

# Optimistic Explanatory Style and Suicide Attempt in Young Adults

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**Abstract** Suicidal behavior, including suicide attempt, may result from maladaptive explanatory patterns for past negative life events, in which a person attributes the causes of stressors to internal, stable and global factors. Conversely, an optimistic explanatory style involves perceiving negative life events as external, transient and specific, and may be related to reduced suicide risk. We examined the association between attributional style and lifetime suicide attempts in 135 college students, covarying age, race and ethnicity. Participants provided informed consent and completed an online survey. An optimistic explanatory style was associated with reduced risk of suicide attempt; this effect persisted in a model controlling for hopelessness and depressive symptoms. The manner in which an individual interprets negative life events may buffer against suicidal behavior. Therapeutic strategies to promote an optimistic explanatory style may be successful in the prevention of suicide.

**Keywords** Optimism · Optimistic explanatory style · Attributional style · Suicide ideation · Suicide attempt

Suicide is a critical public health problem and a leading cause of death during early adulthood, and of years of potential life lost before age 65 (National Center for Health Statistics 2013; National Center for Injury Prevention and Control 2014). Much research on suicide has justifiably focused on risk factors including cognitive and emotional dysfunction (Beautrais et al. 1999; Lynch et al. 2004), the experience of life stressors or interpersonal difficulties (Van Orden et al. 2005; Dixon et al. 1991), and the presence of psychopathology (Conwell et al. 1996), all of which are generally considered to exert a deterministically-poor effect on suicidal behavior. However, the interrelationships between these variables have been relatively unexplored, and there is some indication that our subjective perception of a stressor is a more robust indicator of poor outcomes than the simple experiencing of a stressor.

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Regardless of their origin, feelings of hopelessness and symptoms of depression are well-documented risk factors for suicidal behavior, including ideation, attempts and death by suicide (Papakostas et al. 2005). Previous research suggests that the manner in which an individual interprets life experiences may affect how he or she responds to them. For some individuals, negative and potentially traumatic life events may promote beneficial post-traumatic growth, whereas other individuals may experience low self-esteem, anxiety and psychological distress as a result of negative life events (Singer et al. 1995; Silvern et al. 1995). Such poor outcomes, however, may not be inevitable, and it is important to examine how such explanatory cognitive-emotional variables might contribute to risk for or protection from suicidal behavior (Waysman et al. 2001; Hirsch et al. 2007a, 2007b). For instance, previous research suggests that some individuals may engage in self-blame or rumination, or may have particular difficulty positively reframing or reappraising their negative life experiences (Kraaij et al. 2003; Carver et al. 1993), potentially resulting in hopelessness, depressive symptoms and self-harm behaviors (Hirsch and Conner 2006; Hirsch et al. 2009). Other individuals may utilize more salubrious coping processes (Tedeschi and Calhoun 1996), such as maintaining an optimistic or future-oriented perspective, to defend against chronic stressors and, thereby, mitigating against self-harm (Hirsch et al. 2006, 2007a, 2007b).

One such potentially protective characteristic is optimistic explanatory, or attributional, style which is a tendency to make attributions about prior negative events that are external, specific and transient (Gillham et al. 2001), rather than making internal, global and stable attributions, which is considered a pessimistic explanatory style. A pessimistic explanatory style is associated with less academic success, poor physical health, and greater levels of hopelessness and depression (Gillham et al. 2001; Schulman et al. 1989), as well as suicide ideation (Priester and Clum 1992; Hirsch and Conner 2006). Optimistic explanatory style, on the other hand, is associated with good health and longevity (Kamen and Seligman 1987; Peterson 1988), effective problem solving (Shatte et al. 2000), and decreased and faster recovery from depression (Gillham et al. 2001; Seligman et al. 1988; Lewinsohn et al. 2000). Research suggests that explanatory style for negative events is stable across time (Burns and Seligman 1989); however, explanatory style can also be a target of cognitive intervention, in which individuals adopt a more optimistic explanatory style (Proudfoot et al. 2009). Such benefits of an optimistic explanatory style may occur via the use of active and adaptive coping strategies, a direct approach to solving problems, a belief in the attainability of future goals, and striving to overcome adversity (Miller et al. 1996; Puskar et al. 1999; Carver et al. 1993).

