Article

Youth & Society
1–26

DOI: 10.1177/0044118X14563049
yas.sagepub.com

Examining the Link Between Stress Events and Prosocial Behavior in Adolescents: More Ordinary Magic?

Andrea Larson[1] and Tally Moses[1]

Abstract

Scholarship regarding adolescent resilience has typically defined resilience as the absence of negative outcomes rather than the existence of positive outcomes. This study drew on the challenge model of resilience, which anticipates a curvilinear relationship between stress exposure and adaptive functioning, to test whether adolescents reporting moderate levels of stress exposure were more likely to evidence prosocial behavior than youth exposed to more or less stress. Using data from approximately 13,000 adolescents, we tested three analytic models and investigated hypothesized moderation by coping, social resources, and markers of adolescent status. Our results did not align with the challenge model. Instead, we found that stress exposure was differentially associated with measures of prosocial behavior, that social resources supported volunteering but impeded helping a peer in some instances, and that markers of historically marginalized status were more predictive of stopping peer harassment than volunteering. Implications for future research are discussed.

Keywords

prosocial involvement, stress, social inequality

[1]University of Wisconsin–Madison, USA

Corresponding Author:
Andrea Larson, School of Social Work, University of Wisconsin–Madison, 1350 University Ave., Madison, WI 53706, USA.
Email: andrealarson@wisc.edu

Introduction

Youth will experience stress events as part of the life course. These stressors range between relatively common events (e.g., a sick family member), adverse events (e.g., institutionalization), and events that threaten the safety of the youth (e.g., abuse or neglect). Such events incite stress, a physical, cognitive, emotional, and behavioral response to a stimulus perceived as threatening or challenging (Ciccarelli & White, 2012). Links between stressful events and deleterious outcomes have been well documented (Davies, 2011; Masten, 2014). Evidence suggests accumulation matters: More stress relates to worse outcomes (Sameroff, Gutman, & Peck, 2003). At the same time, there is variation in the effect of stress across individuals, stages of development, and contexts (Karatoreos & McEwen, 2013; Rutter, 1987). Some experience debilitating distress in response to stress whereas others endure without noticeable upset.

Evidence suggests positive adaptation in the face of adversity is common and perhaps should be expected (Masten & Powell, 2003). The definition of resilience has been much debated (Haskett, Nears, Ward, & McPherson, 2006), but the term most often refers to the avoidance of negative outcomes associated with risk factors (Luthar, Cicchetti, & Becker, 2000). Resilience is said to result from a series of transactions between youth and their environment, a process that involves accessing and using assets and/or resources after exposure to stress (Yates, Egeland, & Sroufe, 2003). "Assets" are internal factors, often operationalized as cognitive or personality strengths (e.g., Brady, Winston, & Gockley, 2014; Sameroff et al., 2003), the absence of psychopathology (e.g., Fergusson & Horwood, 2003), or competence in a domain (Flores, Cicchetti, & Rogosch, 2005). "Resources" refer to external factors that promote resilience (Fergus & Zimmerman, 2005) and may be identified, for example, in the home, school, or neighborhood (e.g., Christiansen & Evans, 2005). Given its commonality, the process of resilience relies on the normalities of life and has been aptly labeled "ordinary magic":

> Individuals are capable of astonishing resistance, coping, recovery, and success in the face of adversity, equipped only with the usual human adaptational capabilities and resources, functioning normally. (Masten & Powell, 2003, p. 15)

One of the most commonly researched correlates of resilience, considered an asset, is coping. Coping relates to "efforts to regulate emotion, cognition, behavior, physiology, and the environment in response to stressful events" (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001, p. 89) with the purpose of overcoming or managing stress (Lazarus, 1974). While coping is typically hypothesized to be an asset that indicates underlying

personality and cognitive structures (Sameroff et al., 2003), coping may be variable across situations as the individual adjusts to changing demands (Compas et al., 2001).

Voluntary attempts to cope with stress are commonly termed primary or secondary control strategies. Primary control strategies engage with the stressor, altering the event's circumstances or consequences, whereas secondary control strategies focus on adaptation to the stress (Connor-Smith & Compas, 2004). Measures of primary and secondary control strategies are consistently related to better outcomes in terms of psychological adjustment (e.g., Fear et al., 2009) and health (e.g., Schreier & Chen, 2008), particularly when strategies include problem solving or cognitive restructuring (Compas et al., 2001).

Resources are intrinsic to the process of resilience (Sameroff et al., 2003) and can work separately or in concert to influence outcomes (Fergus & Zimmerman, 2005; ; Masten & Powell, 2003). In the home, family cohesion, the extent of parental engagement, and supervision of youth have been defined as protective (Fergusson & Horwood, 2003; Luthar, 2003). Factors consistently associated with better outcomes include adolescents' ratings of parental support and family cohesion (e.g., Hammen, 2003). School engagement is found to be protective, particularly in terms of achievement (Masten & Powell, 2003) and discouraging involvement in drug use and antisocial behavior (Perkins & Jones, 2004). An adolescent's residential neighborhood can also function as a resource, particularly when the neighborhood is safe, displays collective supervision, and offers opportunities for healthful activities (Masten & Powell, 2003). Conversely, social conditions may function as risk factors if they include the presence of negative peer groups, socioeconomic disadvantage, or violence (Cauce, Stewart, Rodriguez, Cochran, & Ginzler, 2003). In sum, an adolescent's perception of parent, school, and neighborhood support likely signifies the identification of resources hypothesized to influence the resilience process (Christiansen & Evans, 2005).

The Challenge Model of Resilience

Although stress is often assumed to be disadvantageous, there also exists eustress, or stress that promotes functioning and may lead to growth (Bonanno, 2004; Lazarus, 1974; Nelson & Simmons, 2011). Although stressful life events often have undesirable consequences, stressful events may incite some adolescents to evidence resilience. This idea draws upon the Yerkes–Dodson Law of Arousal, an observed curvilinear relationship between arousal and performance which indicates that individuals' functioning improves with physiological arousal up until a certain point, after which greater arousal predicts diminishing functioning (Teigen, 1994; Yerkes &

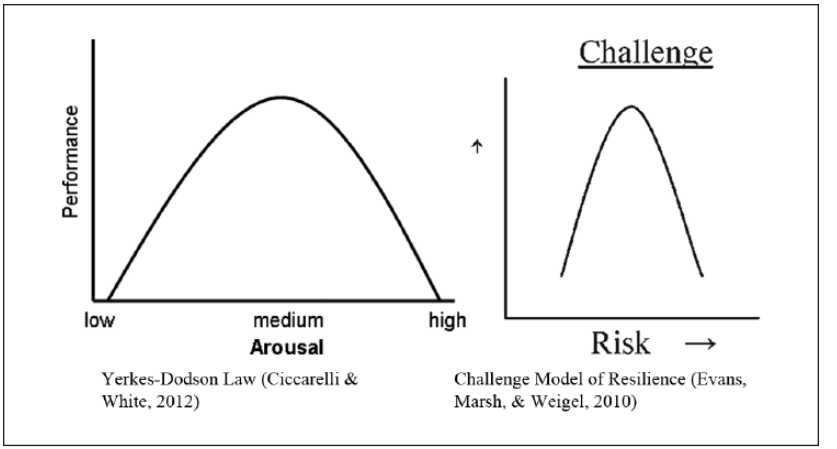

Figure 1. Theoretical frameworks.

