WHAT'S IMPORTANT TO ME
Identifying At-Risk and Resilient Students Through Narrative Writing About Personal Values

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The study explored whether aspects of elementary students' writing about their personal values could predict if students were considered more at risk or more resilient. Essays from 176 fifth-grade students (79.54% African American, 20.46% Hispanic) from a low-income, urban district in New Jersey were analyzed using the Linguistic Inquiry and Word Count software. Students also were assessed on self-concept, social skills, internalizing, externalizing and hyperactivity before and after essay writing, which were then used to predict at-risk and resilient cluster groups. Discriminant factor analysis revealed that the percentage of death-related words in the essays predicted at-risk group membership for male students and Hispanic students. The percentage of social process-related words was a significant predictor of resilience for Hispanic students. Results were replicated using Time 2 data. How Laws of Life essay characteristics can provide unobtrusive insight into the at-risk or resilience status in children from high-risk communities was discussed.

Children growing up in lower income and urban communities are often exposed to greater numbers of life stressors than their suburban and more affluent counterparts (Natsuaki et al., 2007; Roosa et al., 2010; Roosa, Jones, Tein, & Cree, 2003). This can include an overall lack of resources (e.g., food, access to a good education system), greater frequency of community violence, and witnessing death. With this heightened exposure to stress, children from these communities are at greater risk of developing future physical (see Taylor, 2010 for review) and mental health problems (see Grant et al., 2003 for review). However, despite this environmental disadvantage, many children show tremendous resilience and an ability to cope and positively adapt in these stressful life circumstances (Luthar, Cicchetti, & Becker, 2000).

Expressive writing may be a particularly relevant tool in at-risk populations of children who have experienced significant amounts of life stress. Having the opportunity to discuss their strengths while processing negative expe-

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riences through writing could have a significant impact on how children from disadvantaged backgrounds make sense of their world. Writing can give them an opportunity to explore different facets of their identity and possible selves, a process that can be empowering and thus, resilience building. On the other hand, the degree that children are able to express themselves in their writing may also serve as an indicator of greater resilience. It might indicate that they have greater insight into their problems and a stronger understanding of their personal identity.

This study uses a well-respected technique for character development, the Laws of Life essay (Elias, 2008b), as a vehicle for expressive writing, to better understand contributors to resilience in disadvantaged, urban youth. There is a significant body of research documenting associations between individuals' writing about their personal experiences and positive health outcomes (Esterling, L'Abate, Murray, & Pennebaker, 1999; Frisina, Borod, & Lepore, 2004; Niederhoffer & Pennebaker, 2009; Pennebaker, 2000; Pennebaker & Seagal, 1999; Schwartz & Drotar, 2004). Specifically, writing about life goals and future selves has been found to be associated with greater self-reported psychological well-being and fewer visits to the doctor (Harrist, Carlozzi, McGovern, & Harrist, 2007; King, 2001). In addition, narrative theories of identity development suggest that making meaning of past experiences facilitates personal growth and development of a self concept (Reese, Yan, Jack, & Hayne, 2010). Creating a coherent narrative helps individuals to organize and provide structure to their experiences, and integrate it into their larger life story (Niederhoffer & Pennebaker, 2009). The way that individuals generally interpret their experiences may also be play a role. For instance, those who have a more optimistic (versus pessimistic) style of interpreting events are more likely to use more problem-focused (versus emotion-focused) coping strategies which has been found to be related to better psychological adjustment (Peterson & Steen, 2009).

James Pennebaker has been a pioneer in the field of interpreting the nuances in individual writing style to try to better understand the relationship between patients' writings about stressful and traumatic experiences and their future health outcomes. Pennebaker became interested in being able to examine text of individuals under distress in order to predict long-term health outcomes (1997), and to do this, he has focused much of his work on analyzing text using a word usage, or word counting, strategy. This method is thought to capture the essence that a person is trying to express by assuming that the words an individual uses in his or her writing can be placed into different categorical concepts (Pennebaker & King, 1999). For example, if someone is trying to express "sadness," they may be more likely use words such as sad, cry, or loss. In interpreting expressive writing using a word count method, researchers have been able to explore the qualitative content of text in a more quantitative way. They can explore systematically the relationship between health outcomes and the basic structure of the text (e.g., overall word count, punctuation), as well as the content of the narratives (e.g., frequency of emotion word use). For example, the use of greater causal and insight words (e.g., think, know, and consider) in processing the death of a loved one was found to be related to greater mental and physical health (Pennebaker, Mayne, & Francis, 1997). In another study, depressed individuals were found to use more personal pronouns, such as "I" or "me," as well as had a greater percentage of words with a negative valence than formerly depressed individuals or individuals who have never been depressed (Rude, Gortner, & Pennebaker, 2004). The ways people express themselves seem to be fairly reliable over time and across situations (Pennebaker & King, 1999). For example, use of negative emotion words, even when writers were not prompted to write about a negative situation, has been found to be associated with substance use.

Unfortunately, much of the work in understanding the relationship between health,

stress, and expressive writing has focused on adults, rather than on children. There is some work on adolescents (e.g., Kliewer et al., 2011, Margola, Facchin, Molgora, & Revenson, 2010; Sales, Merrill, & Fivush, 2013), but very little about younger children (e.g., Fivush, Marin, Crawford, Reynolds, & Brewin, 2007). Findings on whether expressive writing is beneficial for youth are also mixed (see Travagin, Margola, & Revenson, 2015, for review), with some research finding that writing about a negative experience may be closer to rumination for children and adolescents because they are not yet as effective at problem solving and reflecting about their experiences (e.g., Fivushet al., 2007; Sales, Merrill, & Fivush, 2013). Conversely, other research has found positive outcomes when students write about their experiences.