Overall, previous research suggests a trend toward better physical and mental health outcomes, including less suicidal behavior, for individuals endorsing an optimistic, rather than pessimistic, explanatory style. However, because of the relatively low incidence rate of suicide attempt, compared to suicidal ideation or other mental health concerns such as depression, studies examining the association of cognitive variables to attempt status are relatively rare (Rotheram-Borus 1990; Spirito et al. 1991; Lewinsohn et al. 2000). We hypothesized that explanatory style would distinguish between suicide attempters and non-attempters, such that a more optimistic explanatory style would be associated with reduced likelihood of a suicide attempt. The possibility exists that other forms of psychopathology also contribute to self-harm outcomes; therefore, we tested the hypothesis that the effects of explanatory style on suicide attempt status would exist over and above the influence of hopelessness and depressive symptoms.

## Methods

### Participants

Participants were 135 volunteers (99 females, 73 %) recruited from a rural, Southeastern university, and ranged in age from 18 to 57 years old ( $x_{\text{mean}} \text{ age}=22.6$ ;  $SD=6.12$ ). The sample consisted of White (92 %), Black (4.5 %), Native American (1.3 %), Hispanic / Latin American (1.3 %) and Asian (1 %) participants.

### Procedures

Our study was approved by an Institutional Review Board, and all participants completed a written, informed consent. Students were offered the opportunity to voluntarily participate to receive course extra credit, and completed a 30–45 min online survey, via secure server from a private location of their choosing, that included measures of physical and psychological health.

### Measures

**Expanded Attributional Style Questionnaire (EASQ) (Peterson and Villanova 1988)** The EASQ assesses attributional style via 120 items involving 24 scenarios of negative events. Participants are given a brief scenario (e.g., *You lose your job*) and are asked to describe why this event happened to them, rating each scenario on scales of internality, globality, stability and importance. The EASQ yields subscale scores and a total score; higher scores indicate a greater tendency to attribute negative events to internal, global and stable factors. A lower total score indicates an optimistic explanatory style, whereas a higher total score indicates a pessimistic explanatory style. The EASQ predicted depression and suicide ideation in college students and outpatients (Sturman et al. 2006; Hirsch et al. 2009). This measure exhibits adequate internal consistency (Joiner and Metalsky 1999; Chang and Sanna 2001); in the current study, Cronbach's  $\alpha=.91$  for all items.

**Beck Depression Inventory-II (BDI-II) (Beck et al. 1996)** The BDI-II is a 21-item self-report measure of the presence and severity of cognitive, affective, somatic and motivational symptoms of depression. The BDI-II has been used often in psychiatric and collegiate samples, successfully predicting depression and self-harm and exhibiting adequate test-retest reliability (0.93) (Osman et al. 1997; Forman et al. 2004; Beck et al. 1996). In the current study, Cronbach's  $\alpha$  for the BDI-II=.92; the BDI-II item on suicide was omitted to reduce multicollinearity with outcome.

**Beck Hopelessness Scale (BHS) (Beck et al. 1974)** This scale assesses level of hopelessness via 20 true-false statements. The scale has adequate internal reliability (KR20 coefficient=0.93), and test-retest reliability (0.69 over 1 week; .66 over 6 weeks) (Beck et al. 1974). The BHS predicted suicide ideation in college students (Bonner and Rich 1987; Hirsch and Conner 2006), and suicide attempts (Minkoff et al. 1973) and suicide completion in psychiatric outpatients (Beck et al. 1990) and inpatients (Keller and Wolfersdorf 1993), and differentiated between suicide attempters and completers (Beck et al. 1985). In the current study, the mean score was 3.76 ( $SD=3.88$ ), and Cronbach's  $\alpha=0.87$ .

