



The high costs of low agreeableness: Low agreeableness exacerbates interpersonal consequences of rejection sensitivity in U.S. and Chinese adolescents



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ABSTRACT

Although personality is a powerful predictor of adjustment, its potential moderating effects have been less studied in youth. This investigation examined why some youth are more susceptible to the negative consequences of rejection sensitivity than others. Two separate studies tested the hypothesis that agreeableness moderates the links between rejection sensitivity and interpersonal outcomes. Study 1 included 198 boys and 264 girls from the U.S.A. ($M = 14.24$ years old). Study 2 included 86 boys and 115 girls from China ($M = 14.21$ years old). Across studies, low agreeableness and high rejection sensitivity were uniquely associated with withdrawal, friendship dissatisfaction, and adverse conflict consequences. Cross-cultural replication underscores the universality of the risk confronting low agreeable youth with elevated rejection sensitivity.

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1. Introduction

People react differently to perceptions of rejection. *Rejection sensitivity*, the trait-like dispositional tendency to defensively expect, perceive, and overreact to rejection (Downey & Feldman, 1996), helps to explain these behavioral differences. Prior rejection experiences may increase one's sensitivity to rejection (e.g., Wang, McDonald, Rubin, & Laursen, 2012). Individuals high in rejection sensitivity respond to perceived rejection with defensive behaviors (e.g., withdrawal) that damage relationships (Downey, Lebolt, Rincon, & Freitas, 1998). Although high rejection sensitivity is associated with maladjustment (e.g., McDonald, Bowker, Rubin, Laursen, & Duchene, 2010; Sandstrom, Cillessen, & Eisenhower, 2003), not all rejection-sensitive individuals experience interpersonal difficulties (Freitas & Downey, 1998). Studies with adults suggest that outcomes are worst when rejection sensitivity is coupled with problematic personality characteristics like poor self-regulation (e.g., Ayduk et al., 2008; Gyurak & Ayduk, 2008). Yet because few studies have examined rejection sensitivity at earlier ages, it is not clear whether the same conclusions apply to children

and adolescents. The present investigation examined the links between rejection sensitivity, agreeableness, and interpersonal adjustment in young adolescents. Little is known about the universality of the effects of rejection sensitivity, so we conducted two studies to examine cross-cultural patterns of vulnerability, contrasting results for adolescents living in the United States (Study 1) with those for adolescents living in China (Study 2).

Agreeableness, the personality tendency to be warm, cooperative, and prosocial, is one of the strongest predictors of interpersonal adjustment across development (see Roberts & DelVecchio, 2000, for a review). Agreeableness reflects the desire to maintain harmonious social relationships (Graziano & Eisenberg, 1997). Researchers have postulated that agreeableness reflects important self-regulatory processes that underlie social interactions (Jensen-Campbell, Graziano, & Hair, 1996). In particular, agreeableness may be closely associated with the development of effortful control in childhood (Ahadi & Rothbart, 1994). Indeed, researchers have shown that temperament and personality are more alike than different, and that agreeableness is captured in the trait of effortful control (Tackett, Kushner, De Fruyt, & Mervielde, 2013). As children develop, agreeableness reflects their increasing ability and willingness to inhibit negative affect and impulses in order to maintain relationships (Laursen & Richmond, 2014). From this view, individuals low in agreeableness experience more relationship problems

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and interpersonal difficulties than those with higher levels of agreeableness. Compared to their more agreeable counterparts, youth and adults low in agreeableness react more negatively in interpersonal conflicts (Jensen-Campbell et al., 1996), engage in more antisocial and risky behaviors (e.g., Laursen, Pulkkinen, & Adams, 2002; Robins, John, & Caspi, 1994), and experience more social and adjustment difficulties (Jensen-Campbell et al., 2002; Laursen, Hafen, Rubin, Booth-LaForce, & Rose-Krasnor, 2010). These findings suggest that, as a reflection of poor self-regulation, low agreeableness has significant negative implications for interpersonal adjustment across development.

