Published in final edited form as:

Cogn Emot. 2016 April ; 30(3): 550–560. doi:10.1080/02699931.2015.1010488.

Information Processing Biases Concurrently and Prospectively Predict Depressive Symptoms in Adolescents: Evidence from a Self-Referent Encoding Task

Samantha L. Connolly^a, Lyn Y. Abramson^b, and Lauren B. Alloy^a

^aDepartment of Psychology, Temple University, Philadelphia, PA

^bDepartment of Psychology, University of Wisconsin-Madison, Madison, WI

Abstract

Negative information processing biases have been hypothesized to serve as precursors for the development of depression. The current study examined negative self-referent information processing and depressive symptoms in a community sample of adolescents ($N = 291$, M_{age} at baseline = 12.34 ± 0.61 , 53% female, 47.4% African American, 49.5% Caucasian and 3.1% Biracial). Participants completed a computerized self-referent encoding task (SRET) and a measure of depressive symptoms at baseline and completed an additional measure of depressive symptoms nine months later. Several negative information processing biases on the SRET were associated with concurrent depressive symptoms and predicted increases in depressive symptoms at follow-up. Findings partially support the hypothesis that negative information processing biases are associated with depressive symptoms in a nonclinical sample of adolescents, and provide preliminary evidence that these biases prospectively predict increases in depressive symptoms.

Keywords

depression; information processing biases; self-referential processing; adolescence

A growing body of research has aimed to identify vulnerability factors for depression that exist during adolescence, given that rates of major depressive disorder (MDD) dramatically increase during this developmental period (Hankin et al., 1998; Kessler, Avenevoli, & Merikangas, 2001). Specifically, information processing biases, involving increased attention to or memory for negative information, have been implicated as a potential risk factor. Information processing biases may be likely to emerge during adolescence, as this period is associated with further maturation of cognitive abilities (Jacobs, Reinecke, Gollan, & Kane, 2008). Indeed, the cognitive skills involved in information processing biases, such as attention, processing speed, and memory, have been shown to increase during this developmental period. Therefore, adolescence may mark a crucial point in the life course when information processing biases begin to consolidate and become risk factors for

Corresponding author. Samantha L. Connolly, Department of Psychology, Temple University, 1701 North 13th Street, Philadelphia, PA 19122, United States. Tel: (215) 204-6852. Fax: (215) 204-5539. samantha.connolly@temple.edu.

The authors declare no conflict of interest.

depression (Jacobs et al., 2008). Research probing these maladaptive cognitive biases in relation to depressive symptoms within nonclinical samples of adolescents is necessary, as it has been found that subsyndromal depressive symptoms are predictive of future major depressive episodes (van Lang, Ferdinand, & Verhulst, 2007). Gaining a better understanding of information processing biases as potential risk factors will ideally inform depression prevention and intervention during this important period of development.

A wealth of studies have linked negative information processing biases to depressive symptoms in adults (see Mathews & MacLeod, 2005 and Gotlib & Joormann, 2010 for reviews), and a growing literature has reported such relationships in children and adolescents, employing paradigms such as attentional dot-probe, Stroop, and self-referent encoding tasks that assess factors including the speed and degree of attention allocated toward negative stimuli and the accuracy of recall of negative information (see Jacobs et al., 2008 for a review). Some longitudinal studies have found that information processing biases predict increases in depressive symptoms over time in adults, providing stronger evidence that information processing biases exist as risk factors for the development of depression (Beevers & Carver, 2003; Johnson, Joormann, & Gotlib, 2007; Reilly-Harrington, Alloy, Fresco, & Whitehouse, 1999). However, longitudinal designs in adolescent samples are rare, as are studies employing nonclinical samples in order to test the role of information processing biases as risk factors for the onset of depressive symptoms, highlighting necessary areas of further research (Black & Pössel, 2013; Hammen, 1988; Jacobs et al., 2008).