One example of strengths-based writing that has been used with children in urban settings is the Laws of Life essay-writing program. Laws of Life is an essay writing contest developed by Sir John Templeton with a goal of encouraging students to think, write, and share their core values (John Templeton Foundation, 2012). Students focus on topics such as Responsibility, Honesty, Respect, or whatever other value they believe is a fundamental part of their character. Although research on this program is limited (Elias, 2008a, 2008b; Parker, 2005; Van Dyke & Elias, 2008), it is used in many schools across the United States and abroad. It has been integrated into larger programs targeting social emotional learning and character development in schools and has been well received by students, teachers, parents, and the community (Elias & Leverett, 2011). Some initial research examining the content of a sample of Laws of Life essays found that the degree of sense of purpose that was expressed in the essays, as defined by recognizing something meaningful in ones lives and striving to uphold that value, was positively correlated with positive self-concept for elementary school aged children (Van Dyke & Elias, 2008). Further, in a pilot study examining a sample of Laws of Life essays, the percentage of death-related words significantly distinguished between students based on teacher-reported internalizing symptoms alone, with more mentions of death associated with higher odds of being in the higher internalizing group (Sylvestre, Elias, Stepney, & White, 2012).

The Current Study

The current study sought to use children's narrative writing about their personal values to predict which students display a greater degree of resilience and those who may be at greater risk. Based on prior research in adult populations, it was hypothesized that students who display a greater amount of emotional expression (negative and positive), as well as more insight words would be more likely to be categorized as resilient based on both their own and their classroom teacher's rating. Similarly, a greater degree of writing about social supports, including family and friends, was predicted to be related to resilience. Prior research has found that social supports can serve as a buffer between exposure to violence and future psychopathology in a sample of urban middle school students (Muller, Goebel-Fabbri, Diamond, & Dinklage, 2000).

In addition, students who wrote longer essays were also hypothesized to be categorized as resilient as this might indicate that they are able to more easily articulate their personal values. Cognitive-developmental researchers and theorists maintain that a more highly elaborated identity is more likely to be sustained in the face of challenges (Sigel, 1993). Additionally, students with longer essays may have been more receptive to feedback during the writing process or have had additional family support in telling their stories, both resilience factors which may have helped them to write longer essays. The present study also explored the relationship between personal pronoun use and at-risk categorization, although results from prior research studies are not consistent in whether greater use of personal pronouns is a positive or negative (Niederhoffer & Pennebaker,

2009). Additionally, the relationship between at-risk status and students writing about stressful life events or the future in the essays was also examined. We hypothesized that those who were more at risk would be more likely to write about a stressful life event and also be less future oriented.

METHOD

Setting and Participants

Data for the current study were drawn from a larger study examining the impact of a comprehensive social and emotional learning program in 10 public elementary schools in a low-income, urban district in central New Jersey (see Elias & Leverett, 2011 for review of the larger intervention project). At the time of data collection, this school district was classified as an "Abbott" district by the state of New Jersey, designated by its low socioeconomic status and high failure rates, thus requiring special financial assistance from the State to provide adequate services and supports for its students. The social and emotional learning programing was being implemented as part of this initiative.

As part of the social and emotional learning program, fifth grade students across the district participated in the Laws of Life Essay Writing Program. While the origin of Laws of Life took the form of a scholarship contest for high school students, the school district decided to implement the Laws of Life program to promote character development that would support the upcoming transition of students to middle school. The essay writing was integrated into the fifth grade language arts writing curriculum districtwide. After the students participated in a series of lessons on the concept of Laws of Life and having the opportunity to think and write about its relevance to themselves and their families over a period of 2 weeks, students were instructed to write a 300-word essay about a value by which they lived their lives (e.g., responsibility, honesty, loyalty) and to describe personal experiences that demonstrated that Law of Life. The writing process occurred over a 4-week period of time during their language arts classes with students receiving feedback from their teachers and peers, as they would during any other writing module. Additionally, students were encouraged to discuss their Laws of Life with members of their family and were asked to present their completed essay to their classmates.

Two hundred and forty five fifth-grade students participated in the Laws of Life program over 4 to 6 weeks starting in March. This sample included all students in all fifth grade classrooms across the district. Students were also asked to complete a battery of measures assessing their perceived social, emotional, and behavioral functioning. Additionally, their classroom teachers were asked to evaluate the students on their social skills and behaviors. Self-report and teacher-report measures were collected at two time points, November (Time 1) and June (Time 2). These data were collected as part of the larger project noted earlier. This study used both the Time 1 and Time 2 data in separate analyses to explore whether the relationship between essay characteristics and student and teacher assessment of the students could be replicated.

Sixty-seven students were excluded from analyses, as they did not have both self- and teacher-reported measures at Time 1. Two students who completed their essays in Spanish were also excluded, leaving the final sample to be included in the present study as 176 students. The average age of the students was 10.96 (SD = 0.48, Range = 10.19 – 12.58). About 64% of the students were female (n = 112). The sample was 79.55% African American (n = 140) and 20.45% were Hispanic (n = 36). Sixty-three point sixty-four percent of students were receiving free or reduced lunch (n = 112).

Measures

Demographic Information. Teachers were asked to report their students' date of birth, gender, and race/ethnicity based on students'

records. Additional demographic information was provided by the school, including information on the students' status of free and reduced lunch, which is used as a marker of family socioeconomic status.