**Beck Scale for Suicide Ideation (BSS) (Beck et al. 1979)** The BSS is a 21-item self-report assessment of suicidal thoughts, attitudes and intentions. We used a single item from the BSS to assess suicide attempt: “0: I have never attempted suicide; 1: I have attempted suicide once; 2: I have attempted suicide two or more times.” On the whole, the BSS has adequate internal consistency in college student and psychiatric samples (0.87–0.90), and exhibits high convergent, and construct validity and adequate test-retest reliability (Beck et al. 1979). The BSS has been frequently used to predict suicidal ideation in university students (Guthrie et al. 2001; Hirsch and Conner 2006). In the current study, Cronbach’s alpha for the whole measure=.83.

## Statistical Analyses

Independence of study variables was assessed using two-tailed bivariate correlation analyses (see Table 1). Hierarchical, multivariate logistic regressions were utilized to predict suicide attempt status, scored dichotomously (Tabachnick and Fidell 2001); covariates were entered on the first step, and predictor variables were entered on the second step. To determine unique contributions to suicide attempt, separate analyses were conducted for each EASQ subscale and for the total EASQ score. To assess shared variance, a separate model analyzed all subscales entered simultaneously. By design, all analyses controlled for depressive symptoms (BDI-II), hopelessness (BHS), age and gender (females are the reference group); we also ran these analyses without controlling for depression and hopelessness, and report these results. The EASQ subscale of importance was not significant in any model; therefore, no table is provided.

**Table 1** Bivariate correlations of study variables

	Mean (SD) N (%)	Hopelessness	Depressive Symptoms	EASQ Stability	EASQ Globality	EASQ Internality	EASQ Importance	EASQ Total Score
Depressive Symptoms	12.23 (9.64)	0.72**	–	–	–	–	–	–
EASQ Stability	3.42 (0.59)	0.37**	0.44**	–	–	–	–	–
EASQ Globality	3.17 (0.76)	0.34**	0.39**	0.58**	–	–	–	–
EASQ Internality	3.63 (0.55)	0.34**	0.28**	0.27**	0.35**	–	–	–
EASQ Importance	4.18 (0.64)	0.13	0.13	0.32**	0.55**	0.31**	–	–
EASQ Total Score	10.23 (1.49)	0.45**	0.48**	0.79**	0.87**	0.65**	0.52**	–
Suicide Attempt	13 (10 %)	0.18*	0.35**	0.27**	0.19*	0.25**	0.06	0.29**

Depressive Symptoms = Beck Depression Inventory II total score; Hopelessness = Beck Hopelessness Scale total score; EASQ = Expanded Attributional Style Questionnaire total score and subscale scores; Suicide Attempt = Beck Scale of Suicide Ideation attempt status item

\*= $p < .05$ ; \*\*= $p < .01$

## Results

Sixty-five participants (48 %) reported previous mild suicide ideation (1–4 BSS cut-off score), 26 (19 %) reported moderate ideation (5–15 BSS score) and 3 participants (2 %) reported severe suicide ideation (16–23 BSS score). Thirteen participants (10 %) acknowledged making a past suicide attempt. Seven percent of our sample ( $N=9$ ) reported making one previous suicide attempt, and 3 % of our sample ( $N=4$ ) reported making two or more attempts. Bivariate correlations indicated that a pessimistic explanatory style was significantly positively associated with hopelessness (.45;  $p<.01$ ), depressive symptoms (.48;  $p<.01$ ), and suicide attempts (.29;  $p<.01$ ). The EASQ subscale scores of stability, globality, and internality were all significantly positively associated with hopelessness, depression and suicide attempt ( $p<.01$ ); however, the subscale of importance was not (See Table 1).

In an uncontrolled analysis we examined the influence of the EASQ subscale of stability on suicide attempt status, finding a significant effect,  $OR=.15$ , 95 % CI (0.05–0.49),  $p<.01$ ,  $Un\ \beta$  (SE)=-1.91 (.61); age was an independent contributor to risk. Individuals perceiving negative life events as transient, rather than stable had a reduced likelihood of suicide attempt. This effect was maintained in analyses controlling for both hopelessness and depressive symptoms,  $OR=.24$ , 95 % CI (0.06–0.97),  $p<.05$ ,  $Un\ \beta$  (SE)=-1.43 (.71); depressive symptoms and age independently contributed to risk for suicide attempt (See Table 2).