A particular subset of information processing biases associated with depression involve the preferential processing of negative self-referent information, as assessed using the Self-Referent Encoding Task (SRET; Derry & Kuiper, 1981; Hammen & Zupan, 1984). As negative descriptors are thought to be more congruent with depressed or cognitively vulnerable individuals' negative self-schemas, they are hypothesized to be processed more efficiently, encoded more deeply, and therefore better retrieved (Derry & Kuiper, 1981; Hammen & Zupan, 1984; Jaenicke et al., 1987; Rogers et al., 1977). The SRET was developed to test this hypothesis by presenting individuals with positive and negative adjectives and asking them to judge whether these words are self-descriptive. After this endorsement phase, participants complete an incidental free recall exercise in which they remember as many adjectives as they can from the task. Depressed or cognitively vulnerable individuals are hypothesized to display increased endorsement and encoding of negative self-referent adjectives, resulting in improved subsequent recall of these words. Conversely, positive adjectives should be less congruent with depressive schemas, and would therefore be less frequently endorsed and recalled.

Studies of depressed adults and youth have reported findings of increased negative adjective endorsement and recall and decreased positive adjective endorsement and recall (Dozois & Dobson, 2001; Gençöz, Voelz, Gençöz, Pettit, & Joiner, 2001; Hammen & Zupan, 1984, Fritzsche et al., 2010). A subset of SRET studies also have explored the efficiency with which individuals process schema-congruent information by measuring the speed with which individuals make endorsements on the SRET, positing that judgments congruent with one's schema should be made more quickly and efficiently than those that are less central to

one's self-concept (Kuiper & MacDonald, 1982). Indeed, some studies have found that depressed individuals respond more slowly when endorsing positive self-referent adjectives, as these words are thought to be incongruent with their self-schemas (Kuiper & MacDonald, 1982). Similarly, depressed participants were found to take longer to judge negative adjectives as *not* being self-referent compared to non-depressed controls (MacDonald & Kuiper, 1985).

Non-depressed adults with more negative inferential styles, shown to be at risk for developing major depression (Alloy et al., 2006), also have been found to display negatively biased adjective endorsement and recall on the SRET (Alloy et al., 1997). These cognitively vulnerable adults also displayed significantly slower response times (RTs) when endorsing positive self-referent words and rejecting negative words as not being self-descriptive (Alloy et al., 1997). These findings suggest that possessing a negative inferential style is linked to biased processing and memory for negative self-referent information, even among individuals without diagnoses of depression, further supporting the role of these biases as risk factors for the disorder. Only one study to our knowledge has tested for associations between SRET performance and depressive symptoms in a community sample of adolescents, finding that biases on the SRET, in interaction with rumination, predicted increases in depressive symptoms (Black & Pössel, 2013). No study has yet to demonstrate a direct relationship between SRET performance and depressive symptoms, whether concurrently or prospectively, in a community sample of adolescents. Indeed, it is possible that negative self-referent information processing biases may serve as vulnerability factors for increased depressive symptoms within a nonclinical sample at this important age of risk.

Hypotheses

The current study tested this hypothesis, employing a longitudinal design to examine the relationship between self-referent information processing biases and the development of depressive symptoms within a nonclinical sample of adolescents. We hypothesized that SRET variables would 1) be associated with concurrent depressive symptoms and 2) prospectively predict depressive symptoms. Previous concurrent analyses conducted with a smaller subset of the current sample found that depressive symptoms were positively correlated with endorsement of negative self-referent adjectives, and negatively correlated with positive self-referent adjective endorsement; however, no recall or RT variables were significantly related to self-reported depressive symptoms (Alloy et al., 2012). Therefore, additional aims of the current research were to 1) employ alternate calculations of RT and recall on the SRET that may better isolate negative self-referent information processing biases and may, in turn, display relationships with depressive symptoms, and 2) extend these findings by exploring the effects of SRET performance as predictors of future depressive symptoms.

