS scores on the relationship between daily life measures. Note that the level 2 coefficients indicate the cross-level interaction – that is, the extent to which level 2 SAS scores predict the within person slope of the level 1 ESM predictor and ESM criterion. Not surprisingly, higher levels of positive affect were associated with lower levels of negative affect in the moment. However, as seen in Fig. 1, a cross-level interaction indicated that participants with higher SAS scores experienced a greater increase in negative affect as positive affect decreased, over-and-above the main effect of SAS scores with negative affect.

Level 1 (ESM daily life) criterion	Level 1 (ESM daily life) predictor	γ_{10} (df=426)	Level 2 predictor SAS scores γ_{11} (df=426)
Affect in the moment			
Negative affect index	Positive affect index	-0.337 (SE=0.012)***	-0.007 (SE=0.003)*
Social functioning – when with others			
Right now I would prefer to be alone	I feel close to this person (these people)	-0.359 (SE=0.014)***	-0.014 (SE=0.003)***
I feel lonely right now	I feel close to this person (these people)	-0.084 (SE=0.008)***	-0.009 (SE=0.002)***
Current activities			
I would prefer to do something else	I like what I am doing right now	-0.677 (SE=0.013)***	0.011 (SE=0.003)***

Table 3. Cross-level interactions of sas scores with daily life experiences

Values are raw multilevel regression coefficients indicating the relationship of the level 1 predictors with the level 1 (daily life experience) criteria and cross-level interaction of the level 2 predictors with the slope of the level 1 variables

* $p < .05$
** $p < .01$
*** $p < .001$

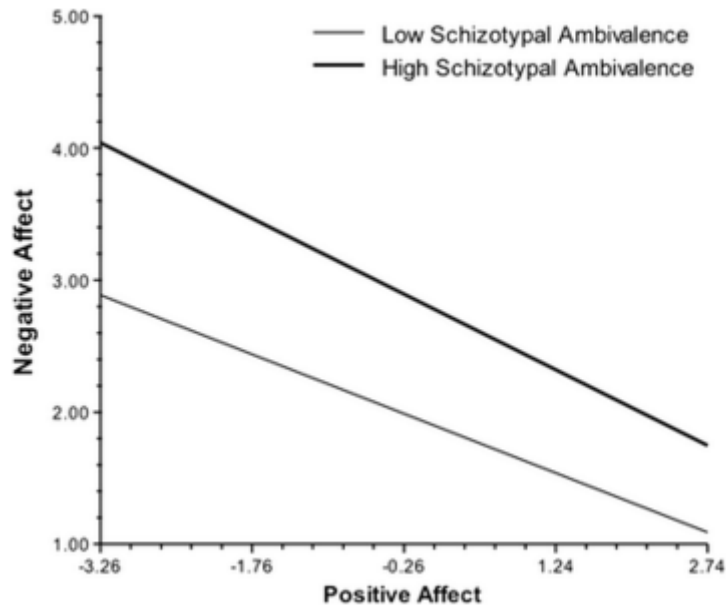


Figure 1. Cross level interaction of SAS scores with positive affect and negative affect

Next, we examined the degree to which ambivalence moderated the relations among measures of social functioning in the moment. Overall, participants' feeling of social closeness was negatively associated with both the desire to be alone and with loneliness in the moment. Ambivalence moderated both relationships. First, compared to participants with low SAS scores, those with high SAS scores displayed increasing feelings of loneliness as closeness with others diminished (Fig. 2). Unlike high SAS scorers, those with low SAS scores did not report feeling lonely while with others, regardless of whether or not they felt close to them. Similarly, high SAS subjects showed a stronger inverse association between social closeness and preference to be alone in the moment than did low SAS subjects (Fig. 3).