The EASQ subscale of globality was also a significant predictor of suicide attempt status in uncontrolled analyses,  $OR=.36$ , 95 % CI (0.16–0.82),  $p<.05$ ,  $Un\ \beta$  (SE)=-1.01 (.41); age was a significant independent contributor to risk. There was a trend for this effect to be maintained in controlled analyses,  $OR=.43$ , 95 % CI (0.16–1.15),  $p=.09$ ,  $Un\ \beta$  (SE)=-0.84 (0.50), suggesting that individuals able to perceive previous negative events as specific, rather than global, are at reduced risk for a suicide attempt. In controlled analyses, depressive symptoms and age were significant independent contributors to suicide attempt risk, and there was a trend towards clinical significance for hopelessness to contribute to risk ( $p=.07$ ) (See Table 3).

**Table 2** Multivariate logistic regression – EASQ Stability subscale score and suicide attempt

Model I – Uncontrolled Analysis			Model II – Controlled Analysis		
	Odds Ratio (95%CI)	Un. $\beta$ (SE)		Odds Ratio (95 % CI)	Un. $\beta$ (SE)
Constant	0.00*** (-)	-11.07 (2.81)	Constant	0.00*** (-)	-11.18 (3.12)
Age	1.10* (1.02–1.18)	0.09 (0.04)	Age	1.14** (1.04–1.24)	0.13 (0.04)
Gender	0.18 (0.02–1.63)	-1.71 (1.12)	Gender	0.21 (0.02–2.15)	-1.58 (1.20)
Ethnicity	0.97 (0.26–3.60)	-0.03 (0.67)	Ethnicity	0.54 (0.10–3.05)	-0.62 (0.89)
	–	–	Hopelessness	0.84 (0.69–1.03) †	-0.17 (0.11)
	–	–	Depressive Symptoms	1.16** (1.05–1.28)	0.15 (0.05)
EASQ Stability	0.15** (0.05–0.49)	-1.91 (0.61)	EASQ Stability	0.24* (0.06–0.97)	-1.43 (0.71)

Depressive Symptoms = Beck Depression Inventory II total score; Hopelessness = Beck Hopelessness Scale total score; EASQ Stability = Expanded Attributional Style Questionnaire stability subscale score; Suicide Attempt = Beck Scale of Suicide Ideation attempt status item

\*= $p<.05$ ; \*\*= $p<.01$ ; \*\*\*= $p<.001$ ; †=clinically significant trend ( $p<.09$ )

Similarly, the EASQ subscale of internality predicted suicide attempt in uncontrolled,  $OR=.24$ , 95 % CI (0.09–0.65),  $p<.01$ ,  $Un \beta (SE)=-1.45 (0.52)$ , and neared significance in controlled analyses,  $OR=.30$ , 95 % CI (0.09–1.03),  $p=.055$ ,  $Un \beta (SE)=-1.21 (0.63)$ . These findings suggest that individuals who tend to attribute negative life events to external, rather than internal, factors are at reduced risk for a suicide attempt (See Table 4).

The EASQ subscale of importance did not reach significance in individual uncontrolled and controlled analyses; however, in an uncontrolled model including all EASQ subscales, there was a clinical trend toward importance as a significant predictor of risk for suicide attempt,  $OR=3.65$ , 95 % CI (0.82–16.22),  $p=.09$ ,  $Un \beta (SE)=1.29 (.76)$ , suggesting that the less important a negative life event was deemed, the stronger the association with suicide attempt. This effect was not replicated in the controlled model using all subscales.

The subscale of stability was a significant predictor in an uncontrolled model containing all EASQ subscales,  $OR=.17$ , 95 % CI (0.04–0.82),  $p<.05$ ,  $Un \beta (SE)=-1.78 (0.81)$ , and there was a trend toward significance for internality,  $OR=.30$ , 95 % CI (0.08–1.12),  $p=.07$ ,  $Un \beta (SE)=-1.22 (0.68)$ ; age and gender neared significance. In a controlled analysis containing all subscales, none were significant; however, age and depressive symptoms were significant predictors of risk, and there was a clinically significant trend for hopelessness as a risk factor (See Table 5).

