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Is Self-Compassion Selfish? The Development of Self-Compassion, Empathy, and Prosocial Behavior in Adolescence

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Both self-compassion and empathy have been theorized to promote prosociality in youth, but there is little longitudinal data examining this possibility. We assessed self-compassion, empathy, and peer-rated prosociality yearly, in a cohort of 2,078 youth across 17 schools (*M* age at *T1* = 14.65 years; 49.2% female), as they progressed from Grade 9–12. We utilized multi-level modeling to predict prosocial behavior, nested within students, classes, and schools. We found that self-compassion and empathy uniquely predicted peer-rated prosocial behavior. However, only empathy predicted increases in prosocial behavior across time. While self-compassion is not selfish, it does not appear to facilitate the development of kindness toward adolescent peers. Self-compassion may help to buffer against possible negative effects of empathic distress.

> The salvation of man is through love and in love. — Viktor E. Frankl, Man's Search for Meaning

A commonly held notion is that one must love or act compassionately toward oneself in order to love others (Campbell & Baumeister, 2001; Ricard, 2015). From a Tibetan Buddhist perspective, compassion or "tsewa" for self and others, is necessarily intertwined (His Holiness the Dalai Lama, 2002; Vreeland, 2001). Discussing compassion, the Dalai Lama proposed "yourself first, and then in a more advanced way the aspiration will embrace others. In a way, high levels of compassion are nothing but an advanced state of that self-interest" (His Holiness the Dalai Lama, 2002, p. 98). "Self-first," or the notion that self-compassion may promote kindness to others is reasonable given the way self-compassion is conceptualized (Hofmann, Grossman, & Hinton, 2011). Inherent in self-compassion is the notion that all humans suffer and are worthy of human kindness (Neff, 2003b). Cultivating the capacity to turn toward oneself with kindness in the midst of emotional pain and recognizing that suffering is common to all humanity may in turn, encourage compassionate responding toward others. Building on existing cross-sectional research (e.g., Neff & Pommier, 2013; Yarnell & Neff, 2013) this study examines whether self-compassion promotes prosociality among a large longitudinal sample of adolescents across high school. As a point of comparison, we explore relations between empathy (affective and cognitive) and prosocial behavior.

Personal Benefits of Self-compassion

Drawing on the texts of Buddhist scholars, Neff defined self-compassion as comprising three key components exhibited during times of personal suffering and failure (1) treating oneself kindly, (2) recognizing struggles as a shared aspect of the human condition, and 3) holding ones painful thoughts and feelings in mindful awareness (Neff, 2009). An example of acting with self-compassion includes bringing awareness to one's painful emotions and bodily sensations and responding with kind words (e.g., "It's ok to feel this way and I am here for you") and using kind gestures (e.g., placing a caring hand on one's body to acknowledge the suffering).

To date research has focused primarily on individual benefits of self-compassion. Cross-sectional research suggests that self-compassion can provide considerable benefits to the individual, such as reductions in depression and anxiety, improved life satisfaction (Neff, 2003a), increased happiness and optimism (Neff, Kirkpatrick, & Rude, 2007; Neff & Vonk, 2009) and use of adaptive emotion focused coping strategies (Neff, Hsieh, & Dejitterat, 2005).

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A meta-analyses of 14 eligible studies found that higher levels of self-compassion were associated with greater well-being (MacBeth & Gumley, 2012) and longitudinal investigations provide evidence for directional relationships between self-compassion and improved mental health (Marshall et al., 2015; Raes, 2011; Sbarra, Smith, & Mehl, 2012).

Much of the literature on self-compassion has been conducted among adults, with a small but growing literature among adolescent populations (e.g., Bluth, Gaylord, Campo, Mullarkey, & Hobbs, 2016; Játiva & Cerezo, 2014). The relative lack of literature among youth is somewhat surprising considering difficulties with self-criticism during this period (Marshall, Parker, Ciarrochi, & Heaven, 2014), mental health challenges (Sheppard, Deane, & Ciarrochi, 2018) and benefit that compassion may afford (Neff & McGhee, 2010). Indeed early findings suggest that self-compassion is associated with adolescent well-being (Neff & McGhee, 2010) and may serve as a protective factor for the mental health of young people (Marshall et al., 2015; Zeller, Yuval, Nitzan-Assayag, & Bernstein, 2015).

Does Self-compassion Benefit Others?

Theoretically, there are at least two reasons to expect that self-compassion will be linked to other compassion. First, a sense of common humanity is central to self-compassion (Neff, 2003b). As Neff argued, "Self-compassion connects one's own flawed condition to the shared human condition, so that features of the self are considered from a broad, inclusive perspective" (2013, p. 161). Thus, a person with self-compassion is expected to be more likely to recognize when another is suffering from their flaws, an important first step to extending compassion to the other (Atkins & Parker, 2012). Indeed research suggests that people high in self-compassion emphasize connection with humanity and the shared nature of human suffering, rather than separateness and isolation when reflecting on personal weaknesses (Neff, Kirkpatrick et al., 2007). Second, self-compassion is hypothesized to involve the capacity to hold suffering in compassionate awareness and to extend it beyond oneself to all sentient beings (Hofmann et al., 2011).