Method

Participants and Procedure

The current sample is derived from the Temple University Adolescent Cognition and Emotion (ACE) Project, a prospective longitudinal study of the emergence of depression in

adolescence (Alloy et al., 2012). Here we report how we determined our sample size, all data exclusions, and measures assessed. Adolescents and their primary female caregivers (91% were adolescents' biological mothers) were recruited from the Philadelphia School District (PSD) and other Philadelphia area public and private middle schools. Two recruitment methods were utilized. First, with the permission of the PSD, letters were mailed to the parents of African American and Caucasian male and female students, ages 12 and 13. Project staff members then made follow-up phone calls inviting families to participate. Second, study advertisements were placed in Philadelphia area newspapers, allowing parents to call and express interest in participating. Prior to inclusion in the study, phone screening interviews were completed to ensure eligibility. Eligible adolescents were 12 or 13 years old and self-identified as Caucasian, African American, or Biracial. Adolescents' primary female caregivers had to be willing to participate. Families were excluded if the adolescent and/or caregiver did not read or speak English well enough to complete study tasks, or if either the adolescent or caregiver had a severe psychiatric, developmental, medical, or learning disorder that would prevent adequate study participation.

Eligible mothers and adolescents were invited to complete the Time 1 assessment (T1). Prior to T1, written informed consent was obtained from mothers and written assent was obtained from adolescents. Mothers then completed a demographic questionnaire and adolescents completed a self-report measure of depressive symptoms (Children's Depression Inventory, CDI; Kovacs, 1992) in addition to a behavioral task assessing self-referent information processing biases (Self-Referent Encoding Task, SRET; Derry & Kuiper, 1981, Hammen & Zupan, 1984). Adolescents then completed the CDI again during a follow-up assessment (T2). Mothers and adolescents were reimbursed for their participation after each assessment.

Four hundred ninety-four adolescents completed the SRET at the T1 assessment; as data collection is ongoing, the current study includes the 291 adolescents (M age at baseline = 12.34 years old $\pm$ 0.61) who completed the T1 assessment as well as at least one follow-up assessment to date (M time to follow-up = 9.63 months $\pm$ 3.89, range = 4.43 months to 33.5 months). The study sample was 53% female, 47.4% African American, 49.5% Caucasian, and 3.1% Biracial. Participants varied in socioeconomic status; 23.9% had annual family incomes below \$30,000, 46.8% had incomes between \$30,000 and \$75,000, and 29.3% reported incomes above \$75,000. In addition, 45.9% of adolescents in the sample qualified for a subsidized school lunch, a measure of financial need that accounts for the number of dependents being supported by a given family income.

Measures

Children's Depression Inventory (CDI; Kovacs, 1992)—The CDI is a 27-item self-report measure of depressive symptoms experienced during the past two weeks, designed for youth ages seven to 17. Ratings range from zero to two for each question and are summed to create a total score ranging from zero to 54, with higher scores indicating higher depressive symptom levels. The CDI has demonstrated good reliability and validity (Klein, Dougherty, & Olino, 2005) and displayed a coefficient alpha of .85 in the current study, indicating strong internal consistency. Given that this instrument is not intended to provide depression

diagnoses, current findings involving the CDI will refer to the presence of depressive symptoms, and not of depressive disorders.

Self-Referent Encoding Task (SRET; Derry & Kuiper, 1981; Hammen & Zupan, 1984)—The SRET, adapted in computerized form for this study, is a behavioral measure of self-referent information processing biases that assesses judgments of self-descriptiveness, response latencies, and free recall of emotionally-valenced stimuli. In a given trial, an adjective appears on a computer screen above a question prompting participants to make either a self-referent ("Like Me?") or structural ("Has an 'E'?") judgment, in which they must indicate whether the given word describes them or contains the letter "E". Self-referent trials will be referred to as "Me" trials, and structural trials will be called "E" trials. Adolescents responded by pressing labeled "Yes" or "No" keys on a computer keyboard. The SRET included 22 positive (e.g., happy, attractive) and 22 negative (e.g., awful, lonely) adjectives, divided evenly between the self-referent and structural conditions so that each valence/judgment pairing (e.g., positive adjectives/self-referent judgments) contained 11 words. The positive and negative adjectives were matched on word length and word frequency. Adjectives were presented in random order. Participants were given up to 8000 ms to respond per trial, and the task advanced to the next trial immediately following keypress. The adolescent's judgments (Yes or No) and response times (RTs) for each trial were recorded. Immediately after completing the judgment portion of the SRET, adolescents were administered an incidental free recall test in which they were allotted up to five minutes to verbally recall as many adjectives as they could from the computer task as researchers recorded their responses. The SRET was programmed using E-Prime software.