Finally, an uncontrolled model predicting the influence of EASQ Total Score (optimistic explanatory style) on suicide attempt status was significant;  $OR=.50$ , 95 % CI (0.32–0.76),  $p<.001$ ,  $Un \beta (SE)=-0.70 (0.22)$ . This main effect remained in a controlled model,  $OR=.56$ , 95 % CI (0.33–0.94),  $p<.05$ ,  $Un \beta (SE)=-0.59 (0.27)$ . Individuals with a more optimistic explanatory style had a reduced likelihood of suicide attempt, over and above the influence of hopelessness and depressive symptoms (See Table 6).

**Table 3** Multivariate logistic regression – EASQ Internality subscale score and suicide attempt

Model I – Uncontrolled Analysis			Model II – Controlled Analysis		
	Odds Ratio (95%CI)	Un. $\beta$ (SE)		Odds Ratio (95 % CI)	Un. $\beta$ (SE)
Step Two			Step Two		
Constant	0.00*** (–)	–9.38 (2.55)	Constant	0.00*** (–)	–10.74 (2.98)
Age	1.08† (0.99–1.16)	0.07 (0.04)	Age	1.12** (1.03–1.22)	0.11 (0.04)
Gender	0.16 (0.02–1.59)	–1.82 (1.16)	Gender	0.17 (0.01–2.21)	–1.76 (1.30)
Ethnicity	1.20 (0.38–3.73)	0.18 (0.58)	Ethnicity	0.72 (0.17–2.97)	–0.34 (0.73)
	–	–	Hopelessness	0.81† (0.66–1.01)	–0.21 (0.11)
	–	–	Depressive Symptoms	1.18** (1.07–1.30)	0.16 (0.05)
EASQ Internality	0.24** (0.09–0.65)	–1.45 (0.52)	EASQ Internality	0.30† (0.09–1.03)	–1.21 (0.63)

Depressive Symptoms = Beck Depression Inventory II total score; Hopelessness = Beck Hopelessness Scale total score; EASQ Internality = Expanded Attributional Style Questionnaire internality subscale score; Suicide Attempt = Beck Scale of Suicide Ideation attempt status item

\*= $p<.05$ ; \*\*= $p<.01$ ; \*\*\*= $p<.001$ ; †=clinically significant trend ( $p<.09$ )

**Table 4** Multivariate logistic regression – EASQ Globality subscale score and suicide attempt

Model I – Uncontrolled Analysis			Model II – Controlled Analysis		
	Odds Ratio (95%CI)	Un. $\beta$ (SE)		Odds Ratio (95 % CI)	Un. $\beta$ (SE)
Step Two			Step Two		
Constant	0.00***	-7.40 (2.08)	Constant	0.00*** (-)	-9.15 (2.46)
Age	1.09* (1.01–1.17)	0.09 (0.04)	Age	1.14** (1.04–1.24)	0.13 (0.04)
Gender	0.17 (0.02–1.49)	-1.76 (1.10)	Gender	0.19 (0.02–2.06)	-1.67 (1.22)
Ethnicity	1.02 (0.34–3.09)	0.02 (0.57)	Ethnicity	0.53 (0.11–2.49)	-0.64 (0.79)
	–	–	Hopelessness	0.82 (0.66–1.02)†	-0.19 (0.11)
	–	–	Depressive Symptoms	1.19** (1.07–1.31)	0.17 (0.05)
EASQ Globality	0.36* (0.16–0.82)	-1.01 (0.41)	EASQ Globality	0.43 (0.16–1.14)†	-0.84 (0.50)

Depressive Symptoms = Beck Depression Inventory II total score; Hopelessness = Beck Hopelessness Scale total score; EASQ Globality = Expanded Attributional Style Questionnaire globality total score; Suicide Attempt = Beck Scale of Suicide Ideation attempt status item