A small but growing number of studies investigate the possible benefits of self-compassion for others (e.g., Baker & McNulty, 2011; Crocker & Canevello, 2008; Neff & Pommier, 2013; Yarnell & Neff, 2013). In cross-sectional self-report studies, self-compassion has been associated with greater tendency to apologize (Howell, Dopko, Turowski, & Buro, 2011), greater relationship harmony among college students (Yang, 2016), greater self-reported compassion for humanity, empathic concern and altruism among community adults and meditators (Neff & Pommier, 2013), and self-reported tendency to resolve relationship difficulties in a way that balances the needs of self and other (Yarnell & Neff, 2013).

However, not all empirical findings support a link between self-compassion and benefits to others. Neff (2003a,b) failed to find a relationship between self-compassion and other-focused concern among undergraduates. Gerber, Tolmacz, and Doron (2015) found that self-compassion was not related to self-reported empathic concern for others in their study of Israeli adults (Study 1 and 2). In Study 2, higher self-compassion was significantly associated with lower avoidance of social situations and lower rejection sensitivity but higher caregiving avoidance (all self-report). In a recent cross-sectional survey of 328 community adults, self-compassion was unrelated to other directed compassion (self rated; López, Sanderman, Ranchor, & Schroevers, 2018).

While the vast majority of literature has focused on self-reported social behavior, there have been some studies that examine the effect of self-compassion on partner responses, and here too, the results have been somewhat mixed. Neff and Beretvas (2012) found that relationship partners higher in self-compassion were reported as significantly more caring by their partners and portrayed greater positive relationship behaviors including relatedness, acceptance, and autonomy. Baker and McNulty (2011) found that the link between partner behavior and self-compassion depended on conscientiousness: self-compassion was associated with more constructive problem-solving behaviors among highly conscientious husbands, but less constructive problem solving among low conscientious husbands.

Other research has utilized experimental designs. Leary, Tate, Adams, Allen, and Hancock (2007) sampled 66 undergraduate students and found that self-compassion was associated with more favorable ratings of others, even following unflattering personal feedback. Welp and Brown (2014) found that self-compassion and empathy explained unique variance in self-reported willingness to help an individual in need. Participant's high in self-compassion were especially likely to help when the target was at fault for his or her dilemma.

In summary, while existing research on self-compassion and interpersonal benefit has often reported positive associations, findings have not been consistent (e.g., Baker & McNulty, 2011; Gerber et al., 2015; Neff & Pommier, 2013). Furthermore, research has been restricted to adult populations or young adults (e.g., Neff & Pommier, 2013) and largely includes correlational data and self-reports of prosocial behavior. We seek to build on existing research by examining whether self-compassion influences the development of peer-rated prosocial behavior toward others across high school. Additionally, we examine the possibility that prosocial behavior can promote self-compassion (consequence model). Breines and Chen (2013) explored the relationship between generosity and subsequent changes in state levels of self-compassion in a series of four experiments. Findings indicated that thinking about, and providing support to others resulted in increases in state self-compassion.

Does Empathy Promote Prosocial Behavior?

While research into self-compassion and prosocial behavior is gaining recent interest, literature examining empathy and its relations with prosocial behavior is more extensive and relatively more established. We sought therefore to examine if self-compassion predicted prosocial behavior over and above empathy. We also sought to extend past empathy research by examining if empathy predicted increases in peer-rated prosocial behavior during the adolescent period.

Based on Jolliffe and Farrington's (2006) work, we define empathy as consisting of two closely related capacities: The capacity to experience the emotions of another ("affective empathy") and the capacity to comprehend the emotions of another ("cognitive empathy"). We did not include in this definition "personal distress," which is present in other definitions of empathy, and has been measured by items such as "In emergency situations, I feel apprehensive and ill at ease" (Davis, 1983). This is because such items reflect neuroticism or negative affectivity (Corte, et al., 2007). We also differentiate empathy from sympathy, in that sympathy, but not necessarily empathy, involves a sense of concern for another and a warm and tender "other-oriented" focus (Eisenberg, Eggum, & Giunta, 2010; Maibom, 2012).

Development of empathy is important for healthy interpersonal functioning (Chow, Ruhl, & Buhrmester, 2013; Gleason, Jensen-Campbell, & Ickes, 2009), and empathy has long been considered an important determinant of helping behavior (Eisenberg et al., 2010). Batson and colleagues empathy-altruism hypotheses (1981) has fostered much research interest in this area and purports that empathic emotion leads to prosocial motivation with the ultimate goal of improving others welfare (Batson et al., 1991).