The total number of negative and positive self-referent adjectives endorsed was considered a measure of individuals' self-concept; it should be noted that these endorsement variables are not considered a measure of information processing bias, and therefore were not included in primary analyses. Information processing biases were assessed through RT and recall performance. Four RT variables were calculated to examine average RT when responding 1) Yes to a negative Me trial, 2) No to a negative Me trial, 3) Yes to a positive Me trial, and 4) No to a positive Me trial. In order to control for overall differences in RT between individuals, and to better target performance on self-referent trials, difference scores were calculated in which a participant's average time to respond Yes or No on the complementary structural trial was first subtracted from the four self-referent trial variables stated above; this difference score was then divided by the participant's average RT across all trial types. For example, the Negative Me Yes RT variable was calculated as: $[(\text{participant's average RT for Negative Me Yes trials} - \text{participant's average RT for Negative E Yes trials}) / \text{participant's average RT across all trial types}]$. The recall variables were calculated as the total number of either negative or positive self-referent adjectives initially endorsed and subsequently recalled, divided by the total number of positive and negative words endorsed and recalled across both the self-referent and structural conditions. For example, a negative recall proportion of .50 would indicate that half of all words that an individual endorsed and subsequently recalled were negative self-referent adjectives. This method of calculating recall proportions is similar to that employed in previous SRET studies (Fritzsche et al., 2010; Gotlib et al., 2004; Joormann et al., 2006), and accounts for the phenomenon in which

individuals better remember words that they endorsed, as this may lead to deeper encoding (Craik & Tulving, 1975). It also allows for a differentiation of self-referent recall from the recall of words encoded in the structural condition.

Results

Descriptive Statistics and Correlations for Main Study Variables

There was no difference in T1 SRET performance between participants who completed the T2 assessment to date and those who did not ($t_s < 1.71$, $ps > .09$); however, those who did not complete the T2 assessment had significantly greater depressive symptoms at T1 as measured by the CDI ($t(492) = 2.01$, $p < .05$). Table 1 presents the means, standard deviations, and correlations for the main study variables. T1 CDI scores ranged from 0 to 42; T2 CDI scores ranged from 0 to 30. At T1, 13.7% of the sample had a CDI score of 13 or above, and at T2 9.3% of the sample fell in this range, which has been proposed as a potential cut-off to indicate the presence of at least mild depression (Kovacs, 1992). Number of negative adjectives endorsed as self-descriptive displayed the expected correlations with depressive symptoms at both timepoints, in that those with greater reported depressive symptoms endorsed more negative Me adjectives during the SRET ($rs > .19$, $ps < .01$). Conversely, depressive symptom scores were correlated with decreased endorsement of positive Me adjectives ($rs > |-.14|$, $ps < .05$). Whereas all participants judged a minimum of three positive adjectives as being self-descriptive during the SRET, a considerable portion of the sample did not endorse any negative adjectives as being self-descriptive ($N = 78$, 26.8% of sample). Individuals who did not endorse any negative Me adjectives reported significantly lower depressive symptom scores ($t(289) > |-3.59|$, $ps < .001$); they also were more likely to be female ($\chi^2(1, N = 291) = 5.35$, $p < .05$). These participants could not be included in calculations of the average RT when endorsing a negative self-referent adjective, given that they did not endorse any words within this category. In addition, negative recall proportion scores could not be calculated for these participants, as this variable assesses the number of negative self-referent words endorsed during the task that were subsequently recalled. Similarly, 125 participants (43.0% of sample) did not reject any positive self-referent adjectives during the task; therefore, the average RT for these trials could not be calculated for these participants. Participants who did not reject any positive Me adjectives had significantly lower depressive symptom scores ($t(289) > |-2.38|$, $ps < .05$).

Concurrent relationships between depressive symptoms and information processing bias variables were then assessed (Hypothesis 1). T1 and T2 CDI scores were significantly correlated with slower RTs when deciding that a negative adjective was *not* self-descriptive (Negative Me No RT: $rs > .16$, $ps < .01$). Regarding recall, T1 and T2 CDI scores were significantly correlated with an increased proportional recall of negative adjectives that were judged to be self-referent ($rs > .27$, $ps < .001$). Conversely, T1 and T2 CDI scores also were correlated with a decreased proportional recall of positive adjectives initially endorsed as being self-referent ($rs > |-.14|$, $ps < .05$) (See Table 1).