Dodson, 1908). This law predicts that an adolescent faced with a simple, familiar, non-demanding task will fare better at a high-moderate level of arousal, whereas an adolescent faced with a novel, complex, or demanding task will fare better at low-moderate level of arousal (see Figure 1).

Although arousal (i.e., physiological or cognitive alertness) and stress are not synonymous, researchers have applied the same principle to test whether exposure to certain levels of stress promotes the resilience process. The *challenge model of resilience* suggests that some degree of stress exposure promotes functioning (Evans, Marsh, & Weigel, 2010; Garmezy, Masten, & Tellegen, 1984). The challenge model posits a curvilinear association, with both high and low levels of stress exposure associated with poor outcomes, while moderate exposure to stress may be associated with relatively positive outcomes. Theoretically, introduction to a moderate level of stress provides opportunity to exercise stress management skills and engage environmental resources without becoming overwhelmed (Fergus & Zimmerman, 2005; Hollister-Wagner, Foshee, & Jackson, 2001).

The challenge model has been tested in relation to adolescent outcomes including risk for victimization, depression, and aggression (Christiansen & Evans, 2005; Erdem & Slesnick, 2010; Hollister-Wagner et al., 2001). The noted studies considered risk factors (e.g., exposure to violence, family conflict) and factors promoting resilience (e.g., neighborhood cohesion, task-oriented coping) and found that at a moderate level of risk exposure, adolescents were less likely to experience negative outcomes than adolescents exposed to lower or higher levels of risk. Studies testing this association

have uncovered variation according to youth characteristics as the challenge model has been found, at times, to better predict associations for females than males (Evans et al., 2010; Hollister-Wagner et al., 2001).

In addition to the influence of exposure to stress, the *nature* of stress may also affect the expression of resilience. Different qualities of adverse events (i.e., predictability, chronicity, extremity) may contribute to different outcomes (Connolly, Eberhart, Hammen, & Brennan, 2010). Research pertaining to the negative effects of stress indicates that various adverse life experiences have differential effects related to trauma and symptoms of mental health disorders. For instance, antisocial behavior among young adults was found to be better predicted by exposure to child maltreatment than by exposure to intimate partner violence, indicating that these adverse experiences were not equivalently harmful (Park, Smith, & Ireland, 2012). Similarly, research examining the associations between various types of stress events and trauma symptoms has found that interpersonal events (e.g., divorce, sexual harassment) relate to more trauma symptomatology in comparison with non-interpersonal events (Lancaster, Melka, & Rodriguez, 2009). Others have examined the differential effects of experienced versus observed stressful events, generally finding that experiencing stress events directly (e.g., child abuse) is related to a greater risk of mental health problems when compared with observing stress events happen to others (e.g., parental substance abuse; Copeland, Keeler, Angold, & Costello, 2007; Ford, Elhai, Connor, & Frueh, 2010; Price, Higa-McMillan, Kim, & Frueh, 2013). The impact of types of stress on youth functioning has not been well examined and thus is an important area for further research.

Prosocial Behavior as an Important Outcome

Although a number of outcomes could be considered in an investigation of the challenge model of resilience, we choose to consider a variable associated with adaptive functioning: prosocial behavior. Prosocial behavior can be defined as behavior that demonstrates concern for another's well-being, such as "sharing, donating, caring, comforting, and helping" (Caprara, Alessandri, & Eisenberg, 2012, p. 1289). Prosocial behavior suggests competence in the social, emotional, cognitive, and behavioral developmental realms (Eisenberg, Morris, McDaniel, & Spinrad, 2009; Flores et al., 2005; Tolan, Lovegrove, & Clark, 2013) and is often measured as empathetic responding, social inclusion, volunteering, and civic engagement (Eisenberg et al., 2009). Prosocial behavior has been studied as a marker for resilience and positive development (Barry & Wentzel, 2006; Bell, Romano, & Flynn, 2013; Cabrera, Beeghly, & Eisenberg, 2012; Griese & Buhs, 2014), and as a correlate of

resilience (Howell, Graham-Bermann, Czyz, & Lilly, 2010). Certainly, positive youth development programs and clinical interventions routinely focus on helping youth develop prosocial behavioral skills (e.g., Dworkin, Larson, & Hansen, 2003; Eccles & Templeton, 2002; Hicks, Hicks, & Bodle, 1992; Morrissey & Werner-Wilson, 2005).

Some evidence suggests that exposure to stress events may increase prosocial behavior (Frazier et al., 2013; Vollhardt, 2009). Frazier and colleagues (2013) recently examined this association in a young adult university sample. They operationalized prosocial behavior as volunteering and daily helping behavior, a decision well suited to the population due to the salience of peers, opportunities for daily helping, and institutional encouragement of volunteering. Results of this study suggested that exposure to stressful events was associated with increases in prosocial behavior. This association remained after controlling for known correlates and applied to both lifetime and recent exposure to stress events.

Furthermore, while it is indisputable that socially or economically disadvantaged youth are disproportionately exposed to a range of stressful events (Brady et al., 2014), emerging evidence suggests that prosocial behavior may be quite common among these youth. Recent studies suggest that prosocial behavior is more commonly expressed among economically disadvantaged individuals due to decreased resources, greater dependence on reciprocal aid, and greater concern for others (e.g., Keltner, Kogan, Piff, & Saturn, 2014; Piff, Stancato, Cote, Mendoza-Denton, & Keltner, 2012), though this association is not consistent across all measures of prosocial behavior (Bandy & Ottoni-Wilhelm, 2012). We are unaware of empirical studies documenting similar associations with racial/ethnic or sexual minority statuses. However, we anticipate identification with a historically marginalized group may increase prosocial behavior for similar reasons. Evidence suggests adolescent females tend to score higher on prosocial measures than males (Barry & Wentzel, 2006; Eisenberg, Fabes, & Spinrad, 2006) and are more likely to engage in particular prosocial behaviors, such as volunteering (Penner, Dovidio, Pilavin, & Schroeder, 2005), though the association between gender and prosocial behavior appears to differ by age and race (Beutel & Johnson, 2004; Hay, 1994) and may vary across contexts (Eagly, 2009).

Our study builds on the work of Frazier and colleagues (2013) by testing the association between exposure to stress events and prosocial behavior in an adolescent population and examining potential moderation by coping, social resources, and youth characteristics. To our knowledge, only one other study considering the challenge model of resilience has investigated an advantageous outcome rather than avoidance of a negative outcome (Evans et al., 2010). We hypothesize the following:

Hypothesis 1: Adolescents who report moderate exposure to stress events will also report more prosocial behavior than adolescents reporting more or less stress event exposure.
Hypothesis 2: The association between stress event exposure and prosocial behavior will be moderated by self-reported use of coping strategies and perceived availability of social resources, with coping and social resources positively accentuating the association between stress and prosocial behavior at all levels of stress exposure.
Hypothesis 3: This association will additionally vary by gender, racial/ethnic minority status, sexuality minority status, and economic advantage, with youth espousing statuses indicative of historic marginalization reporting increased prosocial behavior, after controlling for coping strategies and social resources.

Our analysis of differences in prosocial behavior by experienced versus observed stress is exploratory as previous literature does not provide guidance in terms of directional hypotheses.

Method

The Dane County Youth Assessment (DCYA) surveys 7th- to 12th-grade students in regular and alternative schools in Dane County, Wisconsin. We used secondary data from approximately 14,000 high school students surveyed in the spring of 2012. In line with many other instruments that survey adolescent behavior, such as the Centers of Disease Control and Prevention's National Youth Risk Behavior Survey (Centers for Disease Control and Prevention, 2014), a majority of DCYA items addressed adolescent risk behaviors (e.g., substance use, sexual behavior).