An early meta-analysis found no relation between empathy and prosocial behavior (Underwood & Moore, 1982). Nonetheless later analysis of this paper suggested that empathy broadly conceived did correlate with prosocial behavior and that the strength of relations varied depending on the assessment method (Eisenberg & Miller, 1987). Research has targeted increased empathy and reported positive changes in prosocial outcomes among samples of young adults, and primary school children (Konrath et al., 2015; Schonert-Reichl, Smith, Zaidman-Zait, & Hertzman, 2012).

Relatively few longitudinal studies have examined directional relationships between empathy and prosocial outcomes. Nonetheless positive relations have been established between perspective taking, sympathy and prosocial outcomes (e.g., Eisenberg et al., 2002; Padilla-Walker & Christensen, 2011; Van der Graaff, Carlo, Crocetti, Koot, & Branje, 2018). Recent longitudinal research has established bi-directional relations between adolescent's sympathy and prosocial behavior toward strangers (Carlo, Padilla-Walker, & Nielson, 2015). Yoo, Feng, and Day (2013) also found that adolescents' sympathy at time 1 significantly predicted their prosocial behavior at time 2 (4 years later). Likewise, prosocial behavior at time 1, significantly predicted sympathy at time 2. However, both studies relied on self-reported behavior, rather than peer perceptions. It is possible that empathic adolescents only *think* they become more prosocial.

Does Self-compassion Promote Empathy?

A key component of self-compassion is the capacity to hold one's thoughts and feelings in mindful awareness rather than over identifying with them (Neff, 2003a). Considering affective empathy then, it is reasonable to anticipate that a self-compassionate response to another's distress may involve the use of mindful skills to avoid being swept up in the same emotional storm (e.g., I am sad when you are sad). Consistent with this interpretation, a body of research suggests that self-compassion is associated with less negative emotions including depression, anxiety, and stress (MacBeth & Gumley,

2012), less rumination (Neff, 2003a) and more adaptive coping (Neff, Rude, & Kirkpatrick, 2007; Neff et al., 2005). In addition, self-compassion has been found to be significantly and negatively related to the personal distress subscale of the IRI for undergraduate, adult, and meditator samples (Neff & Pommier, 2013; Welp & Brown,2014). Taking into account theoretical understandings and prior research, we anticipate a negative relationship between self-compassion and affective empathy. In other words, we predict that adolescents high in self-compassion will be less likely to experience negative emotions in response to the negative emotions of others.

In contrast, self-compassion is likely to be positively related to cognitive empathy or the capacity to understand and connect with another's suffering. According to Neff (2003a), a key aspect of self-compassion involves connecting with the larger human experience of suffering, rather than separating and isolating. Therefore, adolescents high in self-compassion should be well placed to recognize and respond tenderly to their own and others suffering. Providing some support for this idea Neff and Pommier (2013) found that perspective taking and empathic concern were significantly and positively related to self-compassion for undergraduates, community adults, and meditator samples. The perspective taking subscale involves seeing things from another's point of view, and empathic concern involves feeling sympathy and concern for another's suffering. In another study, Welp and Brown (2014) found no relationship between self-compassion and the perspective taking and empathic concern subscales. Our research seeks to add to the data provided by previous research, by examining possible relations between self-compassion and cognitive empathy among adolescents.

Current Study

The primary focus of this study was to examine the relative roles of self-compassion and empathy in predicting prosocial behavior over time. A secondary focus was to evaluate antecedent and consequence influence models involving self-compassion, empathy, and prosocial behavior. For example, we addressed the following questions: Does self-compassion influence the development of prosocial behavior (antecedent), and does prosocial behavior influence the development of self-compassion (consequence). We also explored the developmental links between self-compassion and affective and cognitive empathy.

We utilize a peer-based, behavioral indicator of prosocial behavior, rather than relying on self-reports. Research indicates that there may be limited correspondence between self and peer-reports of adolescent behavior (Renk & Phares, 2004). Moreover the presence of self-deception in prosocial decision-making has been well demonstrated (Dana, Cain, & Dawes, 2006; Dana, Weber, & Kuang, 2007; Hamman, Loewenstein, & Weber, 2010). We complement our peer-based measures with a self-report measure of prosocial behavior and prosocial aspirations in Grade 12. The self-report measures give us a cross-sectional glimpse at the extent that people think they are prosocial, even if they are not perceived to be prosocial by peers.

METHODS

Participants and Procedure

A total of 2,078 adolescents participated in at least one wave of data collection from Grades 9 to 12 (Grade 9 M = 14.65 years; SD = .45; 49.2% female; 50.8% male). Detailed information on completion at each time wave is included below. The confidential surveys were administered in October and November in school classrooms, commencing with the first year in 2011. All students were participants in the Australian Character Study, comprising 17 Catholic High schools in two states of Australia. In Australia, the Catholic School system accounts for 20.52% of all secondary schools (Australian Bureau of Statistics, 2014). Schools were located in the city of Wollongong (New South Wales) and Cairns (Queensland), but also included schools within regional and rural areas, thereby constituting students from diverse cultural and socioeconomic backgrounds. Parents' marital status in Grade 9 was reported as 73% married, 22.5% separated or divorced, and 4.5% classified as "other". Participants largely classified themselves as "Caucasian Australian" (73.6%) or European (8.5%), with the remaining categories being "other" (11.5%), aboriginal (5.2%), or New Zealander (1.2%). Ethics approval was granted by the University and informed consent was obtained from all study participants. Self-compassion, empathy, and peer-rated prosociality were measured in Years 9–12. Self-rated prosocial aspirations and behavior were measured during Year 12 only (exploratory analyses).