Low agreeableness may be particularly problematic for individuals high in rejection sensitivity. Youth and adults with poor self-regulation have great difficulties regulating negative emotions (Graziano & Eisenberg, 1997). Poor self-regulation also exacerbates existing personal vulnerabilities. For instance, compared with their more agreeable counterparts, low agreeable adults who are high on negative emotionality are more aggressive and experience more adjustment difficulties (Meier & Robinson, 2004; Ode & Robinson, 2007). Behaviorally vulnerable children in middle school are most at risk for increased victimization if they are also low in agreeableness (Jensen-Campbell et al., 2002). Children high in negative emotionality are significantly more likely to experience psychopathology if they also lack effortful control (e.g., Eisenberg, Fabes, Guthrie, & Reiser, 2000; Nigg, 2006). Thus, if we assume that agreeableness is a reflection of effortful control, then it follows that low agreeableness may make it more difficult for individuals to regulate the negative affect and cognitions associated with vulnerabilities like rejection sensitivity.

Additionally, low agreeableness may exacerbate the negative consequences of rejection sensitivity by facilitating the development and accessibility of rejection cues and cognitions (Meier, Robinson, & Wilkowski, 2006; Ode & Robinson, 2009). In particular, research suggests low agreeableness strengthens rejection cues and hostile emotions (Barlett & Anderson, 2012; Ode & Robinson, 2009). Low agreeable individuals process social information in ways that are congruent with a rejection schema (Ode, Robinson, & Wilkowski, 2008). Compared with more agreeable individuals, they are also more suspicious and distrusting of others' motives, and more susceptible to the influence of hostile thoughts (Meier et al., 2006; Wilkowski, Robinson, & Meier, 2006). In this view, low agreeableness may further activate and strengthen the rejection cues and cognitions associated with rejection sensitivity, thereby exacerbating the negative consequences of rejection sensitivity.

Although no research to date has examined rejection sensitivity and agreeableness, there is some support for these speculations. Research has shown that rejection-sensitive adults with poor self-regulation experience significantly more negative outcomes (e.g., lower self-esteem; borderline personality features; drug use) than their more self-regulated counterparts (Ayduk et al., 2000, 2008). Rejection sensitivity has also been associated with aggression, peer rejection, and low self-worth among children who struggle to delay gratification (Ayduk et al., 2000). It remains to be seen whether agreeableness plays a role in the adjustment of youth who are sensitive to rejection.

1.1. Overview

The goal of the present investigation was to examine whether agreeableness moderates the associations between rejection sensitivity and interpersonal difficulties among young adolescents in the United States (Study 1) and China (Study 2). Given that peer rejection becomes an increasingly prominent concern in early adolescence across cultures (Rubin, Bowker, McDonald, & Menzer, 2013), and that personality is highly malleable during this time

(Shiner, 2009), early adolescence provides an excellent context to examine how fears about rejection and social-cognitive biases might interact with personality to contribute to interpersonal difficulties. Examining links between agreeableness, rejection sensitivity, and youth adjustment in different cultures is a fruitful way to understand culturally specific and universal processes of individual vulnerabilities and interpersonal adjustment.

We hypothesized that agreeableness would moderate the associations between rejection sensitivity and interpersonal adjustment, such that rejection sensitivity would have the strongest association with interpersonal difficulties (e.g., withdrawal; low friendship satisfaction) for low agreeable adolescents compared with high agreeable adolescents. Moreover, we predicted that these relations would be similar across studies. In particular, although Hofstede indexes (e.g., Hofstede & Hofstede, 2001) highlight cultural differences between the United States and China, research has provided strong evidence for the universality of personality (Mezulis, Abramson, Hyde, & Hankin, 2004), and that agreeableness serves similar functions across different cultures (Benet-Martinez & Oishi, 2008).