Fifteen of 16 public school districts and 1 private high school participated in this survey, which was administered electronically and with anonymity. The final sample included adolescents who answered at least one of the stress event questions. Adolescents with missing data on any other variable of interest were deleted listwise, dropping the sample size to 12,516.

Measures

Prosocial behavior. Two items pertaining to prosocial behavior, volunteering and stopping the harassment of another student, were addressed directly in the DCYA. Because we were interested in investigating an adaptive outcome, we utilized these items despite acknowledged limitations of the data.

Volunteering. Adolescents reported the amount of volunteering they completed in the past year. Prosocial behavior was dichotomized with (1) indicating volunteering at least once per month and (0) indicating less regular or no volunteering.

Stopping harassment. Adolescents reported the number of times they stopped the harassment of another student in the past 30 days, from (1) *never* to (4) *5 or more times*. Although this measure did not consider the frequency of observing harassment, which could alter the opportunity to stop harassment, research suggests peer harassment is a common experience among high school students (e.g., Wang, Iannotti, & Nansel, 2009).

Stress events. The DCYA addressed exposure to lifetime stress exposure, including (a) running away, (b) homelessness, (c) being kicked out of the home, (d) foster care placement, (e) group home placement, (f) juvenile justice corrections/imprisonment, (g) parent imprisonment, (h) physical abuse, (i) parental alcohol abuse, (j) parental drug abuse, (k) parental domestic violence, (l) rape or sexual assault, (m) intimate partner violence–physical, and (n) intimate partner violence–sexual. Respondents were asked to report whether they had ever experienced the event (1 = yes, 0 = no).

For the multivariate regression models, exposure to stress events was tested in three ways. First, we defined stress events as a continuous count variable and used a quadratic term to test for the presence of a curvilinear association. Next, based on the distribution of reported events, we divided stress exposure into three categories: (a) zero events, (b) one or two events, and (c) greater than two events. This categorical approach should, if applied correctly, also be able to identify a curvilinear association between stress and prosocial behavior. Finally, we divided stress events into events that were experienced (e.g., homelessness, foster care placement, rape, or sexual assault) and events that were observed (e.g., parental substance abuse, parental domestic violence). We tested this variable using the continuous and categorical approaches noted above.

Primary and secondary control coping. Three items fit the concepts of primary and secondary control coping: (a) when things go wrong in my life, I think of ways to solve the problem; (b) when things go wrong in my life, I am able to calm myself down; and (c) when things go wrong in my life, I try to see the good that can come of the situation. Adolescents reported how often they used the strategy, from (1) *never* to (4) *always*. Scores were averaged to create a composite coping score ($\alpha = .75$, $M = 2.85$, $SD = 0.73$).

Social resources. The survey inquired about perceptions of parental, school, and neighborhood resources. Seven items addressed parental resources, including "my parents encourage me to do well." Adolescents reported how often the statement applied to them, from (1) *never* to (4) *always*. Six items addressed school resources, including "there are adults I can talk to at school if I have a problem." Adolescents reported their level of agreement with the statement, from (1) *strongly disagree* to (4) *strongly agree*. Five items addressed neighborhood resources, including "I feel safe in my neighborhood." Adolescents reported their level of agreement from (1) *strongly disagree* to (4) *strongly agree*. All scales evidenced good reliability (parental resources, $\alpha = .83$; school resources, $\alpha = .81$; neighborhood resources, $\alpha = .84$). Analysis of a correlation matrix showed these measures of social support were moderately correlated ($r = .41$, $p < .001$; $r = .38$, $p < .001$; and $r = .46$, $p < .001$, respectively). Because we were primarily interested in the perception of social resources in sum, rather than in terms of differential inputs of various types of social resources, these scales were summed and averaged to create a single social resources variable ($M = 3.18$, $SD = 0.46$). The distribution was skewed left, with more than 50% of the sample reporting a mean social resources score of 3.21 or higher (on a scale of 1-4).

Youth characteristics. For reasons stated above, we considered the following youth characteristics: gender (*n* female = 6,446, 51.5%), racial/ethnic minority status (mutually exclusive: *n* White = 10,199, 81.49%; *n* Black = 592, 4.73%; *n* Hispanic = 634, 5.07%; *n* Asian = 522, 4.17%; *n* Other = 569, 4.54%), sexual orientation (*n* heterosexual = 11,702, 93.5%; *n* gay or lesbian = 141, 1.13%; *n* bisexual = 401, 3.2%; *n* questioning = 272, 2.17%), and receipt of free lunch (*n* receive free lunch = 2,128, 17%). To account for potential developmental differences in the associations of interest, we included age in years as a covariate in relevant models ($M = 15.91$, $SD = 1.23$).

As our hypotheses primarily focused on the impact of historic marginalization, we dichotomized the race/ethnicity and sexual orientation variables so that adolescents identifying as other than White and heterosexual were defined as espousing a historically marginalized status. Although this approach overlooked important variation between subgroups, it theoretically allowed for consideration of any underlying dynamic constant within status.

Analytic Approach

After completing univariate and bivariate analyses, we used a multivariate regression equation to test for independent effects of each variable on prosocial behavior. Logistic regression was used to examine associations between

explanatory variables and the categorical outcome variable of volunteering regularly. Ordered logistic regression was used to examine associations between explanatory variables and the ordinal outcome variable of stopping the harassment of another student. After centering relevant variables, interaction terms were entered to investigate moderating effects of coping, social resources, and marginalized status.

Results

Approximately 67% of the sample (n = 8,330) reported no lifetime experience of the stress events analyzed. Twenty-four percent (n = 3,009) reported experiencing one or two stress events, and approximately 9% (n = 1,177) reported experiencing more than two events. Exposure to a parental figure abusing alcohol was the most frequently reported event (n = 1,438, 11.5%), while incarceration in juvenile corrections or prison was the least frequently reported event (n = 222, 1.8%). Fewer than 25% of respondents reported personally *experiencing* stress events (n = 3,044, 24.32%) and fewer than 20% reported *observing* stress events happen to others (n = 2,328, 19.6%). A moderate correlation between experiencing and observing stress events was observed (r = .51, p < .001).

Bivariate Analyses

Exposure to stress events differed by adolescent characteristics. Notably, racial/ethnic minority status (t = 22.07, p < .001), sexual minority status (t = 32.84, p < .001), economic disadvantage (t = 27.26, p < .001), and age (t = 2.13, p < .05) were positively associated with exposure to stress events. No difference was found in terms of gender (t = 0.29, p > .05). Prosocial behavior also differed by adolescent characteristics. Racial/ethnic minority (odds ratio [OR] = 0.80, z = −3.99, p < .001), sexual minority (OR = 0.72, z = −3.65, p < .001), and economically disadvantaged adolescents (OR = 0.59, z = −8.7, p < .001) were less likely to volunteer whereas females (OR = 1.61, z = 11.3, p < .001) and older adolescents (OR = 1.12, p < .001) were more likely to volunteer regularly. Alternately, females (OR = 1.10, z = 2.75, p < .05), racial/ethnic minority (OR = 1.15, z = 3.13, p < .05), sexual minority (OR = 1.77, z = 8.04, p < .001), economically disadvantaged (OR = 1.37, z = 6.7, p < .001), and younger adolescents (OR = 0.92, p < .001) were more likely to report stopping harassment. Coping differed by adolescent characteristics as well, with female (t = −14.64, p < .001), sexual minority (t = −12.05, p < .001), economically disadvantaged (t = −3.17, p < .01), and younger adolescents (t = 7.16, p < .001) reporting fewer coping skills. We found no difference in coping by racial/ethnic status (t = 0.99, p > .05). Racial/ethnic minority (t =

−17.67, $p < .001$), sexual minority ($t = -20.69$, $p < .001$), economically disadvantaged ($t = -23.54$, $p < .001$), and older adolescents ($t = -3.96$, $p < .001$) perceived fewer social resources, whereas female gender was associated with greater perception of social resources ($t = 2.54$, $p < .05$).