A total of 891 students completed all time waves. With reference to each time point students completed assessments in Grade 9 (n = 1,925), 10

(n = 1,965), 11 (n = 1,697), and 12 (n = 1,623). Refusal to participate was negligible. The demographic makeup of this sample broadly reflects that of the Australian population in terms of ethnicity, employment, and religious belief (Author calculation based on Australian Bureau of Statistics (Australian Bureau of Statistics, 2010). The Australian Government provides a school socioeconomic index in which the average across Australia is 1,000 (https://www.myschool.edu.au/glossary/#i). The schools in this sample had a similar average score of 1,026 (SD = 43).

The drop-in sample size from Grade 10 to 11 was, in part, due to youth in Australia shifting their education from the typical academic path to more trade-oriented paths, such as transferring to a TAFE school. At the time of data collection, 72.1% of the Australian youth progressed from year 10 to year 12 in Australia (Australian Bureau of Statistics, 2014).

Measures

Self-compassion. Self-compassion (α = .81, *T1*) was measured using the 12-item short form of the Self-Compassion Scale (SCS-SF; Raes, Pommier, Neff, & Van Gucht, 2011) utilizing a 5-point Likert style (1 = "almost never" to 5 = "almost always"). Participants indicated their agreement with statements such as "when something painful happens I try to take a balanced view of situation." Higher mean scores indicate higher levels of self-compassion.

Empathy. Empathy (affective empathy α = .79 and cognitive empathy α = .81, *T1*) was measured using the 20-item Basic Empathy Scale (Jolliffe & Farrington, 2006) utilizing a 5-point Likert style (1 = "strongly disagree" to 5 = "strongly agree"). The scale has clearly demonstrated a two factor structure, consistent with the affective (11-items), and cognitive (9-item) components (Albiero, Matricardi, Speltri, & Toso, 2009). The cognitive factor captures understanding of another's feelings while the affective component captures shared emotions of another person. An example of a cognitive item is "when someone is feeling 'down' I can usually understand how they feel" with an affective item, "I get caught up in other people's feelings easily". Scores on affective and cognitive empathy were scored separately with higher mean scores indicating higher levels of empathy.

Peer-reported prosocial behavior. Prosocial behavior was measured during Grades 9–12 with a peer nomination method used by Ciarrochi and Heaven (2009) paper based on the original peer-rating measure by Pulkkinen, Kapiro, and Rose (1999). Adolescents nominated up to three same-sex and three opposite-sex peers who were "ready to lend a helping hand when they see someone in need of that," within their English class. Therefore, this item attempts to capture helping behavior as perceived by peers. Past research suggests this measure is related in expected ways to empathy and is distinguishable from peer liking (Sahdra, Ciarrochi, Parker, Marshall, & Heaven, 2015).

Self-rated prosocial behavior and aspirations. Self-rated prosocial behavior was measured during Grade 12 (*T4* only) using an item aligned directly with the peer measure focusing on student's own perceptions, that is, "to what extent are you ready to lend a helping hand when you see someone in need of that?" Prosocial aspirations (α = .87, *T4*) were measured by 5-items on a 7-point Likert scale (1 = "not at all" to 7 = "very") during Grade 12 only. Items asked, "how important is it to you…1) to work for the betterment of society, 2) to assist people who need it, asking nothing in return, 3) to work to make the world a better place, 4) to help others improve their lives, and 5) to help people in need". These items were taken from the "community contributions" scale of the Aspirations Index (Kasser & Ryan, 1996). A mean score was generated. For the purpose of this article we refer to this subscale as prosocial aspirations.

Statistical Analysis

All analyses were conducted in R (R Core Team, 2013). The data had a nested structure with observations nested under students, who themselves were nested within classes, and subsequently schools. There were, however, relatively few schools and thus we used dummy variables to account for schools as a complete pooling regression model (Gelman & Hill, 2007). We used random effects to account for nesting of observations under participants and participants within classes.

Given that past research suggests that females are more empathic than males (Mestre, Samper, Frías, & Tur, 2009) and more prosocial (Carlo et al., 2015), we examined multi-group models to examine if the covariance structure differed for males and females. If there were important differences in male and female models, we expected that the multigroup model would fit better than the

baseline model. There was no evidence that any of the multigroup models fit better when predicting peer nominations, all ps > .05. Hence, we focus on a single group model which controls for gender in all analyses.