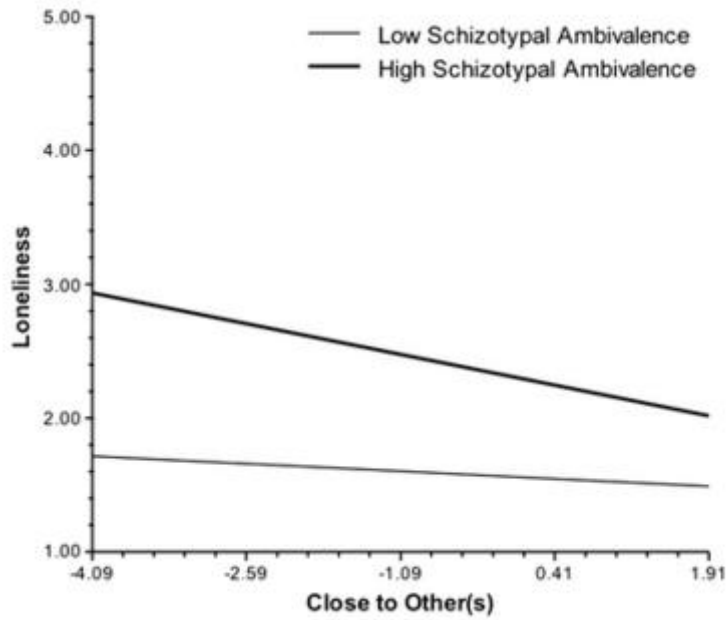


Figure 2. Cross level interaction of SAS scores with felt closeness towards others and loneliness

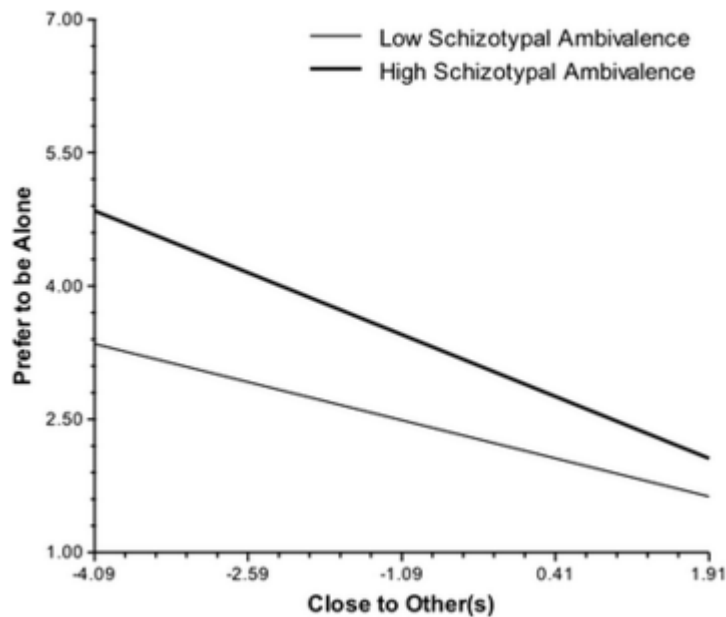


Figure 3. Cross level interaction of SAS scores with felt closeness towards others and preference to be alone

Finally, we examined whether ambivalence moderated the relationship of liking one's current activity and preference for other activities. Not surprisingly, a main effect emerged demonstrating that the more participants liked what they were currently doing, the less they wanted to do something else. A significant cross-level interaction indicated that at high levels of

liking the current activity, low SAS participants were less likely to prefer another activity than high SAS participants (Fig. 4).

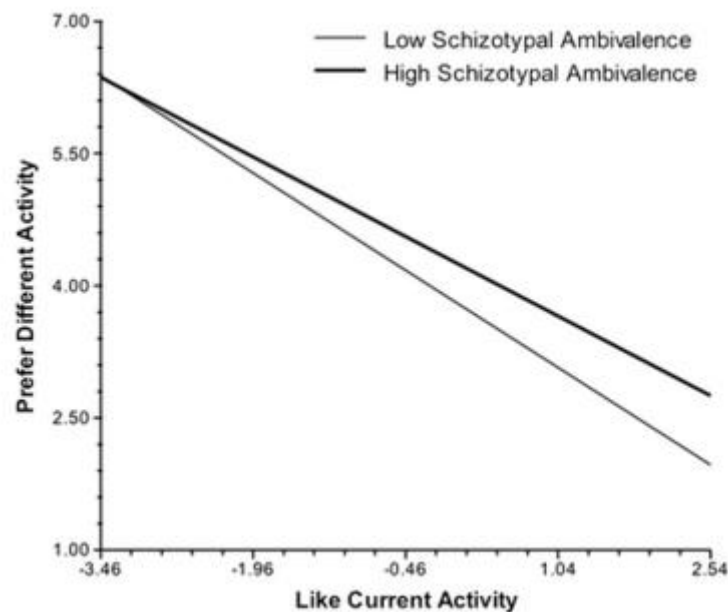


Figure 4. Cross level interaction of SAS scores with liking of current activity and preference towards another activity

Schizotypal Ambivalence and Depressive Symptoms

Following the recommendations of a reviewer, we examined the effects of the SAS over-and-above the effects of depressive symptoms. Unfortunately our sample size was diminished considerably as only 196 participants of our total sample of 430 had completed both the SAS and BDI. However, after partialling out variance associated with BDI scores, SAS scores continued to account for variance in a number of daily level outcome variables. Specifically, SAS scores continued to account for higher levels of negative affect (assessed by our Negative Affect Index). SAS scores also continued to be positively related with negative feelings in the moment, incidence of being alone, and the index of social distance. In addition, SAS scores continued to negatively relate to feeling that the most important thing that happened was pleasant and the most important thing happened involved being with others.