\*= $p < .05$ ; \*\*= $p < .01$ ; \*\*\*= $p < .001$ ; †=clinically significant trend ( $p < .09$ )

## Discussion

The manner in which someone interprets past negative and potentially traumatic events may contribute to self-harm outcomes, including suicide attempt. After controlling for the effects of age, gender, hopelessness and depressive symptoms, we found that explanatory style was a

**Table 5** Multivariate logistic regression – EASQ Stability, Internality and Globality subscale scores and suicide attempt

Model I – Uncontrolled Analysis			Model II – Controlled Analysis		
	Odds Ratio (95%CI)	Un. $\beta$ (SE)		Odds Ratio (95 % CI)	Un. $\beta$ (SE)
Constant	0.00** (-)	-11.44 (3.46)	Constant	0.00** (-)	12.221 (3.77)
Age	1.11* (1.03–1.20)	0.10 (0.04)	Age	1.14** (1.04–1.24)	0.13 (0.04)
Gender	0.09† (0.01–1.24)	-2.39 (1.33)	Gender	0.09 (0.01–1.62)	-2.39 (1.47)
Ethnicity	0.96 (0.21–4.39)	-0.04 (0.78)	Ethnicity	0.60 (0.10–3.67)	-0.51 (0.93)
	–	–	Hopelessness	0.80† (0.63–1.01)	-0.23 (0.12)
	–	–	Depressive Symptoms	1.14* (1.03–1.27)	0.13 (0.05)
EASQ Stability	0.17* (0.04–.82)	-1.78 (0.81)	EASQ Stability	0.27 (0.05–1.67)	-1.30 (0.93)
EASQ Internality	0.30† (0.08–1.12)	-1.22 (0.69)	EASQ Internality	0.29 (0.06–1.37)	-1.26 (0.80)
EASQ Globality	0.63 (0.15–2.66)	-0.46 (0.73)	EASQ Globality	0.62 (0.13–2.95)	-0.49 (0.80)
EASQ Importance	3.65 (0.82–16.22)	1.29 (0.76)	EASQ Importance	2.89 (0.58–14.49)	1.06 (0.82)

Depressive Symptoms = Beck Depression Inventory II total score; Hopelessness = Beck Hopelessness Scale total score; EASQ scores = Expanded Attributional Style Questionnaire subscale and total scores; Suicide Attempt = Beck Scale of Suicide Ideation attempt status item

\*= $p < .05$ ; \*\*= $p < .01$ ; \*\*\*= $p < .001$ ; †=clinically significant trend ( $p < .09$ )

**Table 6** Multivariate logistic regression – EASQ Total Score and suicide attempt

Model I – Uncontrolled Analysis			Model II – Controlled Analysis		
	Odds Ratio (95%CI)	Un. $\beta$ (SE)		Odds Ratio (95 % CI)	Un. $\beta$ (SE)
Step Two			Step Two		
Constant	0.00*** (–)	–11.65 (2.88)	Constant	0.00** (–)	–12.27 (3.29)
Age	1.10* (1.02–1.18)	0.09 (0.04)	Age	1.14** (1.04–1.24)	0.13 (0.04)
Gender	0.13† (0.01–1.42)	–2.04 (1.22)	Gender	0.13 (0.01–1.85)	–2.01 (1.34)
Ethnicity	1.05 (0.32–3.50)	0.05 (0.61)	Ethnicity	0.57 (0.12–2.73)	–0.56 (0.80)
	–	–	Hopelessness	0.80* (1.06–1.29)	–0.22 (0.11)
	–	–	Depressive Symptoms	1.17 ** (1.06–1.29)	0.16 (0.05)
EASQ Total Score	0.50** (0.32–0.76)	–0.70 (0.22)	EASQ Total Score	0.56* (0.33–0.94)	–0.59 (0.27)

Depressive Symptoms = Beck Depression Inventory II total score; Hopelessness = Beck Hopelessness Scale total score; EASQ Total Score = Expanded Attributional Style Questionnaire total score; Suicide Attempt = Beck Scale of Suicide Ideation attempt status item