Modeling strategy. We were interested in the extent to which an individual was counted as prosocial by those that have persistent repeated exposure to the person (i.e., their class-mates). Thus, prosociality was defined by the proportion of individuals that could nominate an individual who did in fact nominate an individual as prosocial. This is important as class sizes varied widely in our sample and thus, by not using a proportion, two individuals with five nominations would be treated as equally prosocial despite this number representing, say, 50% of the possible nominations in one class and only 20% in another. The proportion of prosocial nominations was estimated as a regression model with a probit link function (Venables & Ripley, 2002). Probit regression, like logistic regression, provides a means of modeling binary outcome variables. While logistic regression uses a logit function, probit regression uses a cumulative normal distribution. In both cases, the results when converted to predicted probabilities are almost identical.

Three sets of binomial models were run. First, we explored whether self-compassion and empathy were related to prosociality controlling for time-wave and gender. Second, we added the interaction between self-compassion, empathy, and time-wave to assess if there were systematic changes in the strength of relationships as participants moved through high school. These first two models assess the cross-sectional relationship between self-compassion, empathy, and prosocial behavior.

The third and final models focused on longitudinal relationships and explored temporal ordering questions. We examined an "antecedent" model, in which self-compassion and empathy from time *T*, predicted change in prosociality from time *T* to time *T + 1*. We also examined a "consequence" model, in which prosocial nominations at time *T* predicted change in self-compassion and empathy at time *T + 1*. Thus, we were able to explore a full range of hypotheses relating to the temporal ordering of self-compassion, empathy, and prosociality.

Effect sizes. Self-compassion and empathy were pre-standardized before entry into the model based on the overall mean and variance across all waves of the study thus providing a directly comparable metric. The outcome variable was a ratio and varied from 0 to 1. Most of the mass of the prosocial nominations were between 0 and .40 with the 95th percentile being .421. The data were not continuous, but rather were in the form of a ratio, and were non-normal and bounded. In such cases, using the standard deviation to provide effect sizes could be misleading. Instead, we utilized the Median Absolute Deviation, a robust non-parametric version of the standard deviation (Ley, Ley, Klien, Bernard, & Licata, 2013). This was .11 for prosocial nominations. While all results were on a common metric, interpreting the size of the results in terms of practical significance requires careful interpretation given the non-normal distribution of nominations. We propose that an effect in which an one standard deviation change in empathy or self-compassion was related to a .10 change in prosociality (i.e., a change in approximately one Median Absolute Deviation) is a large effect size while changes of .05 (half a Median Absolute Deviation) and .025 (a quarter of a Median Absolute Deviation) represent moderate and small effects, respectively. When used as a predictor we retained the proportion definition of prosocial nominations, but note that the reported parameter estimated for prosociality will not be directly comparable to those for self-compassion and empathy. In order to compare the effects multiplying the resulting parameter estimates for prosociality as a predictor by .11 (the Median Absolute Deviation) provides a reasonable approximation of a common effect size. For correlations we use *r* as an effect size and for regression models we use *beta*.

Missing data. There were two types of missing data; (1) attrition, and (2) data holes (where individuals filled out part of the survey but skipped some questions). Data were imputed for students missing on the day of testing (see below). Students that joined or left the school at some stage during the study only had data imputed for the time waves in which they were enrolled in the school. This approach was appropriate given that a student not enrolled in a school could not, in principle, be nominated by peers as prosocial.

For data holes and absenteeism, we imputed that data as a time series (allowing for both linear and quadratic growth patterns) and accounting for clustering at the class level using the R package, Amelia II (Honaker, King, & Blackwell, 2011). *SES* and gender were treated as nominal variables in

the imputation process. Ten imputations were extracted and used in all subsequent analysis.

Multi-level modeling provides a principled approach to missing data that uses all information for parameter estimation (Enders, 2010). This procedure was employed for all models. Given that youth was nested in schools, we used a 'no pooling' approach where each of the 17 schools was included in all models as a set of dummy variables. This approach is more conservative as it does not force random effects to be normally distributed. It also allows for greater heterogeneity in school-level effects (Gelman & Hill, 2007).

Missing value analyses. We used linear modeling to examine the link between number of waves completed and our key study variables. We found a small relationship between number of waves completed and prosocial ratings in Grade 9 (r^2 = .002, p = .03), 10 (r^2 = .01. p < .001), and 11 (r^2 = .002, p = .04) but not in Grade 12. There were also small significant relationships in Grade 9 (r^2 = .003, p = .02) and 10 (r^2 = .004, p = .007) for self-compassion, Grade 9 (r^2 = .01, p < .001) and 10 (r^2 = .01, p < .001) for affective empathy, and Grade 9 (r^2 = .02, p < .001) and 10 (r^2 = .006, p < .001) for cognitive empathy. Thus, there was a tendency for those who completed more waves of data to have slightly higher self-compassion, empathy, and prosocial behavior in the early part of the study.