Volunteering

We first tested stress exposure as a continuous variable and included a quadratic stress term. Our first model suggested a negative linear association between stress exposure and volunteering (OR = 0.92, $z = -5.88$, $p < .001$), and our second model evidenced a significant quadratic term, but the curvilinear association acted in the opposite direction hypothesized (OR = 1.01, $z = 2.79$, $p < .01$). However, this significant association between stress and volunteering was accounted for once coping, social resources, and adolescent characteristics were added to the model. We found that endorsement of coping (OR = 1.13, $z = 3.90$, $p < .001$) and perception of social resources (OR = 1.74, $z = 9.74$, $p < .001$) were positively and consistently associated with volunteering, controlling for exposure to stress and youth characteristics, but noted no moderating effect of either variable. We also found positive main effects for female gender (OR = 1.67, $z = 11.97$, $p < .001$) and age (OR = 1.13, $z = 7.26$, $p < .001$), and a negative main effect of economic disadvantage (OR = 0.65, $z = -6.34$, $p < .001$). These findings indicated that the odds of volunteering were approximately 70% higher among females, when compared to males, and each 1 year increase in age was associated with an approximately 13% increased odds of volunteering regularly. In addition, the odds of volunteering among adolescents who received free lunch were 35% lower than their more advantaged peers, controlling for stress events, coping, social resources, and other statuses. We found no significant interactions by status (results not shown but available upon request).

Results of the models using the categorical stress variable and the continuous and categorical forms of experienced stress told a similar story. Although our first categorical model, considering all stress events, indicated a negative linear association between stress exposure and volunteering (0 events: omitted; 1-2 events: OR = 0.76, $z = -5.31$, $p < .001$; >2 events: OR = 0.65, $z = -5.51$, $p < .001$), this association was accounted for by coping, social resources, and adolescent characteristics. We found positive main effects for coping, social resources, female gender, and age. We also found a negative main effect of economic disadvantage on volunteering in the full categorical model (see Table 1), and in the continuous and categorical models of experienced stress (results not shown but available upon request). Again, no interaction terms were significant.

Table 1. Categorical Stress Predictor and Prosocial Behavior (n = 12,516).

	OR (*SE*)	OR (*SE*)	OR (*SE*)	OR (*SE*)	OR (*SE*)
Volunteering					
Stress (1-2)	0.76*** (.04)	0.88* (.05)	0.89* (.05)	0.91 (.05)	0.96 (.08)
Stress (>2)	0.65*** (.05)	0.93 (.08)	0.95 (.09)	1.00 (.10)	0.95 (.15)
Coping		1.08** (.03)	1.08* (.04)	1.13*** (.04)	1.14*** (.04)
Social resources		1.80*** (.10)	1.76*** (.12)	1.69*** (.12)	1.66*** (.12)
Stress (1-2) × Coping			0.95 (.07)	0.96 (.07)	0.92 (.07)
Stress (>2) × Coping			1.07 (.11)	1.08 (.11)	1.07 (.11)
Stress (1-2) × Social resources			1.06 (.14)	1.08 (.14)	1.12 (.15)
Stress (>2) × Social resources			1.04 (.16)	0.98 (.15)	1.02 (.16)
Female				1.68*** (.07)	1.76*** (.09)
Racial/ethnic minority				1.04 (.06)	0.99 (.08)
Sexual minority				0.86 (.08)	0.88 (.12)
Free lunch				0.66*** (.04)	0.58*** (.06)
Age				1.14*** (.02)	1.14*** (.02)
Stress (1-2) × Female					0.82 (.09)
Stress (>2) × Female					0.97 (.16)
Stress (1-2) × Racial/ethnic minority					1.16 (.16)
Stress (>2) × Racial/ethnic minority					1.06 (.20)
Stress (1-2) × Sexual minority					0.82 (.19)
Stress (>2) × Sexual minority					1.09 (.25)
Stress (1-2) × Free lunch					1.29 (.20)
Stress (>2) × Free lunch					1.27 (.24)
Stopping harassment					
Stress (1-2)	1.44*** (.06)	1.48*** (.06)	1.51*** (.07)	1.49*** (.07)	1.56*** (.11)
Stress (>2)	2.39*** (.15)	2.54*** (.17)	2.23*** (.17)	2.16*** (.17)	2.35*** (.28)
Coping		1.18*** (.03)	1.16*** (.04)	1.20*** (.04)	1.19*** (.04)
Social resources		0.99 (.04)	1.06 (.06)	1.05 (.06)	1.06 (.07)
Stress (1-2) × Coping			1.02 (.06)	1.03 (.06)	1.04 (.06)
Stress (>2) × Coping			1.03 (.08)	1.05 (.08)	1.03 (.08)
Stress (1-2) × Social resources			1.00 (.11)	1.02 (.11)	0.99 (.11)
Stress (>2) × Social resources			0.68** (.08)	0.73** (.09)	0.75* (.09)
Female				1.11** (.04)	1.12** (.05)

Table 1. (Continued)

	OR (*SE*)	OR (*SE*)	OR (*SE*)	OR (*SE*)	OR (*SE*)
Racial/ethnic minority				0.96 (.05)	0.95 (.07)
Sexual minority				1.49*** (.11)	1.34*** (.15)
Free lunch				1.15** (.06)	1.29*** (.10)
Age				0.90*** (.01)	0.90*** (.01)
Stress (1-2) × Female					1.00 (.08)
Stress (>2) × Female					0.85 (.11)
Stress (1-2) × Racial/ethnic minority					0.94 (.11)
Stress (>2) × Racial/ethnic minority					1.11 (.16)
Stress (1-2) × Sexual minority					1.13 (.20)
Stress (>2) × Sexual minority					1.31 (.24)
Stress (1-2) × Free lunch					0.82 (.10)
Stress (>2) × Free lunch					0.80 (.12)

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

In the models that considered only observed stress, however, we noted one disparate finding: a curvilinear pattern, again in the opposite direction hypothesized, maintained significance in all continuous stress models. This indicated that adolescents who reported a moderate exposure to observed stress were *less* likely to volunteer than adolescents exposed to no stress or to high levels of stress (OR = 1.10, $z = 2.77$, $p < .01$). This pattern was not observed in the categorical model that considered observed stress only. Observing one or two events (OR = 0.61, $z = -8.10$, $p < .001$) or more than two events (OR = 0.49, $z = -4.02$, $p < .001$) was associated with a reduced odds of volunteering when compared to observing no events. The difference between one or two and more than two events was not significant (OR = 1.17, $z = 1.87$, $p > .05$). Although the negative association between observing one or two events and volunteering regularly remained significant in all models, the negative association between observing more than two events and volunteering was accounted for by coping, social resources, and adolescent characteristics (OR = 0.91, $z = -0.43$, $p > .05$).