\*= $p < .05$ ; \*\*= $p < .01$ ; \*\*\*= $p < .001$ ; †=clinically significant trend ( $p < .09$ )

significant predictor of suicide attempt status. Individuals with an optimistic explanatory style were less likely to report having made a suicide attempt in their lifetime than individuals with a pessimistic explanatory style. Our findings suggest that the attributions a person makes about negative life event they may experience contribute to the likelihood of making a suicide attempt. Attributing blame for a negative life event to ones' self, believing that a negative life experience will fail to resolve or may recur, or catastrophizing the global impact of a stressor may overwhelm a person to the extent that they consider taking their own life as a viable solution to their difficulties. On the other hand, avoidance of self-blame, acknowledgement of a stressor as an isolated event, and a belief that a negative life event will eventually be resolved may mitigate risk for a suicide attempt.

Our findings support previous research suggesting an important role for explanatory style in the disruption of mood and the incidence of self-harm behaviors. For instance, optimistic explanatory style is associated with reduced post-traumatic symptoms, depression, and anxiety (Ahrens and Haaga 1993; Seligman et al. 1999; Runyon and Kenny 2002; McCormick et al. 1989), and appears to moderate the associations of hopelessness and negative life events to suicide ideation (Hirsch and Conner 2006; Hirsch et al. 2009); however, ours is one of the few studies to examine the relationship of attributional style to history of lifetime suicide attempt.

Importantly, our finding that explanatory style is associated with reduced likelihood of suicide attempt occurred in the context of stringent covariate coverage; hopelessness and depressive symptoms were covaried in our statistical model. That attributional style continues to exert an effect on self-harm outcomes over and above the effects of hopelessness and depression, which are robust predictors of suicide (Konick and Gutierrez 2005; Heisel et al. 2003; Abela and Seligman 2000), emphasizes the importance of cognitive characteristics in the development of maladaptive and psychopathological responses, including the decision to take ones' life.

Our findings may have implications for the treatment of trauma-related suicidal thoughts and behaviors. Just as individuals who think positively about their future appear to be protected from some adverse medical and psychological outcomes (Achat et al. 2000;



Vaillant 2003; Hirsch et al. 2007a, 2007b), so might individuals who are able think positively about their past (Hirsch and Conner 2006; Hirsch et al. 2009; Busseri 2013). Preliminary findings suggest that teaching individuals to develop a more balanced and optimistic set of attributions for past negative life events can increase hopefulness and reduce depression in adolescents and college students (Jaycox et al. 1994; Gillham et al. 2001; Gillham and Reivich 2004); our results suggest that this treatment strategy may also be beneficial to suicidal individuals.

Our examination of explanatory style as a predictor of suicide attempt over and above the effects of hopelessness and depressive symptoms is novel; however, acknowledgment of minor limitations is warranted. For instance, use of cross-sectional data precludes the ability to assess causality and retrospective report of self-harm may be subject to recall bias; however, the premise of explanatory style as a retrospective cognitive focus on past negative life events necessitates such self-report recall. Further, the low base rate of suicide attempts makes prospective assessment infeasible; indeed, although the main effect of explanatory style on suicide attempt was robust in our study, the small sample of attempters may limit generalizability. Future research using larger and more diverse clinical and community samples, with higher incidence of suicide attempt is required. Measurement of suicide attempt via a single-item is less than ideal, and future studies should utilize a more comprehensive assessment of suicide attempt. Potential detrimental effects of excessively optimistic explanatory style should also be explored (Segerstrom 2001, 2005); in excess, otherwise protective characteristics may mask symptoms or deter treatment seeking (Hirsch et al. 2007a, 2007b). Despite this risk, our study contributes to the literature suggesting that the manner in which an individual interprets stressful life experiences may influence self-harm outcomes. Attributing negative or potentially traumatic life events to external, transient and specific factors may reduce risk for suicide attempt, and the promotion of such adaptive explanatory patterns may be targeted in suicide prevention strategies.

**Conflict of Interest** Jameson K. Hirsch and Jessica K. Rabon declare that they have no conflict of interest.

**Informed Consent** All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000 (5). Informed consent was obtained from all patients for being included in the study.

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