RESULTS

Preliminary Analyses

Self-compassion and empathy were entered as covariates into a binomial model to predict prosocial behavior. Self-compassion and affective and cognitive empathy each contributed uniquely to prosocial behavior. These relationships were positive and statistically significant in all instances, indicating that higher self-compassion and empathy were associated with higher peer-ratings of prosociality (Table 1). Importantly, findings for self-compassion held when controlling for the effects of empathy. Additionally, we examined whether these effects for self-compassion and empathy were stable across Grades 9–12 of high school, or whether they diminished or increased. There was no evidence that the associations between self-compassion r = (−0.022, SE = .011, CI = [−0.044, 0.001]), affective empathy r = (−0.022, SE = .012, CI = [−0.046, 0.002]), or cognitive empathy r = (−0.001, SE = .012, CI = [−.024, .022]) differed by time-wave. To aid interpretation of this effect, we first set all continuous variables to their mean and averaged them over all combinations of time, gender, and school dummies. This allowed us to predict that an individual at the 90th percentile in self-compassion would attract on average 10.9% of the possible classroom nominations of prosociality compared to 9.5% for an individual at the 10th percentile. Similar figures were found for cognitive empathy (90th = 10.8%, 10th = 9.6%). Larger differences, however, were observed for affective empathy (90th = 11.5%, 10th = 8.9%). Overall the effects were small by our effect size metric but statistically significant.

We next conducted correlational analyses to examine potential relations between self-compassion and affective and cognitive empathy within the same year and across time. Consistent with our hypotheses (see Table 2) we found a negative link between self-compassion and affective empathy among adolescents for Grades 9–12. In contrast self-compassion was positively associated with cognitive empathy during Grades 9 and 10 (small positive relationship). Correlations between self-compassion and cognitive empathy during year 11 and 12 were not significant. Please see Table 2 for all study variable correlations.

Lagged Analysis: Antecedent and Consequence Models

We next examined the effect of self-compassion, affective empathy, and cognitive empathy on prosocial behavior over time. We conducted a lagged analysis utilizing a Binomial Model and predicting future prosociality while controlling for previous

TABLE 1
Cross-Sectional Links Between Self-Compassion, Empathy, and Peer-Rated Prosocial Behavior

			Confidence interval	
	Log odds	SE	*Lower*	*Upper*
Intercept	−1.444	.026	−1.494	−1.394
Self-compassion	0.037	.007	0.024	0.050
Affective empathy	0.063	.008	0.049	0.078
Cognitive empathy	0.029	.007	0.015	0.043
Gender (male)	−0.081	.017	−0.113	−0.048
Time Wave	0.113	.011	0.092	0.134

Notes. SE = Standard error.
All values significant at p < .001. Binomial Model controls for nesting with random intercepts for participant and class. School effects were controlled for via the inclusion of dummy variables.

TABLE 2
Correlations of All Key Variables in the Study in Grade 9–12

Variable	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*
1. P9															
2. P10	.47**														
3. P11	.41**	.55**													
4. P12	.38**	.49**	.59**												
5. SC9	.08**	.11**	.09**	.07*											
6. SC10	.04	.08**	.08**	.08**	.54**										
7. SC11	.02	.02	.08**	.03	.48**	.63**									
8. SC12	.00	.03	.04	.03	.39**	.49**	.56**								
9. AF9	.13**	.08**	.05	.00	−.16**	−.21**	−.19**	−.15**							
10. AF10	.14**	.11**	.08**	.04	−.15**	−.22**	−.18**	−.16**	.68**						
11. AF11	.11**	.11**	.09**	.06*	−.15**	−.19**	−.23**	−.17**	.63**	.68**					
12. AF12	.13**	.14**	.08**	.10**	−.15**	−.16**	−.19**	−.19**	.55**	.59**	.71**				
13. CE9	.08**	.11**	.09**	.03	.07**	.01	−.00	−.01	.41**	.29**	.26**	.23**			
14. CE10	.13**	.15**	.12**	.07*	.06*	.05*	.05	.01	.31**	.40**	.27**	.25**	.53**		
15. CE11	.07**	.08**	.09**	.07**	.06*	.03	.02	.00	.31**	.31**	.45**	.34**	.51**	.55**	
16. CE12	.07*	.11**	.08**	.08**	−.01	.00	−.03	.01	.22**	.24**	.31**	.38**	.43**	.45**	.55**

Notes. P = peer ratings of helping, SC = Self-Compassion, AF = Affective Empathy, and CE = Cognitive Empathy.
*$p < .05$, **$p < .01$.

year prosociality. The antecedent model was not supported for self-compassion which was a key focus in this study. In other words, self-compassion was not found to predict the development of prosocial behavior over time. In contrast both affective and cognitive empathy predicted the development of prosociality during Grades 9–12 (See Table 3, first four rows). Again, evaluating all continuous variables at their mean values (and lagged prosocial nominations at the Median Absolute Deviation value) and averaged over all combinations of the continuous variables, an individual with affective empathy in the 90th percentile on affective empathy at time T had a predicted proportion of prosocial nominations equivalent to 10.7% at time $T + 1$. A similar individual at the 10th percentile had a predicted 9.5% of the potential prosocial nominations. Cognitive empathy had a similar pattern of results (90th = 10.6%, 10th = 9.5%). We considered these effects to be reliable but small.