2. Study 1

2.1. Method

2.1.1. Participants and procedure

Participants included 362 (198 boys and 164 girls) 9th grade adolescents ($M = 14.24$ years old, $SD = 0.51$) attending public schools in the Washington D.C. metropolitan area. Of this total, 53.9% ($n = 196$) were Caucasian, 15.9% ($n = 58$) were African American, 13.3% ($n = 48$) were Asian American, 11.4% ($n = 41$) were Hispanic American, and 5.2% ($n = 19$) were bi- or multiracial. Hollingshead (1975) socioeconomic scores ranged from 9 to 66 ($M = 54.14$, $SD = 10.28$) out of a potential range of 8 to 66, and demonstrated that the majority of the participants were upper-middle class.

Data were collected in the Spring (April–June). Participants were first contacted by telephone; if both parents and adolescents expressed interest, parental consent forms, adolescent assent forms, and surveys were mailed to the home with addressed and stamped return envelopes (consent rate = 84%).

2.1.2. Measures

Agreeableness was measured with 9 items from the Big Five Inventory (John & Srivastava, 1999) rated on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Sample item: “I see myself as someone who likes to cooperate with others”. Item scores were averaged. Internal reliability was high ($\alpha = .81$). Agreeableness was approximately normally distributed.

Rejection Sensitivity was measured with the Children's Rejection-Sensitivity Questionnaire (Downey et al., 1998). Participants responded to six hypothetical vignettes describing potential rejection situations involving peers. After reading each vignette, participants rated the degree to which the situation would make them feel nervous on a scale from 1 (*not nervous*) to 6 (*very, very nervous*). Sample item: “Imagine it's Saturday and you're carrying groceries home for your family. It's raining hard and you want to get home FAST. Suddenly, the paper bag you are carrying rips. All your food tumbles to the ground. You look up and see a couple of kids from your class walking quickly. You wonder if they will stop and help you.” Participants also rated the degree to which they expected to be rejected on a scale from 1 (*no*) to 6 (*yes*). Sample item: “Do you think they will offer to help you?” The rejection sensitivity variable was created by multiplying the rating for nervousness by the rating for rejection expectation for each vignette and then summing the

products. Internal reliability was adequate ($\alpha = .77$). Criterion-related validity for rejection sensitivity was established in this sample: Rejection sensitivity was positively correlated with neuroticism ($r = .40, p < .001$) and negatively correlated with extraversion ($r = -.33, p < .001$), conscientiousness ($r = -.26, p < .001$), and openness to experience ($r = -.15, p = .01$).

Withdrawal was measured with an 8-item subscale from the Youth Self Report (Achenbach & Rescorla, 2001). Participants rated each item on a scale from 0 (*not true*) to 2 (*very often true*). Sample items: “I keep from getting involved with others; I am secretive or keep things to myself.” Item scores were averaged. Internal reliability was adequate ($\alpha = .72$).

Friendship Satisfaction was measured with a 3-item subscale from the Network of Relationship Inventory (Furman, 1996). Participants rated each item on a scale from 1 (*not satisfied*) to 5 (*extremely satisfied*). Sample item: “I am happy with how things are between my best friend and me.” Item scores were averaged. Internal reliability was high ($\alpha = .88$).

Adverse Conflict Impact was measured using a single item from the Interpersonal Conflict Questionnaire (Laursen, 1993), wherein social interaction records provided event-contingent cues to exchanges that involved disagreement (Burk, Denissen, Van Doorn, Branje, & Laursen, 2009). At the end of the day for three consecutive days (Thursday, Friday, and Saturday), a subsample of participants completed a worksheet describing all social interactions lasting at least five minutes, indicating whether any involved a disagreement. Participants then completed questionnaires describing the characteristics of each disagreement. Conflict was defined as disagreement: “You objected to something someone said or did, someone objected to something you said or did, or you and someone had a quarrel or argument.” For each conflict, participants rated adverse conflict impact, describing the perceived consequences of the disagreement on the relationship. “How did the disagreement affect your relationship?” Participants rated each disagreement on a 5-point scale ranging from 1 (*made it better*) to 5 (*made it worse*). Previous research has demonstrated the reliability and validity of single-item assessments with multiple targets or sources because each event is treated as an independent indicator (Bukowski, Cillessen, & Velasquez, 2012; Grice, Mignogna, & Badzinski, 2011). Ratings were averaged across all disagreements reported by a participant ($M = 3.46$ disagreements, $SD = 2.80$).