Student-Reported Self-Concept. A modified version of the *Piers Harris Self-Concept Scale* (Piers & Harris, 1984) was used based on prior work (Dilworth, Mokrue, & Elias, 2002; Elias, Beier, & Gara, 1988). The original scale contained 80 items, but was condensed to 44 items to reduce the burden on participants. The measure assesses students' views of themselves across six domains: happiness and satisfaction (e.g., "I am a happy person"), popularity (e.g., "I have many friends"), freedom from anxiety ("I get nervous when the teacher calls on me" [reverse coded]), physical appearance and attributes (e.g., "I have a nice face"), intellectual and school status (e.g., "I have good ideas"), and behavioral adjustment (e.g., "I am well-behaved in school"). Items from the original scale that loaded across more than one subscale were removed and psychometric analyses of the modified scale found that it was highly reliable (r = .86) and stable over a 6-month period (r = .73) (Dilworth et al., 2002; Elias et al., 1988)

Item responses are dichotomous, with students asked to respond *"Yes*" or *"No"* that the item describes them. Items worded in the negative (e.g., I get into a lot of fights) are reverse coded so that higher scores on all items indicate a more positive self-concept. Items are summed to produce six subscale scores: (1) happiness and satisfaction, (2) popularity, (3) freedom from anxiety, 4) physical appearance, 5) intellectual and school status, and (6) behavioral adjustment. Three subscales that capture particular aspects of resilience, the happiness and satisfaction (range = 0 – 4; Cronbach's α = 0.71), freedom from anxiety (range = 0 – 6; Cronbach's α = 0.65), and behavioral adjustment (range, 0 – 12; Cronbach's α = 0.69) subscales were combined into an overall total measure of student-rated resilience (Range = 0 – 22; Cronbach's α = 0.78).

Teacher-Reported Social Skills and Problem Behaviors. A modified version of the *Social Skills Rating System-Teacher* (SSRS-T) (Gresham & Elliott, 1990) was used to assess teacher perception of their students' social skills, problem behaviors, and academic and learning behaviors. The original measure consisted of 57 items, but was modified to 30 items, only including the items that loaded most highly on each subscale. The full-scale score and subscales of the modified measure were found to be highly correlated with the original scale scores, with correlations ranging from .90 to .94 (Cedeno, 2010).

The items are rated on a 3-point Likert scale, 0 = *never*, 1 = *sometimes*, and 2 = *very often*. The first 25-items of the modified SSRS-T asked how often the teacher had observed the student performing certain behaviors, including controlling anger, cooperating with peers, and bullying other students, in the last one to two months. These items are summed to create six unique subscales: (1) cooperation (e.g., "attends to your instructions"), (2) assertiveness (e.g., "invites others to join in activities"), (3) self-control (e.g., "controls temper in conflict situations with peers"), (4) externalizing (e.g., "fights with others"), (5) internalizing (e.g., "appears lonely"), and (6) hyperactivity (e.g., "fidgets or moves excessively"). The cooperation, assertiveness, and self-control subscales are summed to form a total social skills scale (Range = 0 – 26), with a higher score indicating greater social skills (Cronbach's α = 0.93). The externalizing, internalizing, and hyperactivity subscales can be summed to form a total problem behaviors scale (Range = 0 – 24), with a higher score indicating more problem behaviors (Cronbach's α = 0.94). The total social skills scale as well as the individual problem behavior scales, externalizing (Cronbach's α = 0.90), internalizing (Cronbach's α = 0.84), and hyperactivity (Cronbach's α = 0.89) were used in the present study. The last five items on the modified SSRS-T are a measure of academic competence, but were not used in the present study.

Content and Structure of Laws of Life Essays. Students' essays were analyzed using the Linguistic Inquiry and Word Count (LIWC) 2007 software (Pennebaker, Booth, & Francis, 2007). This software contains a dictionary of about 4500 word stems and produces an output for each writing file across the following dimensions: 4 general descriptors (e.g., word count, words per sentence), 22 standard linguistic dimensions (e.g., number of words that are pronouns, articles), 32 word categories defined to capture psychological constructs (e.g., positive emotion, negative emotion, insight), 7 personal concern categories (e.g., work, home, money), 3 paralinguistic categories (assents, filers, nonfluencies), and 12 punctuation categories (e.g., number of periods, commas) (Pennebaker, Chung, Ireland, Gonzales, & Booth, 2007).

Except for the total word count variable, the other categories all report the percentage of words in the text that are from that category. For example, a LIWC score of .25 on the first person pronoun category would indicate that 25% of the words in the text were first person pronouns. Definitions and examples of the categories used in the present study are displayed in Table 1. Predictors included word count, use of personal pronouns, overall social process-related words, family-related words, words related to negative and positive emotions, use of cognitive or insight words, and death-related words. Although all students were instructed to write a 300-word essay, essays ranged from 138 to 921 words (M = 406.07, SD = 129.59). Because of this variation in word count and the belief that some students may have a more expressive vocabulary and are better able to articulate themselves or the possibility that through the writing process that some students were more receptive to feedback from peers, teachers, or parents which supported additional writing, all analyses will examine the role of word count.

Exploratory Qualitative Coding

Additional qualitative rating was performed to determine further details about stressful or traumatic life experiences that may have be written about in the essays, including death, separation from loved ones, and community violence. Two independent coders read all of the essays and indicate whether a stressful

TABLE 1
Linguistic Inquiry and Word Count 2007 Software Category Definitions

Category	*Examples*	*# of Words in Category*
Personal pronouns	I, we, them her	70
Positive emotion	Love, nice, sweet	406
Anxiety	Worried, fearful, nervous	91
Anger	Hate, kill, annoyed	184
Sadness	Crying, grief, sad	101
Social processes (includes family, friends, and human subcategories)	Mate, talk, they, child, adult, baby, boy	455
Family	Daughter, husband, aunt	64
Friends	Buddy, friend, neighbor	37
Insight	Think, know, consider	195
Death	Bury, coffin, kill	62

Note: Examples taken from Pennebaker et al. (2007).

event was being discussed and then describe the nature of that event. A list of possible event types adapted from Costello, Angold, March, and Fairbank (1998) was provided to the coders, and included events such as death of a close friend or relative, personally experiencing or witnessing a serious accident of another, or loss of best friend through a move. If the stressful life event involved another person, the coders indicated the relationship between the essay writer and the person (e.g., 1: relative—mother, father, brother, aunt, etc.; 2: other—friend, schoolmate, neighbor; 3: stranger). In addition, coders rated whether the essay had a discussion of future goals or future plans (e.g., graduating from high school, getting a job, going to college). The independent coder ratings of stressful events correlated at $r = .96$.