Prospective Regression Analyses

This set of regressions tested SRET variables as predictors of depressive symptoms at follow-up (Hypothesis 2). T2 depressive symptom score (CDI) served as the dependent variable, and T1 CDI was included as a covariate in order to examine predictors of change in symptoms. Time between sessions marginally predicted greater increases in depressive symptoms at follow-up ($\beta = .08$, $F(2,288) = 72.00$, R^2 change = .01, $t = 1.68$, $p = .09$) and also was controlled for in the analyses. Change in CDI at follow-up was not found to significantly differ based on participants' age at T1, gender, race, or free lunch eligibility, and therefore these variables were not included as covariates in the regression models. T1 CDI and time elapsed between T1 and T2 were entered in Step 1. SRET variables were entered in Step 2 in separate regression equations (See Table 2). Step 2 assessed the ability of T1 SRET performance to predict change in depressive symptoms at follow-up. For RT, being slower to judge negative adjectives as *not* being self-descriptive significantly predicted increased depressive symptoms at follow-up ($\beta = .11$, $F(3,285) = 39.91$, R^2 change = .01, $t = 2.22$, $p < .05$). For recall, remembering a lower proportion of previously endorsed positive self-referent adjectives significantly predicted increases in depressive symptoms at T2 ($\beta = -.11$, $F(3,281) = 49.81$, R^2 change = .01, $t = -2.15$, $p < .05$).

Discussion

The current study employed a longitudinal design to examine self-referent information processing biases as risk factors for the development of depressive symptoms within a nonclinical sample of adolescents. Self-referent information processing biases were assessed using a computerized self-referent encoding task (SRET) that captures the processing of and memory for negative and positive self-referent information by measuring participants' response times (RTs) when deciding whether or not a positive or negative adjective is self-descriptive, and then assessing their subsequent recall of the words they had endorsed (Derry & Kuiper, 1981; Hammen & Zupan, 1984). The present study tested two main hypotheses that 1) SRET variables would be associated with concurrent depressive symptoms, and 2) SRET variables would prospectively predict depressive symptoms. Both hypotheses were partially supported.

Regarding Hypothesis 1, depressive symptoms were found to be concurrently associated with more efficient processing (RT when making self-referent judgments) and biased memory (recall of self-referent adjectives) for negative self-referent information on the SRET. More specifically, higher depressive symptoms were significantly correlated with slower RTs when judging negative adjectives as *not* being self-descriptive. It has been hypothesized that it would take individuals with negative self-schemas longer to reject a negative self-referent adjective, as such a judgment would be considered more incongruent with their self-concept; this finding has been reported in both depressed (MacDonald & Kuiper, 1985) and cognitively vulnerable (Alloy et al., 1997) adults. Depressive symptoms also were correlated with increased proportional recall of endorsed negative self-referent adjectives, and decreased recall of endorsed positive self-referent adjectives. These results complement hypotheses that individuals with negative self-schemas would encode negative self-referent information more deeply and in turn recall this information to a greater extent

than positive self-referent information; findings are similar to those reported in studies assessing SRET performance in dysphoric or clinically depressed samples of adults (Dozois & Dobson, 2001; Fritzsche et al., 2010; Gotlib et al., 2004) and youth (Gençöz et al., 2001; Hammen & Zupan, 1984). Of note, this is the first study to report concurrent associations between depressive symptoms and RT and recall biases on the SRET in a nonclinical adolescent sample, suggesting that these information processing biases may be associated with the emergence of depressive symptoms during this age range. Furthermore, it is worth noting that depressive symptoms were concurrently associated with SRET self-concept variables (number of negative and positive words endorsed as self-referent) in the expected directions, in line with SRET findings among clinical (Dozois & Dobson, 2001) and cognitively vulnerable (Alloy et al., 1997) adult samples. Although not a measure of information processing bias, this finding supports the link between negative self-concept and risk for depression and extends it to a community sample of adolescents.