Confounding Variables. Supplemental analyses included confounding variables taken from three instruments. Anxiety/depression, aggression, and delinquency were drawn from the Youth Self Report (Achenbach & Rescorla, 2001). Each was rated on a scale from 0 (*not true*) to 2 (*very often true*). Internal reliability was adequate ($\alpha = .75-.80$). Social anxiety and physical symptoms were drawn from the Multidimensional Anxiety Scale for Children (March, 1998). Each was rated on a scale from 0 (*never true about me*) to 3 (*often true about me*). Internal reliability was high ($\alpha = .87-.88$). Neuroticism, extraversion, conscientiousness, and openness to experience were drawn from the Big Five Inventory (John & Srivastava, 1999). Each was rated on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Internal reliability was high ($\alpha = .81-.85$).

2.1.3. Data analysis

Path analyses were conducted using Mplus 7.31 (Muthén & Muthén, 1998–2016) to measure associations from rejection sensitivity and agreeableness to interpersonal outcomes (i.e., withdrawal, friendship satisfaction, adverse conflict impact). To test the main research question of whether agreeableness moderated the association between rejection sensitivity and interpersonal outcomes, the model also included a path from the interaction of rejection sensitivity and agreeableness to each interpersonal

outcome. The interaction term was created by centering rejection sensitivity and agreeableness and then multiplying the two variables. Simple slopes follow-up analyses (Preacher, Curran, & Bauer, 2006) were conducted to examine the association between rejection sensitivity and interpersonal outcomes for adolescents who were low on agreeableness (-1 SD below the mean, $n = 59$) and those who were high on agreeableness ($+1$ SD above the mean, $n = 61$). Additionally, the Johnson–Neyman technique was used to probe significant interaction effects and identify a region of significance. Coefficient difference tests (Paternoster, Brame, Mazerolle, & Piquero, 1998) evaluated whether the magnitude of the associations between rejection sensitivity and interpersonal outcomes differed by levels of agreeableness.

Fig. 1 depicts the measurement model. On average, 17.8% (Range: 0–41.7%) of the data were missing on study variables. The majority of the missing data pertained to Adverse Conflict Impact, as only a subset of the overall sample participated in this specific exercise. Little’s MCAR test (Little & Rubin, 1987) revealed that data were missing completely at random, $\chi^2(462) = 487.64, p = .20$. Full information maximum likelihood (FIML) was used to address missing data, which is robust on levels of missingness as high as 50% (Graham, 2009).

2.2. Results

2.2.1. Preliminary analyses

Table 1 presents the zero-order correlations between variables. Agreeableness was negatively associated with rejection sensitivity, withdrawal, and adverse conflict impact, and positively associated with friendship satisfaction. Rejection sensitivity was positively associated with withdrawal, and negatively associated with friendship satisfaction. Withdrawal was negatively associated with friendship satisfaction, and positively associated with adverse relationship impact.