RESULTS

Preliminary Analyses

Table 2 reports the means, standard deviations, and ranges for all study variables. First, Pearson product moment correlations were computed in order to understand the relationship between the student and teacher-reported measures as continuous variables. Correlations between teacher and student-reported variables are displayed in Table 3. Of note, the student-reported resilience summary score was positively correlated with teacher-reported social skills ($r(174) = .17$, $p = .027$), but was not significantly correlated with any of the teacher-reported problem behaviors (e.g., internalizing, externalizing, and hyperactivity; $p > .05$). An additional correlational analysis was conducted to explore the relationship amongst the LIWC-computed essay characteristic variables (see Table 4).

Subsequently, a series of one-way ANOVAS were conducted in order to determine if there were any demographic differences (i.e., gender, race/ethnicity, free/reduced lunch status) across the child characteristic and essay characteristic variables. There were significant differences by gender. Female students ($M = 16.80$, $SD = 4.53$) had a greater percentage of social processes discussed within their essays than male students ($M = 15.04$, $SD = 4.79$; $F(1, 174) = 5.77$, $p = .017$). Essays written by female students ($M = 2.46$, $SD = 1.19$) also had a greater percentage of insight words than males ($M = 1.91$, $SD = .99$; $F(1, 174) = 9.97$, $p = .002$).

In addition, there were significant differences by ethnicity. Teachers reported that African American students ($M = 1.84$, $SD = 2.38$) displayed a greater amount of externalizing behaviors in the classroom than Hispanic students ($M = 0.86$, $SD = 1.88$) on average ($F(1, 174) = 5.19$, $p = .024$). There was also a significant difference in the percentage of family-related words used in the essays, with Hispanic students ($M = 3.24$, $SD = 2.13$) using a greater percentage of family words than African American students ($M = 2.40$, $SD = 1.92$), on average ($F(1, 174) = 5.16$, $p = .024$). There were no significant differences across Free/Reduced Lunch Status on either the child characteristics or the essay characteristics. As gender and ethnicity showed significant differences among both the child characteristics and essay characteristics, subsequent cluster analyses and discriminant function analyses explored this possibility.

Cluster Analysis

A two-step cluster analysis procedure was performed combining the teacher and student-reported resilience variables in order to identify groups of students who were most at risk and most resilient. The two-step cluster procedure allows for a test of overall cluster quality and cohesion, as well as tests of importance of each contributing variable. This type of analysis is particularly well suited to larger datasets as well as those using continuous and categorical variables in the same clustering procedure (Mooi & Sarstedt, 2011). The test of importance indicates, on a scale from 0.0 to 1.0, how well each variable differentiates between the clusters, with a higher score

TABLE 2
Descriptives of All Study Variables ($N = 176$ at Time 1, $N = 126$ at Time 2)

	Mean (SD) / n (%)	*Range*
Child Characteristics at Time 1		
Age	10.95 (0.48)	10.19–12.58
Female, *n* (%)	112 (63.63%)	
Male, *n* (%)	64 (36.36%)	
African American, *n* (%)	140 (79.54%)	
Hispanic, *n* (%)	36 (20.46%)	
Free and reduced lunch status, *n* (%)	112 (63.63%)	
Student-reported total resilience[a]	18.96 (3.38)	7–22
Teacher-reported total social skills[b]	19.82 (5.77)	5–26
Teacher-reported internalizing	1.43 (1.92)	0–7
Teacher-reported externalizing	1.63 (2.32)	0–8
Teacher-reported hyperactivity	2.07 (2.35)	0–8
Child Characteristics at Time 2		
Age	10.95 (0.47)	10.19–12.24
Female, *n* (%)	81 (63.28%)	
Male, *n* (%)	47 (36.72%)	
African American, *n* (%)	103 (80.47%)	
Hispanic, *n* (%)	25 (19.53%)	
Free and reduced lunch status, *n* (%)	86 (67.19%)	
Student-reported total resilience[a]	19.07 (3.42)	7–22
Teacher-reported total social skills[b]	20.91 (6.17)	6–26
Teacher-reported internalizing	1.66 (2.01)	0–
Teacher-reported externalizing	1.97 (2.56)	0–8
Teacher-reported hyperactivity	2.07 (2.49)	0–8
Essay Characteristics		
Word count	406.07 (129.59)	138–921
Personal pronouns (% of total essay)	17.20 (3.16)	7.78–23.21
Social processes (% of total essay)	16.16 (4.54)	3.90–32.45
Family (% of total essay)	2.57 (1.99)	0.00–9.68
Friends (% of total essay)	0.38 (0.84)	0.00–7.16
Positive emotion (% of total essay)	5.40 (3.29)	0.57–17.88
Anxiety (% of total essay)	0.23 (0.39)	0.00–2.75
Anger (% of total essay)	0.39 (0.51)	0.00–2.71
Sadness (% of total essay)	0.49 (0.59)	0.00–3.23
Insight (% of total essay)	2.26 (1.15)	0.00–6.80
Death (% of total essay)	0.13 (0.31)	0.00–1.88

Notes: [a] Student-reported total resilience is a sum total of the happiness, freedom from anxiety, and behavioral adjustment subscales of the Piers Harris Self Concept scale. [b]Teacher-reported total social skills is a sum total of the cooperation, assertiveness, and self-control subscales of the Social Skills Rating System-Teacher Version measure.