Hypothesis 2 predicted that SRET performance would prospectively predict increases in depressive symptoms at a nine-month follow-up. Partial support was obtained; increased response time when judging negative words to *not* be self-descriptive, and decreased proportional recall of endorsed positive self-referent adjectives predicted increases in depressive symptoms at follow-up. These results complement previous findings that SRET performance in interaction with rumination prospectively predicted increases in depressive symptoms in a community sample of adolescents (Black & Pössel, 2013). Although findings from the Black and Pössel (2013) study suggested that the effect of SRET performance on depressive symptoms only emerged in interaction with rumination, current findings demonstrate that the SRET may serve as an independent predictor of depressive symptoms among a nonclinical sample of adolescents. This difference may be due to the wider range of biases measured in the current study. Black and Pössel measured SRET performance using one negative self-referent recall variable, which was not found to independently predict depressive symptoms. The present design examined recall and response time for both negative and positive self-referent words, which may have allowed for a more complete examination of potential predictors of depressive symptoms. Findings emphasize the importance of targeting negative self-referent information processing biases as risk factors for the development of depressive symptoms in youth.

The current study has several strengths. It employed a prospective design to assess SRET performance as a predictor of depressive symptoms in a community sample of adolescents. Whereas almost all studies of the SRET assess clinically depressed, dysphoric, or at-risk samples, the current study found support for both concurrent and prospective relationships between negative self-referent information processing biases and depressive symptoms in a nonclinical sample of youth. The large, socioeconomically diverse sample of black, white, and biracial adolescents, as well as the narrow age range of youth included in the current study (12–13 years old at baseline) are added strengths. Previous studies of SRET performance in youth included participants ranging in age from eight up to 12 or 18 years old, which may have made it more difficult to parse apart the presence of information processing biases from the normative development of processing speed and memory occurring during this age range. Our results also expand upon previous findings of SRET

performance in relation to depressive symptoms in a smaller subset of the current sample (Alloy et al., 2012). The current study found significant relationships between depressive symptoms and measures of RT and recall, whereas the previous examination did not. These significant findings may be accounted for by the alternative calculations of RT and recall employed in the present research. The current variables, which control for participants' RT and recall on structural trials, may better isolate self-referent information processing biases from responses to negative or positive information in general.

Limitations of the current study also should be noted. Due to the ongoing collection of data, a considerable proportion of the sample who completed the T1 assessment were unable to be followed at T2. It also should be noted that adolescents who did not complete the follow-up session were more likely to have higher T1 depressive symptom scores, suggesting that a more depressed portion of the sample was excluded from analyses. In addition, as discussed in the results section, a significant portion of the sample did not endorse any negative words as being self-referent, or did not reject any positive words as *not* being self-referent. These individuals had to be excluded from the calculation of several SRET variables, which decreased sample sizes within these analyses and excluded a significantly less-depressed portion of the overall sample. Whereas the necessity of excluding these participants may be considered a limitation, it is likely that this finding is consistent with what would be expected in a community sample of adolescents. It should be noted that few SRET studies describe the number of participants who did not endorse any negative self-referent adjectives, or did not reject any positive adjectives (Gotlib et al., 2004; Jaenicke et al., 1987). It is unclear in previous research whether these individuals are included when analyzing RT or recall on these trials, as entering their scores as zeros does not accurately reflect their SRET performance and may significantly skew findings. Future SRET studies should aim to provide more information regarding the number of participants who fail to endorse any adjectives within a given trial type.

The current design also did not control for number of depressive episodes experienced in the adolescents' lifetimes, which could serve as an important predictor of increases in depressive symptoms over time. An additional limitation of the current design was its failure to examine the effect of information processing biases in relation to the experience of negative life events. The potential interaction between life stress and cognitive biases is understudied, particularly among youth, and may reveal important relationships within a vulnerability-stress framework of depression (Jacobs et al., 2008). Future work also should aim to study SRET performance in relation to other cognitive vulnerabilities for depression, such as negative cognitive style or rumination, evaluating which operationalizations of cognitive vulnerabilities are the better predictors of depressive symptoms in this age group. Indeed, one study found that whereas SRET performance alone was not a prospective predictor of depressive symptoms, negative recall bias on the SRET in interaction with brooding rumination was predictive of increased symptom scores (Black & Pössel, 2013). Given the small proportion of variance explained by current findings, it is possible that examining SRET variables in interaction with negative life events or alternate cognitive vulnerabilities may provide a more complete picture of the risk factors that may lead to increased depressive symptoms in adolescents.