Stopping Harassment

When we investigated the outcome of stopping the harassment of peers, no indication of a curvilinear association was noted between stress and stopping harassment in any model. Instead, we found a consistent linear main effect, suggesting that stress exposure was positively associated with stopping the harassment of peers.

In the model that considered stress as a continuous variable, we noted a positive main effect of stress (OR = 1.23, $z = 15.47$, $p < .001$), coping (OR = 1.20, $z = 7.00$, $p < .001$), and, in contrast to the results for volunteering, no effect of perceived social resources (OR = 1.04, $z = 1.04$, $p > .05$). We noted positive effects of female gender (OR = 1.11, $z = 2.95$, $p < .01$), economic disadvantage (OR = 1.16, $z = 2.86$, $p < .01$), and sexual minority status (OR = 1.38, $z = 4.35$, $p < .001$), and a negative main effect of age (OR = 0.90, $z = -7.14$, $p < .001$). The interaction effect between stress and economic disadvantage was significant (OR = 0.94, $z = -2.56$, $p < .01$), indicating that for each one-event increase in stress exposure, the odds of economically disadvantaged adolescents coming to the aid of their peers decreased by approximately 6%, compared to their more advantaged peers.

The categorical models displayed similar results, indicating that while the odds of adolescents exposed to one or two stress events stopping the harassment of peers were approximately 50% higher than adolescents reporting exposure to no stress events, adolescents exposed to more than two stress events were most likely to stop harassment (see Table 1). Again, coping was positively associated with prosocial behavior while perception of social resources was not. In the categorical model, we found a significant high stress by social resources interaction, suggesting that the odds of adolescents exposed to more than two stress events stopping the harassment of their peers decreased by approximately 30% for each one-unit increase in their perception of social resources, compared with adolescents who experienced no stress events. Again, female gender, sexual minority status, and economic disadvantage were positively associated with stopping harassment, and age showed a negative association. No interaction by status was noted.

Results from the tests that considered experienced stress showed the same pattern of results as noted for stress exposure in total, with stress exposure (OR = 1.32, $z = 16.23$, $p < .001$), coping (OR = 1.21, $z = 7.13$, $p < .001$), female gender (OR = 1.11, $z = 2.90$, $p < .01$), sexual minority status (OR = 1.36, $z = 4.18$, $p < .001$), and economic disadvantage (OR = 1.21, $z = 3.60$, $p < .001$) evidencing positive associations with stopping harassment and age showing a negative association (OR = 0.90, $z = -7.28$, $p < .001$). In addition, we found significant stress by coping (OR = 1.04, $z = 2.57$, $p < .01$), stress by

social resources (OR = 0.95, $z = -2.01$, $p < .05$), and stress by economic disadvantage interactions (OR = 0.92, $z = -2.38$, $p < .05$). This indicated that, for adolescents who experienced stress, coping increased the odds of stopping harassment as stress events increased. However, perception of social resources and economic disadvantage *decreased* the odds of stopping harassment as exposure to stress increased. In other words, greater perception of social resources attenuated the odds of stopping harassment by approximately 5% for each additional stress event experienced. In addition, for each one-unit increase in experienced stress, the odds of economically disadvantaged adolescents stopping peer harassment fell by approximately 8%, when compared to their more advantaged peers.

Results from the categorical model of experienced stress aligned with results from the continuous stress model, with a few exceptions (see Table 2). No stress by coping interaction was found. The stress by social resources interaction was noted, but only for adolescents exposed to more than two events when compared with adolescents exposed to no events. Specifically, each one-unit increase in perception of social resources corresponded to a 40% decrease in the odds of stopping harassment among adolescents exposed to more than two events, when compared to adolescents exposed to no events. This trend was present in the stress by economic disadvantage interaction as well, where only economically disadvantaged adolescents who reported exposure to more than two events were significantly less likely to stop harassment than their more advantaged peers, compared with adolescents exposed to no stress events.

Models considering only observed stress showed somewhat different results. We again found positive main effects for stress exposure (OR = 1.24, $z = 7.23$, $p < .001$), coping (OR = 1.19, $z = 6.50$, $p < .001$), female gender (OR = 1.12, $z = 3.07$, $p < .01$), sexual minority status (OR = 1.62, $z = 6.63$, $p < .001$), and economic disadvantage (OR = 1.22, $z = 3.73$, $p < .001$), and a negative main effect of age (OR = 0.91, $z = -6.71$, $p < .001$). We also noted a stress by social resources interaction, where each one-unit increase in perception of social resources was associated with an approximately 10% reduced odds of stopping harassment as stress exposure increased (OR = 0.90, $z = -2.32$, $p < .05$). We also noted a stress by sexual minority interaction, indicating that the odds of stopping harassment with each increase in stress exposure was accentuated by approximately 20% if an adolescent identified as a sexual minority (OR = 1.21, $z = 2.41$, $p < .05$).

Models that considered categorical observed stress again showed main effects of stress exposure, coping, female gender, sexual minority status, economic disadvantage, and age (see Table 2). We also noted a stress by coping interaction, where coping accentuated the positive association between stress

Table 2. Categorical Stress Predictor (Experienced and Observed) and Stopping Harassment (n = 12,516).

	OR (*SE*)	OR (*SE*)	OR (*SE*)	OR (*SE*)	OR (*SE*)
Stress: Experienced					
Stress (1-2)	1.57*** (.07)	1.64*** (.08)	1.67*** (.08)	1.66*** (.08)	1.77*** (.14)
Stress (>2)	3.12*** (.24)	3.33*** (.27)	3.75*** (.27)	2.67*** (.27)	3.20*** (.49)
Coping		1.18*** (.03)	1.17*** (.04)	1.21*** (.04)	1.20*** (.04)
Social resources		0.99 (.04)	1.04 (.06)	1.03 (.06)	1.04 (.06)
Stress (1-2) × Coping			0.98 (.06)	0.99 (.06)	1.01 (.07)
Stress (>2) × Coping			1.13 (.11)	1.12 (.11)	1.10 (.11)
Stress (1-2) × Social resources			1.00 (.11)	1.09 (.12)	1.07 (.12)
Stress (>2) × Social resources			0.59*** (.08)	0.65*** (.09)	0.64*** (.09)
Female				1.10** (.04)	1.12** (.05)
Racial/ethnic minority				0.93 (.05)	0.94 (.06)
Sexual minority				1.42*** (.10)	1.37** (.14)
Free lunch				1.18*** (.06)	1.29*** (.09)
Age				0.90*** (.01)	0.89*** (.01)
Stress (1-2) × Female					0.98 (.09)
Stress (>2) × Female					0.83 (.13)
Stress (1-2) × Racial/ethnic minority					0.90 (.10)
Stress (>2) × Racial/ethnic minority					1.04 (.18)
Stress (1-2) × Sexual minority					1.08 (.18)
Stress (>2) × Sexual minority					1.10 (.23)
Stress (1-2) × Free lunch					0.86 (.10)
Stress (>2) × Free lunch					0.71* (.12)
Stress: Observed					
Stress (1-2)	1.33*** (.06)	1.32*** (.06)	1.31*** (.07)	1.27*** (.07)	1.37*** (.11)
Stress (>2)	2.76*** (.38)	2.60*** (.37)	1.87*** (.35)	1.72** (.32)	1.93* (.52)
Coping		1.15*** (.03)	1.14*** (.03)	1.18*** (.04)	1.18*** (.04)
Social resources		0.86*** (.04)	0.90* (.05)	0.91 (.05)	0.91 (.05)
Stress (1-2) × Coping			0.94 (.06)	0.95 (.06)	0.95 (.06)
Stress (>2) × Coping			1.53** (.23)	1.51** (.23)	1.46** (.22)
Stress (1-2) × Social resources			0.98 (.11)	1.00 (.11)	1.00 (.11)