TABLE 3
Correlations Among Student and Teacher-Reported Child Characteristics
(N = 176 at Time 1, N = 126 at Time 2)

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
Child Characteristics at Time 1									
1. Student-reported total resilience[a]	—								
2. Teacher-reported social skills[b]	**.17***	—							
3. Teacher-reported internalizing	−.07	**−.47*****	—						
4. Teacher-reported externalizing	−.08	**−.69*****	**.49*****	—					
5. Teacher-reported hyperactivity	−.08	**−.60*****	**.45*****	**.76*****	—				
Child Characteristics at Time 2									
6. Student-reported total resilience[a]	**.53*****	**.21***	−.03	−.10	−.15	—			
7. Teacher-reported social skills[b]	.16^{+}	**.57*****	**−.44*****	**−.66*****	**−.64*****	.12	—		
8. Teacher-reported internalizing	−.07	**−.43*****	**.57*****	**.54*****	**.54*****	−.01	**−.69*****	—	
9. Teacher-reported externalizing	−.13	**−.59*****	**.51*****	**.75*****	**.72*****	−.10	**−.88*****	**.70*****	—
10. Teacher-reported hyperactivity	**−.18***	**−.51*****	**.39*****	**.60*****	**.73*****	−.15^{+}	**−.84*****	**.66*****	**.85*****

Notes: $^{+}p < .01$. $*p < .05$. $**p < .01$. $***p < .001$. [a]Student-reported total resilience is a sum total of the happiness, freedom from anxiety, and behavioral adjustment subscales of the Piers Harris Self Concept scale. [b]Teacher-reported total social skills is a sum total of the cooperation, assertiveness, and self-control subscales of the Social Skills Rating System-Teacher Version measure. Significant values are in bold.

TABLE 4
Correlations Among Essay Characteristics (N = 176)

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
1. Word count	—									
2. Personal pronouns	−.01	—								
3. Social processes	−.003	**.30*****	—							
4. Family	.04	**.35*****	**.34*****	—						
5. Friends	.01	−.07	**.22****	**−.22****	—					
6. Positive emotion	**−.23****	−.07	**.34*****	**−.18***	**.46*****	—				
7. Anxiety	.10	.06	**−.16***	−.08	−.03	−.12	—			
8. Anger	.05	−.06	.01	−.11	.02	−.04	.10	—		
9. Sadness	.07	.09	−.03	**.34*****	−.08	**−.21***	.01	.08	—	
10. Insight	.06	.01	−.06	**−.29*****	.04	.06	**.16***	.01	−.06	—
11. Death	−.03	.02	−.07	.03	.00	−.06	−.05	−.13^{+}	**.19***	.01

Note: $^{+}p < .10$. $*p < .05$. $**p < .01$. $***p < .001$. Significant values are in bold.

(closer to 1.0) indicating that the difference between the cluster groups is more likely due to some underlying difference rather than to chance (Mooi & Sarstedt, 2011). Based on recommended standards, this analysis used the Euclidian distance measure and the Bayesian Information Criterion to determine cluster size as all imputed variables were continuous (Garson, 2012).

The teacher-reported total social skills, externalizing, internalizing, and hyperactivity subscales, and a total sum variable of the three student-reported self-concept resilience variables, were entered. This produced two distinct clusters, with an average silhouette score equal to .6, indicating good cluster quality and strong evidence of a cluster structure according to Kaufman and Rousseeuw's (1990) standards. Teacher-reported externalizing behavior was the most important predictor of cluster membership (importance = 1.00), followed by the teacher-reported hyperactivity (importance = .71), teacher-reported social skills (importance = .48), teacher-reported internalizing behavior (importance = .29); the student-reported combined resilience measure did not appear to contribute to cluster membership (importance = .00). In examining the means of the computed clusters, Cluster 1 appeared to be the more resilient group (n = 128, 72.7%), with an average externalizing score of 0.45, an average hyperactivity score of 0.95, an average total social skills of 22.12, an average internalizing score of 0.80, and an average student-rated self-concept summary score of 18.98. Cluster 2, the more at-risk group (n = 48, 27.3%), had an average externalizing score of 4.79, an average hyperactivity score of 4.92, an average social skills score of 13.67, an average internalizing score of 3.10, and an average student-rated self-concept summary score of 18.90.

The two clusters that were derived had a similar gender distribution (Cluster 1: 65.6% female, Cluster 2: 58.3% female), with the more resilient group having slightly more females. A chi-square test revealed that this was not a statistically significant difference (χ^2 (1, N = 176) = 0.80, p = .370). However, there were significant differences between the two clusters' ethnicity distributions, with the more resilient group having 75.8% African American students and 24.2% Hispanic students versus the more at-risk group having 89.6% African American students and 10.4% Hispanic students (χ^2 (1, N = 176) = 4.09, p = .043).

Discriminant Analysis

A series of stepwise discriminant function analyses were performed to determine which of the essay characteristics could best discriminate between the more at-risk and more resilient student groups. In a stepwise discriminant function analyses, the most correlated independent predictor is first entered into the discriminant function equation and then subsequent predictors are added as long as they add a significant amount to the canonical R-squared (the Wilks's lambda significance must be at least $p < .05$ for that predictor) (Burns & Burns, 2008). The LIWC-computed essay characteristics—personal pronouns, social processes, family, friends, positive emotion, anxiety, anger, sadness, insight, death, and word count—were entered as predictors. As the risk group sizes were uneven in these analyses (n = 128 versus n = 48), the prior probability of group size was used in the prediction process. Results indicated that none of the essay characteristics significantly discriminated between the at-risk groups in the overall sample.

As gender and ethnicity predicted significant differences among a number of the child and essay characteristics, additional stepwise discriminant function analyses were run to determine if the essay characteristics predictive capabilities when looking at: (a) only female students, (b) only male students, (c) only African American students, and d) only Hispanic students. Results of these analyses found that the essay characteristics did not significantly discriminate between the risk groups when looking at only female students

or only African American students; however, there were significant predictors when looking at only male students and only Hispanic students. For male students (n = 64), there were 20 students classified in the more at-risk group and 44 students classified in the more resilient group. Results indicated that the discriminant function which included the percentage of death related words significantly discriminated between the two risk groups, Wilks's lambda = .89, χ^2 (1, N = 176) = 7.75, p = .007. This single discriminant function had a canonical r of .33 (R^2 = .11), which indicates that this model accounts for 11.89% of the variance in group membership. As death was the only remaining variable in the discriminant function equation, it had sole predictive value in the discriminant equation (standardized canonical discriminant function coefficient = 1.00, unstandardized canonical discriminant function coefficient = 3.18, constant = –.44). Examining the group centroids, the more at-risk group had a mean of .52 and the more resilient risk group had a mean of –.24; the group centroid result indicates that individuals with scores closer to that centroid would be more likely to be in that group, suggesting that male students with a higher percentage of death related words in their essays were more likely to be in the more at-risk group. Using the percentage of death-related words as a predictor of male students risk group status, 76.6% of the cases were correctly classified into their original group.