In sum, the current research found partial support for the hypothesis that negative self-referent information processing biases are associated with depressive symptoms, both concurrently and prospectively, in a community sample of adolescents. Findings suggest that information processing biases may serve as risk factors for the development of depressive symptoms in nonclinical youth. Gaining a better understanding of potential cognitive precursors and vulnerabilities for depression during adolescence will help to more effectively target maladaptive cognitions during this crucial period of development, ideally informing prevention and intervention efforts.

Acknowledgments

This work was supported by the NIMH under Grants MH79369 and MH101168 to Lauren B. Alloy.

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Table 1
Means, SDs, and bivariate correlations between depressive symptoms and SRET performance

	1	2	3	4	5	6	7	8	9	10
1 T1 Depressive Symptoms (CDI)		.57***	.48***	-.38***	-.11	.16**	.06	-.13	.33***	-.14*
2 T2 Depressive Symptoms (CDI)			.38***	-.24***	-.05	.19**	.00	-.12	.27***	-.18**
3 SRET Negative Me Yes total endorsed				-.35***	-.09	.03	-.02	-.13	.42***	-.28***
4 SRET Positive Me Yes total endorsed					-.03	-.13*	-.04	.10	-.24***	.21***
5 SRET Negative Me Yes RT difference score						-.02	.13 [†]	.02	.00	-.09
6 SRET Negative Me No RT difference score							.08	.00	-.06	-.04
7 SRET Positive Me Yes RT difference score								.15 [†]	-.13 [†]	.06
8 SRET Positive Me No RT difference score									-.02	.00
9 SRET Proportion Negative Recalled										-.41***
10 SRET Proportion Positive Recalled										
<i>M</i>	6.74	5.42	1.90	9.76	.06	-.02	-.01	.11	.13	.58
<i>SD</i>	5.99	5.27	1.88	1.43	.45	.26	.22	.58	.16	.25

Note. CDI= Children's Depression Inventory. SRET RT variables = [(average RT for Positive/Negative Yes/No "Me" trials - average RT for Positive/Negative Yes/No "E" trials)/average overall RT], in ms, SRET recall variables = [# positive/negative words endorsed and recalled/ total # words endorsed and recalled across all conditions].

***
 $p < .001$,

**
 $p < .01$,

*
 $p < .05$,

[†]
 $p < .10$

Hierarchical regressions of T2 depressive symptoms on T1 depressive symptoms and SRET performance

Table 2

<i>Predictors:</i>	Dependent Variable: T2 Depressive Symptoms (CDI)									
	RT Difference Score (ms)					Proportion Recall				
	Negative Me Yes β	Negative Me No R^2	Positive Me Yes β	Positive Me No R^2		Negative Me Yes β	Negative Me No R^2	Positive Me Yes β	Positive Me No R^2	
Step 1. T1 CDI	.56***	.53***	.57***	.61***		.57***	.57***	.57***	.32***	
Time to follow-up	.08	.08	.09 [†]	.11 [†]		.07		.08		
Step 2. T1 CDI	.56***	.00	.57***	.61***	.00	.54***	.01	.56***	.01*	
Time to follow-up	.08	.08	.08 [†]	.10 [†]		.07		.09 [†]		
T1 SRET variable of interest	.02	.11*	-.03	-.04		.09		-.11*		

Note. CDI= Children's Depression Inventory. SRET RT variables = [(average RT for Positive/Negative Yes/No "Me" trials - average RT for Positive/Negative Yes/No "E" trials)/average overall RT]. SRET recall variables = [# positive/negative words endorsed and recalled/ total # words endorsed and recalled across all conditions.

***
p < .001,

*
p < .05,

[†]
p < .10