Discussion

The present study employed ESM to examine the daily life expression of ambivalence in schizotypy. By its very nature, ambivalence is presumed to be a dynamic condition in which people experience conflicting cognitions and emotions. ESM provides an appropriate method for capturing the experience of contradictory and fluctuating experiences. Specifically, ESM allows us to examine the simultaneous experience of emotions, such as positive and negative affect, which have been empirically shown to be separate, albeit inversely related, constructs (e.g., Norris et al. 2010; Larsen and McGraw 2011). Furthermore, it allows us to examine these

experiences across time and contexts, in contrast to the static nature of traditional laboratory and clinical assessments.

The present findings provide support for the validity of the SAS as a measure of ambivalence in individuals with non-clinical schizotypy. Overall, participants with higher SAS scores reported reduced positive affect and social functioning. High SAS scores also predicted greater negative affect, cognitive impairment, suspicion, and dislike of current activities. Furthermore, SAS scores predicted affect and social functioning in daily life above and beyond depressive symptoms, supporting previous findings (Kwapil et al. 2002; Loas et al. 2013; Mann et al. 2008) of diagnostic specificity.

SAS scores predicted emotional ambivalence in daily life: high SAS participants reported elevated levels of negative affect compared to their low ambivalent peers, even when experiencing high levels of positive affect. This finding is consistent with behavioral studies of ambivalence in the laboratory, which show that patients with schizophrenia experience unpleasant emotions even in response to pleasant stimuli (e.g. Cohen and Minor 2008; Horan et al. 2006; Trémeau et al. 2009). High SAS individuals also experienced more rapid increases in negative affect as positive affect diminished, as compared to low SAS individuals. In addition, participants with high SAS scores were more likely to prefer a different activity even when their liking for the current activity increased compared with their low SAS peers. Higher SAS levels were also associated with greater reactivity in social situations: those with high SAS levels showed a greater preference to be alone and greater feelings of loneliness when with others. When with others they do not feel close to, these desires and feelings were more amplified in high ambivalence individuals than in low ambivalence individuals, indicating greater reactivity to social stress. Greater variance in emotion and greater social reactivity are indicative of overall instability and neuroticism, traits shown to be associated with positive schizotypy (e.g. Barrantes-Vidal et al. 2009; Myin-Germeys et al. 2005).

Previous studies have indicated that the SAS is associated with interview and questionnaire measures of schizotypy. Despite the fact that the SAS items focus almost exclusively on difficulty integrating contradictory emotions and cognitions, elevated scores on the scale were significantly associated with interview measures of positive symptoms of schizotypy (e.g., psychotic-like and schizotypal symptoms) and negative/schizoid symptoms in non-clinically ascertained young adults. The present ESM findings for the SAS largely parallel the ESM findings for positive and negative schizotypy (e.g., Barrantes-Vidal et al. 2013; Kwapil et al. 2012). These findings, along with the SAS's associations with both positive and negative schizotypy indices from the Wisconsin Schizotypy Scales, suggest that ambivalence is broadly related to schizotypy and not uniquely part of either the positive or negative schizotypy dimension. It also supports Bleuler's original contention that ambivalence is a component of schizophrenia-spectrum psychopathology.

This study demonstrates the effectiveness of ESM for daily life assessment. Previously, the correlates of ambivalence had only been examined in laboratory situations using one-time personality measures. This study examined participants at multiple points throughout the day and thus was able to assess participants' thoughts and feelings in various social contexts. To this extent, we were able to better assess the social functioning of those with higher levels of

ambivalence and determine when they display maladaptive behavior. The current findings build upon previous studies (Kwapil et al. 2002; Mann et al. 2008) to strengthen the construct validity of the SAS as a measure of ambivalence in schizotypy, as demonstrated by the association of the scale with the experience of ambivalent thoughts and feelings in daily life.

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Conflict of Interest

Chris J. Burgin declares that there is no conflict of interest, Charlotte A. Chun declares that there is no conflict of interest, Leslie E. Horton declares that there is no conflict of interest, Neus Barrantes-Vidal declares that there is no conflict of interest, Thomas R. Kwapil declares that there is no conflict of interest.

Experiment Participants

All participants completed an informed consent before participating and the experiment was in compliance with ethical standards set forth by the IRB.

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