Similarly, when examining only the Hispanic students, the percentage of death-related words was also able to significantly predict differences in at-risk membership, but the percentage of social process related words also was a significant predictor. For Hispanic students (n = 36), there were 5 students classified in the more at-risk group and 31 students classified in the more resilient group. In combination, death-related words and social process-related words created a single discriminant function which significantly discriminated between the two risk groups, Wilks's lambda = .64, χ^2 (1, N = 176) = 14.96, p = .001. This single discriminant function had a canonical correlation of .60 (R^2 = .36), which indicates that this model accounts for 36.48% of the variance in at-risk group membership. The canonical discriminant function coefficients revealed that social processes had a strong, positive relationship with group membership (standardized canonical discriminant function coefficient = .99, unstandardized canonical discriminant function coefficient = .35, constant = –5.31) and death had a negative relationship with group membership (standardized canonical discriminant function coefficient = –.60, Unstandardized canonical discriminant function coefficient = –1.82, constant = –5.31). Examining the group centroids, the more at-risk group had a mean of -1.83 and the more resilient group had a mean of 0.30; this suggests that Hispanic students with a lower percentage of social-related words and a higher percentage of death related words in their essays were more likely to be in the more at-risk group. Using social processes and death as predictors of the at-risk status of Hispanic students, 94.4% of the cases were correctly classified into their original group.

Time 2 Data

A subsequent set of analyses were performed to explore whether results could be replicated using data from a second time point (Time 2) that was collected at the end of the school year and after the greater schoolwide social and emotional learning intervention was concluded. Of the 176 students in the Time 1 analyses, 48 did not have Time 2 data, leaving a final sample size of 128 for the Time 2 analyses. Forty-one of these missing students were in the more resilient group at Time 1, while 7 were in the more at-risk group. The demographic characteristics of the Time 2 sample were comparable to the Time 1 sample (see Table 2).

Overall, the results using the Time 2 data analysis were similar to Time 1. An initial examination of the Time 2 student and teacher variables using a series of one way ANOVAs

revealed that there continued to be a trend towards a significant gender difference for teacher-reported hyperactivity (female M = 1.75, SD = 2.13; male M = 2.64, SD = 2.94; $F(1, 126) = 3.85$, $p = .052$); however, there was no longer a tendency of gender differences on teacher-reported total social skills ($F(1, 126) = 1.64$, $p = .203$). In addition, teachers continued to report that African American students (M = 2.27 SD = 2.70) displayed a greater amount of externalizing behaviors in the classroom than Hispanic students (M = 0.72, SD = 1.34) on average ($F(1, 126) = 7.75$, $p = .006$). The tendency toward significant differences in teacher-reported social skills became significant (African American $M = 20.21$, $SD = 6.44$; Hispanic M = 23.80, SD = 3.79; $F(1, 126) = 7.13$, $p = .009$), and there was now a significant difference in teacher-reported hyperactivity (African American $M = 2.38$, $SD = 2.61$; Hispanic $M = 0.84$, $SD = 1.34$; $F(1, 126) = 8.14$, $p = .005$). There continued to be no significant differences between free or reduced lunch status groups.

Similar to the Time 1 data, the two-way cluster analysis procedure identified two distinct clusters of students, with an average silhouette score equal to .6, indicating good cluster quality. Cluster 1, the more resilient group (n = 99, 77.3%), had an average teacher-rated social skills score of 23.72 (importance = 1.00), an average externalizing score of 0.95 (importance = .82), an average hyperactivity score of 1.06 (importance = .70), an average internalizing score of 1.06 (importance = .46), and an average student-rated self-concept summary score of 19.29 (importance = .02). Cluster 2 appeared to be the more at-risk group (n = 29, 22.7%), with an average social skills score of 11.34, an average externalizing score of 5.90, an average hyperactivity score of 5.55, an average internalizing score of 4.07, and an average student-rated self-concept summary score of 18.31. Like the Time 1 data, the two clusters had a similar gender distribution (χ^2 (1, N = 128) = 0.35, p = .554), but there was a tendency towards a difference in ethnicity distributions, with the more resilient group having 76.8% African American students and 23.2% Hispanic students versus the more at-risk group having 93.1% African American students and 6.9% Hispanic students (χ^2 (1, N = 128) = 3.81, p = .051).

The majority of students did not change their cluster grouping from Time 1 to Time 2 (n = 110), while 15 students made a positive change from the more at-risk group to the more resilient group and only 3 students made a negative change from the more resilient group to the more at-risk group. Of the 15 students that made a positive change to the more resilient group, 10 were female and 5 were male, and 13 were African American and 2 were Hispanic. Of the three students who made a negative change to the more at-risk group at Time 2, all three were female and African American.

The stepwise discriminant function analyses results were similar to the Time 1 analyses with a few exceptions. First, in the overall Time 2 sample the percentage of death related words now significantly discriminated between at-risk groups, Wilks's lambda = .95, χ^2 (1, N = 128) = 6.66, p = .010. This single discriminant function had a canonical r of .23 (R^2 = .05), which indicates that this model accounts for 5.29% of the variance in group membership. As death was the only remaining variable in the discriminant function equation, it had sole predictive value in the discriminant equation (standardized canonical discriminant function coefficient = 1.00, unstandardized canonical discriminant function coefficient = 3.17, constant = –.44). Examining the group centroids, the more at-risk group had a mean of .43 and the more resilient group had a mean of –.13, which suggests that students with a higher percentage of death related words in their essays were more likely to be in the more at-risk group. Using the percentage of death-related words as a predictor of risk group status, 78.1% of the cases were correctly classified into their original group.