Table 2. (Continued)

	OR (*SE*)	OR (*SE*)	OR (*SE*)	OR (*SE*)	OR (*SE*)
Stress (>2) × Social resources			0.51*** (.09)	0.58** (.11)	0.63* (.13)
Female				1.12** (.04)	1.15*** (.05)
Racial minority				0.99 (.05)	0.97 (.06)
Sexual minority				1.61*** (.12)	1.44*** (.13)
Free lunch				1.23*** (.06)	1.32*** (.08)
Age				0.91*** (.01)	0.91*** (.01)
Stress (1-2) × Female					0.89 (.09)
Stress (>2) × Female					0.78 (.23)
Stress (1-2) × Racial/ethnic minority					1.06 (.13)
Stress (>2) × Racial/ethnic minority					1.10 (.36)
Stress (1-2) × Sexual minority					1.42* (.24)
Stress (>2) × Sexual minority					1.53 (.53)
Stress (1-2) × Free lunch					0.81 (.09)
Stress (>2) × Free lunch					0.77 (.23)

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

exposure and stopping harassment, but only for adolescents exposed to more than two events when compared with adolescents exposed to no events. We saw the same pattern in the significant stress by social resources interaction, indicating that the odds of stopping harassment among adolescents exposed to more than two events dropped by approximately 50% as perception of social resources increased, compared with adolescents exposed to no events. We again noted the stress by sexual minority status interaction indicating that sexual minority status positively accentuated the association between stress exposure and stopping harassment, but only for adolescents exposed to one or two events. Implications of these findings are discussed below.

Discussion

Our findings suggest that exposure to stress events was differentially associated with two measures of prosocial behavior, but neither in the manner hypothesized. We did not find support for our first hypothesis regarding the

challenge model of resilience. In fact, we found some evidence that directly refuted this model and instead indicated that moderate exposure to certain types of stress was associated with reductions in prosocial behavior. Our second and third hypotheses were partially supported, and our exploratory analysis of experienced versus observed stress offered evidence that should inspire future inquiry.

Our results suggest stressful life events may be more robustly associated with informal, reactive prosocial behavior (e.g., stopping peer harassment) than prosocial behavior that relies on formal, institutional support (e.g., volunteering). We found a strong, positive linear association between stress exposure and stopping the harassment of peers, but no consistent association between stress and volunteering behavior. Thus, stress and experiencing life circumstances or social statuses that increase the likelihood of exposure to stress may be positively associated with initiation of actions to protect a socially vulnerable peer. This finding is in line with research suggesting that people of lower means with lower social power (who, presumably, would be subject to more life stresses) are more attuned and responsive to individuals who suffer (e.g., Piff, Kraus, Cote, Cheng, & Keltner, 2010). In other words, adolescents who have experienced stressful life events, particularly adolescents who espouse a historically marginalized status and experience stress related to social disadvantage on a consistent basis, may be more responsive to others.

Interestingly, youths' perceptions of social resources did not affect the likelihood of helping a peer unless the adolescent was exposed to multiple stressors, and in that situation perceived social resources were associated with lower rates of prosocial behavior. We conjecture that for these adolescents, the perception of more social resources in the context of pronounced stress may lead to a stronger inclination for self-preservation or relate to a reduced need for sensitivity toward vulnerable others. However, volunteering, a more formal, instrumental prosocial behavior, was not consistently associated with stress exposure and instead was more commonly reported in situations of higher social resources. This is sensible as volunteering is a planned activity requiring access to resources. For youth who are subject to various stressors to engage in structured, pre-planned prosocial activities, certain environmental supports need to be in place. Hence, volunteering may be an inappropriate measure of prosocial behavior in samples including relatively disadvantaged youth.

Coping, the self-reported inclination to engage in more primary and secondary coping strategies, was related to both types of prosocial behavior. Moreover, while coping accounted for part of the association between stress and volunteering, it did not account for any part of the association between stress and stopping harassment. Instead, it appeared that both exposure to

stress *and* exercising coping behaviors contributed to the likelihood of engaging in protective social behavior.

Interestingly, female gender was associated with fewer coping skills, greater perception of social resources, and higher rates of both forms of prosocial behavior, despite there being no evidence of a difference in the experience of stress by gender. Less surprisingly, all other forms of marginalized status and older age were associated with greater exposure to stress and perception of fewer social resources. In addition, younger adolescents, adolescents endorsing sexual minority status, and economically disadvantaged adolescents reported fewer coping skills than their more socially advantaged peers. Although all forms of marginalized status were associated with both forms of prosocial behavior in our bivariate analyses, not all of these associations held in more complex models. The most robust associations concerned gender and economic status, with female gender being positively associated with both forms of prosocial behavior, and economic disadvantage being negatively associated with volunteering and positively associated with stopping harassment. Not surprisingly, older adolescents were more likely to volunteer, but age was also negatively associated with stopping the harassment of peers. Again, these findings point to the differential social dynamics related to expressions of prosocial behavior and warrant further investigation.

Finally, our findings indicate that when investigating the link between stress and prosocial behavior, it is important to consider whether stress events are experienced personally or are observed occurring to others. Although our results for *experienced* stress largely lined up with the results of the models that included all stress, they also indicated that *observed* stress may affect adolescents somewhat differently. Specifically, we found some evidence that moderate exposure to observed stress may impede instrumental prosocial behavior (e.g., volunteering) but not informal prosocial behavior (e.g., stopping harassment). We also noted that marginalized status may serve to impede or support informal prosocial behavior at high levels of stress. Sexual minority status increased the likelihood of stopping harassment in the context of observed stress, while economic disadvantage impeded stopping harassment at higher levels of experienced, but not observed, stress. These findings highlight differences in the association between stress and prosocial behavior based on the type of stress experience and warrant further investigation.

Strengths and Limitations

A major strength of this study is that it considered the effects of stress as well as resources and assets on a positive behavioral marker of the resilience process: prosocial behavior. This is important as much of resilience literature

focuses on psychological traits or the absence of negative outcomes. This study also answers the call for research that incorporates parental, school, and neighborhood support measures and consideration of youth status markers (Fergus & Zimmerman, 2005; Wentzel, Filisetti, & Looney, 2007). At the same time, there are some limitations associated with the data and analysis that must be considered.

The DCYA is a cross-sectional survey that does not permit the examination of changes in variables over time and thus does not control for reverse causality. This also prevents a full testing of the challenge model of resilience, which the authors originally hypothesized would explain the relationship between the variables examined here. Although our sample size was large, the DCYA was implemented with adolescents living in a specific county in a Midwestern state which means these findings are not generalizable beyond a very similar population. Furthermore, the DCYA relies on self-reported data from this sample of adolescents, introducing the potential for response bias. The need for replication using alternate samples, particularly samples that would allow for additional status subgroup analysis, is evident.

Validated scales were not used for the measurement of exposure to stress events, the use of primary and secondary engagement coping strategies, or measurement of prosocial behavior. Notably, we relied on two single-item measures to investigate our outcome of interest. Although all reliability coefficients for multiple-item variables were acceptable, these limitations challenge the validity of our results. It cannot be certain the constructs of interest were adequately measured by the DCYA, so replication of the associations tested here, using validated and reliable measures of the primary variables of interest, would be beneficial.