2.2.2. Rejection sensitivity and agreeableness as predictors of withdrawal among U.S. youth

Table 2 describes results of the path analysis predicting withdrawal. Agreeableness was negatively associated with withdrawal, and rejection sensitivity was positively associated with withdrawal. Consistent with our hypothesis, the interaction between agreeableness and rejection sensitivity was significant. Fig. 2 depicts results of the simple slopes follow-up analyses. Rejection sensitivity was positively associated with withdrawal for adolescents who were low on agreeableness (-1 SD below the mean, or $-.65$) ($\beta = .51, p < .001, 95\% \text{ CI } [.39, .59]$) and for adolescents who were high on agreeableness ($+1$ SD above the mean, or $+.65$) ($\beta = .21, p = .002, 95\% \text{ CI } [.09, .33]$). Confirming these results, Johnson–Neyman analyses demonstrated the region of significance for agreeableness was all values less than 0.65. In other words,

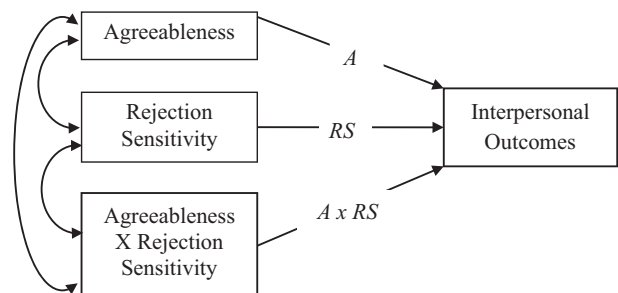


Fig. 1. Measurement model: Agreeableness, rejection sensitivity, and the interaction between agreeableness and rejection sensitivity as predictors of interpersonal outcomes.

Table 1

Correlations, means, and standard deviations.

Variable	Correlation (<i>r</i>)				Study 1 (U.S.)		Study 2 (China)	
	1	2	3	4	<i>M</i>	(<i>SD</i>)	<i>M</i>	(<i>SD</i>)
1. Agreeableness	–	–.26**	–.36**	.29**	3.94	(0.61)	3.70	(0.64)
2. Rejection Sensitivity	–.19*	–	.30**	–.29**	46.89	(28.41)	35.45	(24.08)
3. Withdrawal	–.32**	.44**	–	–.13	0.33	(0.33)	0.30	(0.18)
4. Friendship Satisfaction	.30**	–.14*	–.26**	–	4.34	(0.67)	4.26	(0.70)
5. Adverse Conflict Impact	–.22*	.10	.22*	–.11	2.91	(0.68)		

Note. Study 1 (U.S.) *n* = 362. Study 2 (China) *n* = 201. Correlations from Study 1 (U.S.) are presented below the diagonal; correlations from Study 2 (China) are presented above the diagonal. Agreeableness was rated on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Rejection sensitivity scores ranged from 6 (*least sensitive to rejection*) to 162 (*most sensitive to rejection*). Withdrawal was rated on a scale from 0 (*not true*) to 2 (*very true*). Friendship satisfaction was rated on a scale from 1 (*not satisfied*) to 5 (*extremely satisfied*). Adverse conflict impact scores were rated on a scale ranging from 1 (*made it better*) to 5 (*made it worse*).

* *p* < .05, two-tailed.** *p* < .001, two-tailed.**Table 2**

Agreeableness moderates the association between rejection sensitivity and interpersonal outcomes: Results from path analyses for U.S. and Chinese adolescents.

Predictor	Outcome		
	Withdrawal	Friendship Satisfaction	Adverse Conflict Impact
	β (SE)	β (SE)	β (SE)
<i>Study 1 (U.S.)</i>			
1. Agreeableness (<i>A</i>)	–.24** (.05)	.28** (.06)	–.16* (.08)
2. Rejection Sensitivity (<i>RS</i>)	.35** (.05)	–.06 (.06)	.03 (.08)
3. Agreeableness by Rejection Sensitivity (<i>A</i> × <i>RS</i>)	–.15* (.05)	.12* (.06)	–.31* (.09)
<i>Study 2 (China)</i>			
1. Agreeableness (<i>A</i>)	–.25* (.07)	.21* (.08)	
2. Rejection Sensitivity (<i>RS</i>)	.22* (.07)	–.20* (.07)	
3. Agreeableness by Rejection Sensitivity (<i>A</i> × <i>RS</i>)	–.15* (.07)	.18* (.07)	

Note. Study 1 (U.S.) *n* = 362. Study 2 (China) *n* = 201.