The percentage of death-related words becoming a significant predictor in the overall sample is most likely accounted for by the fact

that in addition to death continuing to be a significant predictor for the Hispanic subsample (along with social-related words), death-related words also became a significant predictor for the African American student subsample, Wilks's lambda = .95, χ^2 (1, N = 128) = 7.75, p = .030. The Canonical r was .21 (R^2 = .05), indicating that this model accounts for 5% of the variance in group membership for African American students. As death was the only remaining variable in the discriminant function equation, it had sole predictive value in the discriminant equation (standardized canonical discriminant function coefficient = 1.00, unstandardized canonical discriminant function coefficient = 3.25, Constant = –.43). Examining the group centroids, the more at-risk group had a mean of .36 and the more resilient group had a mean of –.13, signifying that African American students with a higher percentage of death related words in their essays were more likely to be in the more at-risk group. Using the percentage of death-related words as a predictor of African American students risk group status, 73.8% of the cases were correctly classified into their original group.

Another difference in the discriminant function analyses results was that while death continued to be a significant predictor when looking at male students alone, additionally, the percentage of family-related words also became a significant predictor for the male subsample at Time 2, Wilks's lambda = .64, χ^2 (2, N = 128) = 19.47, p < .001. This single discriminant function had a canonical r of .60 (R^2 = .36), which indicates that this model accounts for 36% of the variance in group membership. The canonical discriminant function coefficients revealed that death-related words (standardized canonical discriminant function coefficient = .99, unstandardized canonical discriminant function coefficient = 3.30, constant = –1.13) and social processes related words (standardized canonical discriminant function coefficient = .52, unstandardized canonical discriminant function coefficient = .34, constant = –1.13) had a positive relationship with group membership. Examining the group centroids, the more at-risk group had a mean of 1.25 and the more resilient group had a mean of –.43; this suggests that male students with a higher percentage of death and family-related words were more likely to be in the more at-risk group. Using death and family-process words as predictors of the at-risk group membership for male students, 85.1% of the cases were correctly classified into their original group. Analogous to the Time 1 data analyses, there were no significant predictors for female students' at-risk group membership.

Exploratory Qualitative Analyses

Two independent coders were trained to rate the essays on a number of additional characteristics that the LIWC software could not capture, including whether the student wrote about a stressful or traumatic life experience (e.g., separation from loved ones, witnessing community violence, death of a close relative), if the traumatic experience involved another person, and whether overall the essay discussed the future. Table 5 provides a summary of this information. About 31% of students (n = 55) wrote about a stressful life event (independent coder r = .94, p < .001). Of those who wrote about a stressful life event, death was the most commonly written about (n = 22, 40.00%). Eighty-nine percent (n = 47) wrote about family member in relation to this event (3 students wrote about another acquaintance such as a friend or neighbor and 3 students wrote about a stranger). In addition, about 39% of the essays discussed the future in some capacity (n =69) (independent coder r = .59, p < .001), such as expressing a desire to go to college, refraining from doing drugs, always trying to remember a loved who had past away, or learning from past mistakes and not repeating them in the future.

A series of chi-square tests were conducted to explore differences in these coded essay characteristics by gender, ethnicity, and Time 1 and Time 2 at-risk group status. A significant

TABLE 5
Qualitative Coding of Essay Characteristics ($N = 176$)

	n (%)
Stressful-Life Event Discussed	
No stressful event	121 (68.75)
Death	22 (12.50)
Family member sick or injured	9 (5.11)
Personal sickness or injury	6 (3.41)
Divorce or separation of parents	3 (1.70)
Incarceration or jail of close relation	3 (1.70)
Immigrating to the United States	3 (1.70)
Other (i.e., family member's addiction, abuse/severe punishment, new guardian in family, fire, never meeting biological parent)	9 (5.11)
Future Discussed: Yes	69 (39.20)

chi-square was found on whether students reported stress or not between African American and Hispanic students (χ^2 (1) = 5.37, p = .020), with a greater percentage of Hispanic students (n = 17 out of 36, 47.22%) reporting a stressful life event than African American students (n = 38 out of 140, 27.14%). While there was no significant difference in writing about stress when looking at the Time 1 at-risk group membership, there was a significant chi-square using the at-risk clusters created from the Time 2 data (χ^2 (1) = 6.41, p = .011). Using the Time 2 at-risk groups, a greater percentage of students wrote about a stressful life event in the more at-risk group (n = 13 out of 29, 38.24%) than did those in the more resilient group (n = 16 out of 99, 17.02%). There were no other significant chi-square tests.

In addition, four logistic regressions were conducted to examine if the individual teacher-reported and student-reported total resilience factors could predict whether students wrote about a stressful life event or the future in their essay. These analyses, controlled for gender, ethnicity, and word count. Results demonstrated that controlling for all other factors, ethnicity (B = 1.03, odds ratio = 2.81, p = .016), word count (B = .004, odds ratio = 1.00, p = .005), and teacher-reported social skills (B = –.90, odds ratio = .91, p = .039) significantly predicted whether students wrote about a stressful life event in their essays. In other words, Hispanic students, students who wrote longer essays, or students with lower teacher-reported social skills had higher odds of reporting a stressful event in their essays after controlling for the other factors. The results for the Time 2 data were similar, with ethnicity (B = 1.56, odds ratio = 4.75, p = .004) and word count (B = .005, odds ratio = 1.005, p = .009) significantly predicting whether students reported a stressful life event in their essays controlling for gender and the other Time 2 resilience factors. Although teacher-report social skills was significant predictor in an earlier step of the model which only included ethnicity, gender, and word count (B = –.09, odds ratio = .92, p = .021), Time 2 social skills became nonsignificant once the other teacher-rated problem behaviors were added to the model. The logistic regressions of the discussion of the future in the essays did not find any significant predictors.