Lagged Analysis: Exploring Consequence Models

Finally, we conducted exploratory analysis to examine the extent that prosociality, empathy, and self-compassion influenced each other. As can be seen in Table 3, we found no longitudinal predictors of self-compassion. However, high self-compassion did predict diminishing affective empathy across the high school years. Affective empathy influenced future cognitive empathy, but not vice versa. Finally, prosocial behavior predicted future affective empathy, but not cognitive empathy. Taken together, findings indicated that prosocial behavior and affective empathy influence each other with increases in one leading to increases in the other.

Self-Reported Prosocial Behavior and Aspirations

In order to complement our observer rated data, we collected self-report data in the final year of High School. There was a positive association between peer reported and self-reported prosocial behavior ($r = .15$, $p < .001$) and peer-reported prosocial behavior and prosocial aspirations ($r = .10$, $p < .001$). Self-compassion was not significantly related to self-reported prosocial aspirations ($r = .04$, ns). A very small positive association was observed between self-compassion and self-reported prosocial behavior ($r = .09$, $p < .001$). In contrast cognitive (c) and affective (a) empathy were moderately related to both prosocial aspirations ($r_{c\ =}$ .26, $r_{a\ =}$ .22, $p < .001$) and self-rated prosocial $_{\text{behavior}}$ ($r_{c\ =}$ .29 and $r_{a\ =}$ .25, $p < .001$). Additional analyses revealed that the links between empathy, and the prosocial indices (behavior and aspirations) were larger than the links between self-compassion and the prosocial indices, ts > 3.77, ps < .001.

DISCUSSION

The key focus of this study was to examine the relationships between self-compassion and prosocial

TABLE 3
Longitudinal Binomial Model Predicting Time *T* Variable Controlling for Earlier Time *T*−1 variable across Grade 9–12

Variables at T−1	*Log odds*	SE	*Confidence Interval*	
			Lower	*Upper*
Predicting prosociality at Time *T*				
Prosociality[a]	1.217 (0.13)***	.105	0.993	1.440
Self-compassion	0.002	.010	−0.018	0.022
Affective empathy	0.027**	.010	0.006	0.047
Cognitive empathy	0.026***	.008	0.010	0.042
Predicting self-compassion at Time *T*				
Prosociality	0.251 (0.028)	.139	−0.027	0.530
Self-compassion[a]	0.532***	.018	0.495	0.569
Affective empathy	−0.027	.021	−0.068	0.013
Cognitive empathy	0.034	.020	−0.005	0.074
Predicting affective empathy at Time *T*				
Prosociality	0.287 (0.032)*	.137	0.007	0.567
Self-compassion	−0.034*	.015	−0.064	−0.003
Affective empathy[a]	0.586***	.017	0.551	0.621
Cognitive empathy	0.006	.018	−0.030	0.042
Predicting Cognitive Empathy at Time *T*				
Prosociality	0.280 (0.031)	.152	−0.031	0.591
Self-compassion	0.022	.016	−0.010	0.055
Affective empathy	0.056**	.019	0.019	0.093
Cognitive empathy[a]	0.454***	.017	0.420	0.488

Notes. *SE* = standard error.
Binomial Model controls for nesting with random intercepts for participant and class. School effects and gender were controlled for via the inclusion of dummy variables.
[a]Represents auto-regressive paths. The estimate for prosociality in brackets represents the effect multiplied by its Median Absolute Deviation such that it is on an approximately common metric with self-compassion and empathy.
***$p < .001$; **$p < .01$; *$p < .05$.

behavior as perceived by adolescent peers. As a point of comparison, we explored relations between prosocial behavior and affective and cognitive empathy. Our cross-sectional models suggest that self-compassion as well as affective and cognitive empathy correlate uniquely with peer-rated prosocial behavior during adolescence. Furthermore, findings for self-compassion held when controlling for the effects of empathy. However, the stronger tenet that self-compassion predicts the development of prosocial behavior during adolescence was not supported. In contrast, both affective and cognitive empathy predicted prosocial development.

To our knowledge this is the first study to longitudinally examine the relations between self-compassion and adolescent prosocial behavior. Some cross-sectional research has failed to find relations between self-compassion and other-focused benefit (Baker & McNulty, 2011; Gerber et al., 2015; Yarnell & Neff, 2013). Neff and Pommier (2013) for example, found no relations between self-compassion and compassion for humanity or empathic concern in their undergraduate sample, in contrast to findings for adults and meditators. They did, however, find a moderate correlation between self-compassion and perspective taking. Our study adds to existing research in that it examines a younger population and addresses questions of temporal ordering. Self-compassion did not contribute to increases in prosocial behavior during high school years. Nor did prosocial behavior contribute to increases in self-compassion.