Individual traits hypothesized to be intimately connected to prosocial behavior, such as empathy, were not examined here. In addition, while we did test different models of our stress variable, only the number of stress events and experienced versus observed stress events were considered, not the adolescent's interpretation of the event, the timing of the event, or the context. Although accumulation of stress events has been used to predict negative outcomes, inclusion of contextual data would improve understanding of the resilience process.

Implications

Notably, our findings align with the recent conceptualization of resilience as less of an individual trait and more intimately connected to an adolescent's social environment and the resources available therein (Ungar, 2011). Specifically, our findings suggested that exposure to stress, perception of

social resources, and markers of marginalized status acted to predict particular forms of an adaptive outcome that we defined as a behavioral marker of resilience: prosocial behavior.

Implications of this research extend to interventions aimed at increasing prosocial behavior in youth, particularly environmentally responsive prosocial behavior. Our results suggest that adolescents exposed to stressful events may have the tools to be adept peer intervention leaders. Furthermore, experiences of marginalization and perceptions of few social resources, often characterized as impediments to positive youth development, may actually serve to bolster prosocial behavior enacted for the benefit of others. If future research supports the associations documented here, service providers, teachers, and others may take the opportunity to capitalize on this perhaps untapped potential of adolescents who have experienced these forms of stress and relative disadvantage.

The results of this study support the opening of a new chapter in our understanding of adolescents who have experienced stressful life events, and adolescents that experience the stress associated with various forms of marginalization. Although there is evidence that exposure to these forms of stress is related to worse outcomes for youth, our work adds to the body of evidence that suggests the experience of stress may be related to prosocial behavior, particularly spontaneous behavior initiated to protect others. These results may not be surprising to those intimately familiar with the process of resilience; they may simply provide evidence for a long-known truth.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

References

Bandy, R., & Ottoni-Wilhelm, M. (2012). Family structure and income during the stages of childhood and subsequent prosocial behavior in young adulthood. *Journal of Adolescence*, *35*, 1023-1034.

Barry, C. M., & Wentzel, K. R. (2006). Friend influence on prosocial behavior: The role of motivational factors and friendship characteristics. *Developmental Psychology*, *42*, 153-163.

Bell, T., Romano, E., & Flynn, R. J. (2013). Multilevel correlates of behavioral resilience among children in child welfare. *Child Abuse & Neglect*, *37*, 1007-1020.

Beutel, A. M., & Johnson, M. K. (2004). Gender and prosocial values during adolescence: A research note. *The Sociological Quarterly*, *45*, 379-393.

Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist*, *59*, 20-28.

Brady, S. S., Winston, W., III, & Gockley, S. E. (2014). Stress-related externalizing behavior among African American youth: How could policy and practice transform risk into resilience? *Journal of Social Issues*, *70*, 314-341.

Cabrera, N. J., Beeghly, M., & Eisenberg, N. (2012). Positive development of minority children: Introduction to the special issue. *Child Development Perspectives*, *6*, 207-209.

Caprara, G. V., Alessandri, G., & Eisenberg, N. (2012). Prosociality: The contribution of traits, values, and self-efficacy beliefs. *Journal of Personality and Social Psychology*, *102*, 1289-1303.

Cauce, A. M., Stewart, A., Rodriguez, M. D., Cochran, B., & Ginzler, J. (2003). Overcoming the odds? Adolescent development in the context of urban poverty. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 343-363). New York, NY: Cambridge University Press.

Centers for Disease Control and Prevention. (2014). *Youth risk behavior surveillance—United States, 2013*. Atlanta, GA: U.S. Department of Health and Human Services.

Christiansen, E. J., & Evans, W. P. (2005). Adolescent victimization: Testing models of resiliency by gender. *The Journal of Early Adolescence*, *25*, 298-316.

Ciccarelli, S. K., & White, J. N. (2012). *Psychology* (3rd ed.). Boston, MA: Prentice Hall.

Compas, B. E., Connor-Smith, J. K., Saltzman, H., Thomsen, A. H., & Wadsworth, M. E. (2001). Coping with stress during childhood and adolescence: Problems, progress, and potential in theory and research. *Psychological Bulletin*, *127*, 87-127.

Connolly, N. P., Eberhart, N. K., Hammen, C. L., & Brennan, P. A. (2010). Specificity of stress generation: A comparison of adolescents with depressive, anxiety, and comorbid diagnoses. *International Journal of Cognitive Therapy*, *3*, 368-379.

Connor-Smith, J. K., & Compas, B. E. (2004). Coping as a moderator of relations between reactivity to interpersonal stress, health status, and internalizing problems. *Cognitive Therapy and Research*, *28*, 347-368.

Copeland, W., Keeler, G., Angold, A., & Costello, E. (2007). Traumatic events and posttraumatic stress symptoms in childhood. *Archives of General Psychiatry*, *64*, 577-585.

Davies, D. (2011). *Child development: A practitioner's guide* (3rd ed.). New York, NY: Guilford Press.

Dworkin, J. B., Larson, R., & Hansen, D. (2003). Adolescents' accounts of growth experiences in youth activities. *Journal of Youth and Adolescence*, *32*, 17-26.

Eagly, A. H. (2009). The his and hers of prosocial behavior: An examination of the social psychology of gender. *American Psychologist*, *64*, 644-658.

Eccles, J., & Templeton, J. (2002). Extracurricular and other after-school activities for youth. *Review of Education*, *26*, 113-118.

Eisenberg, N., Fabes, R. A., & Spinrad, T. L. (2006). Prosocial development. In N. Eisenberg, W. Damon, & R. M. Lerner (Eds.), *Social, emotional, and personality development* (Vol. 3, pp. 646-718). Hoboken, NY: Wiley.

Eisenberg, N., Morris, A. S., McDaniel, B., & Spinrad, T. L. (2009). Moral cognitions and prosocial responding in adolescence. In R. M. Lerner & L. Steinerg (Eds.), *Handbook of adolescent psychology, Vol. 1: Individual bases of adolescent development* (3rd ed., pp. 229-265). Hoboken, NJ: John Wiley.

Erdem, G., & Slesnick, N. (2010). That which does not kill you makes you stronger: Runaway youth's resilience to depression in the family context. *American Journal of Orthopsychiatry*, *80*, 195-203.

Evans, W. P., Marsh, S. C., & Weigel, D. J. (2010). Promoting adolescent sense of coherence: Testing models of risk, protection, and resiliency. *Journal of Community & Applied Social Psychology*, *20*, 30-43.

Fear, J. M., Champion, J. E., Reeslund, K. L., Forehand, R., Colletti, C., Roberts, L., & Compas, B. E. (2009). Parental depression and interparental conflict: Children and adolescents' self-blame and coping responses. *Journal of Family Psychology*, *23*, 762-766.

Fergus, S., & Zimmerman, M. A. (2005). Adolescent resilience: A framework for understanding healthy development in the face of risk. *Annual Review of Public Health*, *26*, 399-419.

Fergusson, D. M., & Horwood, L. J. (2003). Resilience to childhood adversity Results of a 21-year study. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 130-155). New York, NY: Cambridge University Press.

Flores, E., Cicchetti, D., & Rogosch, F. A. (2005). Predictors of resilience in maltreated and nonmaltreated Latino children. *Developmental Psychology*, *41*, 338-351.