DISCUSSION

This study demonstrated that characteristics of elementary students' written essays about their personal values were predictive of students being identified as at risk or as resilient. At risk was defined as being rated by their teachers on internalizing, externalizing, and hyperactivity measures as showing high problems in these areas, in conjunction with exhibiting poorer social skills as rated by their teachers and a reduced self-rated self-concept resilience score (e.g., combined ratings of happiness, freedom from anxiety, and behavioral adjustment); conversely, resilient was defined as being low in these problem areas, while exhibiting higher teacher-rated social skills and personal self-concept. Of these ratings, teacher-rated externalizing problems, hyperactivity, and social skills were able to best distinguish between the more at-risk and more resilient students, while the students' self-ratings did not contribute much to this distinction.

Once these at-risk and resilient groups were established, the following characteristics from their Laws of Life essays were explored as being potential predictors of at-risk group membership: personal pronouns, social processes, family, friends, positive emotion, anxiety, anger, sadness, insight, death, and word count. Results revealed that the percentage of death-related words in the students' essays was related to Male students and Hispanic students being more likely to be identified as at risk. In addition, the percentage of social process-related words was also a significant predictor for Hispanic students, with a lower percentage of social process words in an essay being an indicator that a Hispanic student was more likely in the at-risk group of students. This is compatible with previous research, which has found that social supports can buffer against exposure to community stressors (Muller et al., 2000).

The initial findings in the current study were replicated using data from a second time point. Additionally, in this Time 2 data analysis, the percentage of death-related words from African American students' essays also predicted at-risk student status and the percentage of family-related words became a second predictor for male students, with more family words in a students' essay being associated with male students being identified as at risk. The difference in directionality between the social process words for Hispanic predicting resilience versus family-related words (which is a subtype of social words) predicting risk group membership for Male students is worth noting although it is unclear why this difference occurred. It is possible that Male students in the at-risk group were more likely to discuss family in their essays in the context of stressful or negative experiences, while Hispanic students discussed social processes in general in more supportive terms. Further examination of this difference in future research is necessary to better understand this phenomenon.

Overall, these results are further evidence in the growing body of literature that has found that characteristics of expressive writing are associated with well-being and psychological stress (e.g., Niederhoffer & Pennebaker, 2009; Pennebaker & Seagal, 1999; Rude et al., 2004; Sylvestre et al., 2012; Van Dyke & Elias, 2008). In numerous works of Pennebaker and his colleagues written expression has been predictive of psychological distress or adjustment. Similarly, prior work examining the Laws of Life essays found that the negative content in these essays (e.g., death-related words) was predictive of internalizing symptoms (Sylvestre et al., 2012) and that a discussion of purpose in the essays was associated with greater self-concept (Van Dyke & Elias, 2008).

In addition, the current study provided insight into the lives of children growing up in high stress communities. Notably, about a third of the students discussed some type of stressful life event in their essays. There was a diversity of stressful experiences that were written about, including sickness, injury, or death of a family member, divorce of separation of parents, incarceration of a family member, immigrating to the United States, or experiencing a family member's substance

abuse. Interestingly, the writing prompt instructions did not ask the children to write about these topic areas but a significant number wrote about it spontaneously, which is potentially very telling in that these stressors may be particularly salient to their identity and how they construct what is important to them. Moreover, results indicated that students who wrote about a stressful event were more likely to be in the at-risk cluster derived from the Time 2 student and teacher variables. This suggests that there may be something unique about students who choose to write about these stressful life experiences in relation to personal values. Expressive writing programs, and the Laws of Life model in particular, may help teachers gain insights into their students, which can help stimulate follow-up conversations and foster positive student-teacher relationships.

Limitations and Suggestions for Future Research

This study is not without limitations. First, this study used a self-report measure of student resilience, which appeared to have a ceiling effect. As the majority of students rated themselves very highly on their overall happiness and satisfaction and did not report having much anxiety or behavioral problems (e.g., the average on this measure was about 19 out of 23 possible points), this variable was not able to distinguish between types of students as well as the teacher-rated aspects of risk and resilience. One potential challenge of the student measure may be that it used dichotomous items, which forced students to choose to identify as either positive or negative without an in-between choice. It is difficult to know if the students who indicated that they had a strong self-concept actually felt that way or were biased in their report to seem more positive. Future research could benefit from having additional measures completed by students to corroborate their self-report, as well as using other observers of the students' behavior, such as their parents, who might provide an additional perspective.

Another limitation of this study was challenges in retention between the administration of the surveys at Time 1 and Time 2. This high mobility rate is not uncommon in schools from lower income communities (U.S. Government Accountability Office, 2010); however, it is something that researchers in these settings must take into account. Relatedly, this study was limited to a very specific population of students, all in the fifth grade and all from a low-SES school district. Therefore, these results may not be generalizable to other age groups or students from different socioeconomic levels. Additionally, students at this developmental stage may just be beginning to be able to be self-reflective and organize their thoughts in ways that are stable and reflective of their status, thus it is possible that as students get older that the content of their essays would more accurately reflect how they navigate difficult situations and make meaning of their experiences. Future research should explore if death and social processes are important risk and resilience identifiers in more diverse populations, or if other student values or concerns are better able to distinguish for these different groups of children.

Lastly, while exploring the relationship of stress and resilience in the Laws of Life essays is possible as students spontaneously wrote about these topics, this was not an explicit goal of the essays. Additional research comparing children asked to write about a stressful experience and what they learned from it versus children who spontaneously incorporate negative experiences in the discussion of their identity may provide some needed insight into how these stressors play a role in the identity development of children.

While the values students held did not predict their risk-resilience status, some concerns that they spontaneously expressed in their essays were related. Like much of Pennebaker's work on using written expression to process stressful experiences, the Laws of Life essays may provide an accessible method for

students to express negative experiences that have the most meaning for them. What clearly does deserve to be explored are the ways in which ongoing writing and related activities (e.g., such as adult-child or peer-peer discussion) can help enhance resilient functioning, especially in youth at high risk of poor outcomes.

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