It is always possible that a failure to observe a longitudinal link between self-compassion and observer prosociality may be due to not having enough observers in enough different aspects of the young person's life (e.g., parents, teachers, and friends outside of school). One preliminary way to examine this issue is to look at self-reported behavior. If a self-compassionate youth is indeed prosocial, we would expect them to self-report both aspiring to engage in prosocial behavior and engaging in actual prosocial behavior. However, we found that self-compassion was not related to student's prosocial aspirations and was only slightly related to self-reported prosocial behavior (less than 1% of variance explained). In contrast, empathy had a moderate and reliable link with self-reported prosocial aspirations and behavior (6 to 8% variance explained). Thus, self-compassion neither predicted the development of peer-rated prosocial behavior, nor related to self-reported aspiration to engage in prosocial behavior. Thus, while self-compassion may lead to many personal benefits (MacBeth & Gumley, 2012; Neff & McGhee, 2010), our results do not suggest that training self-compassion will automatically lead to benefits to others.

Affective and cognitive empathy did predict the development of prosocial behavior across high school. Although effect sizes were relatively small, they nonetheless represent theoretically significant links across years of youth prosocial development. The empathy findings build on and extend existing research. For example cross-sectional relationships have been found between perspective taking, sympathy, and prosocial behavior in early adulthood (Eisenberg et al., 2002) and sympathy and prosocial behavior toward friends and strangers (but not family) in early adolescence (Padilla-Walker & Christensen, 2011). Our results extend these by examining links between empathy and peer-rated

prosociality longitudinally, across the entire high school period.

Our results suggest that interventions that target affective or cognitive empathy may likewise lead to increases in kind behavior among adolescents. Existing research has demonstrated that empathy programs can positively impact upon prosocial outcomes, at least among young children and adults (Frey, Nolen, Edstrom, & Hirschstein, 2005; Konrath et al., 2015; Schonert-Reichl et al., 2012). Moreover, given bi-directional relations between affective empathy and prosocial behavior, programs that promote kindness among adolescents may likewise lead to increases in affective empathy.

As hypothesized, self-compassion was negatively related to affective empathy. Importantly, self-compassion predicted diminishing affective empathy across the high school period, but affective empathy did not predict diminishing self-compassion. In other words, adolescents who reported that they were higher in self-compassion were less likely to take on the affective states of others (i.e., I feel sad when another feel's sad). This is one finding that might be construed as selfish. However, there was no evidence that drops in affective empathy were associated with a decrease in prosociality. Self-compassionate people maintained their levels of prosocial behavior while experiencing diminished affective empathy.

Our findings are consistent with previous research that identified negative relations between self-compassion and personal distress empathy for undergraduate and adult samples (Neff & Pommier, 2013; Welp & Brown, 2014). Theoretically, self-compassion should leads to more warmth, love, and care toward oneself, and these positive emotions may help people to cope with empathic distress. Consistent with this view, research demonstrates that compassion training increases positive affect, even among those witnessing human suffering (Klimecki, Leiberg, Lamm, & Singer, 2013; Klimecki, Leiberg, Ricard, & Singer, 2014). This study builds on existing research suggesting that self-compassionate adolescents appear less reactive to others emotional states.

Finally, we found that affective empathy predicted the development of cognitive empathy but not vice versa. This seems to contrast to Van der Graaff et al. study (2018). These researchers found that empathic concern and perspective taking were reciprocally related in a longitudinal study of youth. However, while the perspective taking measure was similar to our cognitive empathy measure, the Van der Graaff et al. empathic concern measure differed from our affective empathy measure. Empathic concern might be better labeled sympathy, rather than empathy. A sample item is, "I often have tender, concerned feelings for people less fortunate than me." In contrast, affective empathy focuses on one's tendency to feel the same emotion as another, not necessarily tender concern. Further research is needed to examine the longitudinal relationships between cognitive empathy, affective empathy, and sympathy.

Limitations and Conclusions

Despite the large sample of adolescents, longitudinal design and use of peer-nominations to assess prosocial behavior, this study had a number of limitations. Peer-nominations of prosocial behavior were based on a single item and would benefit from a more comprehensive measurement approach. Future research may also seek to examine prosocial behavior based on perceptions of multiple informants such as teachers and parents. This study focused on four adolescent years (Grades 9–12). Future research is needed to extend the study of self-compassion, empathy, and prosociality into younger age groups. For example, it is possible that self-compassion may predict increases in prosocial behavior among younger children.

Given the consistent positive correlation between self-compassion and prosocial behavior, we can conclude that self-compassion is not selfish. However, self-compassion did not appear to drive prosocial behavior, at least in the adolescent years. Young people who take a warm, compassionate stance toward their own flaws do not increasingly extend this stance to others. Yet our research does suggest that self-compassion may help to buffer against the negative effects of empathic empathy. Perhaps self-compassion training can complement empathy training: Youth may be able learn to take perspective on others and then use self-compassion to manage the empathic concern that might arise from that perspective. Future research is needed to examine how self-compassion and empathy training might be used together to facilitate well-being and prosociality. Our findings suggest that self-compassion, by itself, is not sufficient to promote other compassion.

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