Ford, J. D., Elhai, J. D., Connor, D. F., & Frueh, B. C. (2010). Poly-victimization and risk of posttraumatic, depressive, and substance use disorders and involvement in delinquency in a national sample of adolescents. *Journal of Adolescent Health*, *46*, 545-552.

Frazier, P., Greer, C., Gabrielsen, S., Tennen, H., Park, C., & Tomich, P. (2013). The relation between trauma exposure and prosocial behavior. *Psychological Trauma: Theory, Research, Practice, and Policy*, *5*, 286-294.

Garmezy, N., Masten, A. S., & Tellegen, A. (1984). The study of stress and competence in children: A building block for developmental psychopathology. *Child Development*, *55*, 97-111.

Griese, E. R., & Buhs, E. S. (2014). Prosocial behavior as a protective factor for children's peer victimization. *Journal of Youth and Adolescence*, *43*, 1052-1065.

Hammen, C. (2003). Risk and protective factors for children of depressed parents. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 50-75). New York, NY: Cambridge University Press.

Haskett, M. E., Nears, K., Ward, C. S., & McPherson, A. V. (2006). Diversity in adjustment of maltreated children: Factors associated with resilient functioning. *Clinical Psychology Review*, *26*, 796-812.

Hay, D. F. (1994). Prosocial development. *Journal of Child Psychology and Psychiatry*, *35*, 29-71.

Hicks, G. F., Hicks, B. C., & Bodle, V. (1992). Natural helpers needs assessment and self-esteem: Pro-social foundation for adolescent substance-abuse prevention and early intervention. *Journal of Alcohol and Drug Education*, *37*(2), 71-82.

Hollister-Wagner, G. H., Foshee, V. A., & Jackson, C. (2001). Adolescent aggression: Models of resiliency? *Journal of Applied Social Psychology*, *31*, 445-466.

Howell, K. H., Graham-Bermann, S. A., Czyz, E., & Lilly, M. (2010). Assessing resilience in preschool children exposed to intimate partner violence. *Violence and Victims*, *25*, 150-164.

Karatoreos, I. N., & McEwen, B. S. (2013). Annual research review: The neurobiology and physiology of resilience and adaptation across the life course. *Journal of Child Psychology and Psychiatry*, *54*, 337-347.

Keltner, D., Kogan, A., Piff, P. K., & Saturn, S. R. (2014). The sociocultural appraisals, values, and emotions (SAVE) framework of prosociality: Core processes from gene to meme. *Annual Review of Psychology*, *65*, 425-460.

Lancaster, S. L., Melka, S. E., & Rodriguez, B. F. (2009). An examination of the differential effects of the experience of DSM-IV defined traumatic events and life stressors. *Journal of Anxiety Disorders*, *23*, 711-717.

Lazarus, R. S. (1974). Psychological stress and coping in adaptation and illness. *International Journal of Psychiatry in Medicine*, *5*, 321-333.

Luthar, S. S. (Ed.). (2003). *Resilience and vulnerability: Adaptation in the context of childhood adversities*. New York, NY: Cambridge University Press.

Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development*, *71*, 543-562.

Masten, A. S. (2014). Global perspectives on resilience in children and youth. *Child Development*, *85*, 6-20.

Masten, A. S., & Powell, J. L. (2003). A resilience framework for research, policy, and practice. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 1-28). New York, NY: Cambridge University Press.

Morrissey, K. M., & Werner-Wilson, R. J. (2005). The relationship between out-of-school activities and positive youth development: An investigation of the influence of communities and family. *Adolescence*, *40*(157), 67-85.

Nelson, D. L., & Simmons, B. L. (2011). Savoring eustress while coping with distress: The holistic model of stress. In J. C. Quick & L. E. Tetrick (Eds.), *Handbook of occupational health psychology* (2nd ed., pp. 55-74). Washington, DC: American Psychological Association.

Park, A., Smith, C., & Ireland, T. (2012). Equivalent harm? The relative roles of maltreatment and exposure to intimate partner violence in antisocial outcomes for young adults. *Children and Youth Services Review*, *34*, 962-972.

Penner, L. A., Dovidio, J. F., Pilavin, J. A., & Schroeder, D. A. (2005). Prosocial behavior: Multilevel perspectives. *Annual Review of Psychology*, *56*, 365-392.

Perkins, D. F., & Jones, K. R. (2004). Risk behaviors and resiliency within physically abused adolescents. *Child Abuse & Neglect*, *28*, 547-563.

Piff, P. K., Kraus, M. W., Cote, S., Cheng, B. H., & Keltner, D. (2010). Having less, giving more: The influence of social class on prosocial behavior. *Journal of Personality and Social Psychology*, *99*, 771-784.

Piff, P. K., Stancato, D. M., Cote, S., Mendoza-Denton, R., & Keltner, D. (2012). Higher social class predicts increased unethical behavior. *Proceedings of the National Academy of Sciences*, *109*, 4086-4091.

Price, M., Higa-McMillan, C., Kim, S., & Frueh, B. C. (2013). Trauma experience in children and adolescents: An assessment of the effects of trauma type and role of interpersonal proximity. *Journal of Anxiety Disorders*, *27*, 652-660.

Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, *57*, 316-331.

Sameroff, A., Gutman, L. M., & Peck, S. C. (2003). Adaptation among youth facing multiple risks: Prospective research findings. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 364-391). New York, NY: Cambridge University Press.

Schreier, H. M., & Chen, E. (2008). Prospective associations between coping and health among youth with asthma. *Journal of Consulting and Clinical Psychology*, *76*, 790-798.

Teigen, K. (1994). Yerkes-Dodson: A law for all seasons. *Theory & Psychology*, *4*, 525-547.

Tolan, P., Lovegrove, P., & Clark, E. (2013). Stress mitigation to promote development of prosocial values and school engagement of inner-city urban African American and Latino youth. *American Journal of Orthopsychiatry*, *83*, 289-298.

Ungar, M. (2011). The social ecology of resilience: Addressing contextual and cultural ambiguity of a nascent construct. *American Journal of Orthopsychiatry*, *81*, 1-17.

Vollhardt, J. R. (2009). Altruism born of suffering and prosocial behavior following adverse life events: A review and conceptualization. *Social Justice Research*, *22*, 53-97.

Wang, J., Iannotti, R. J., & Nansel, T. R. (2009). School bullying among adolescents in the United States: Physical, verbal, relational, and cyber. *Journal of Adolescent Health*, *45*, 368-375.

Wentzel, K. R., Filisetti, L., & Looney, L. (2007). Adolescent prosocial behavior: The role of self-processes and contextual cues. *Child Development*, *73*, 895-910.

Yates, T. M., Egeland, B., & Sroufe, L. A. (2003). Rethinking resilience: A developmental perspective. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 243-266). New York, NY: Cambridge University Press.

Yerkes, R. M., & Dodson, J. D. (1908). The relation of strength of stimulus to the rapidity of habit-formation. *Journal of Comparative Neurology and Psychology*, *18*, 459-482.

Author Biographies

Andrea Larson is a Social Welfare Ph.D. student in the School of Social Work at the University of Wisconsin-Madison. Her area of research interest is child and adolescent mental health.

Tally Moses is an Associate Professor in the School of Social Work at the University of Wisconsin-Madison. Her research interests focus on the experiences of youth diagnosed with mental disorders in relation to interpersonal relationships, mental illness stigma, help-seeking, and treatment processes.