* *p* < .05, two-tailed.** *p* < .001, two-tailed.

rejection sensitive youth who scored less than 0.65 on agreeableness were more likely to score higher on withdrawal than youth with higher agreeableness scores, $t(362) = 1.97$, $p = .05$. A coefficients difference test (Paternoster et al., 1998) indicated that the two slopes were significantly different ($z = 4.29$, $p = .01$).

2.2.3. Rejection sensitivity and agreeableness as predictors of friendship satisfaction among U.S. youth

Table 2 describes results of the path analysis predicting friendship satisfaction. Agreeableness was positively associated with friendship satisfaction, and rejection sensitivity was negatively associated with friendship satisfaction. Consistent with our hypothesis, the interaction between agreeableness and rejection sensitivity was significant. Fig. 3 depicts results of the simple slopes follow-up analyses. Rejection sensitivity was negatively associated with friendship satisfaction for adolescents who were low on agreeableness (–1 *SD* below the mean, or –0.65) ($\beta = -.18$, $p = .02$, 95% CI [–.30, –.07]), but not for adolescents who were high on agreeableness (+1 *SD* above the mean, or +0.65) ($\beta = .06$, $p = .63$). Confirming these results, Johnson–Neyman analyses demonstrated the region of significance for agreeableness was all scores lower than –0.22. In other words, rejection sensitive youth who scored less than –0.22 on agreeableness were more likely to score lower on friendship satisfaction than youth with higher agreeableness scores, $t(362) = -1.97$, $p = .05$. A coefficient difference test indicated that the two slopes were significantly different ($z = 3.43$, $p < .01$).

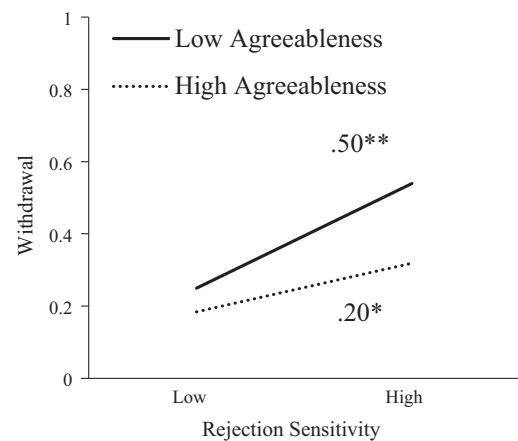
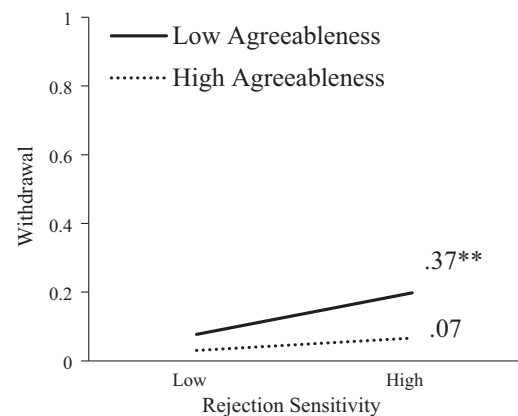
Study 1 (USA *n* = 362)Study 2 (China *n* = 201)

Fig. 2. Simple slopes follow-up analyses of the association between rejection sensitivity and withdrawal at low (–1 *SD* below the mean) and high (+1 *SD* above the mean) levels of agreeableness for U.S. and Chinese adolescents. Note. Withdrawal scores were rated on a scale ranging from 0 (*not true*) to 2 (*very true*). **p* < .05, ***p* < .001, two-tailed.

2.2.4. Rejection sensitivity and agreeableness as predictors of adverse conflict impact among U.S. youth

Table 2 describes results of the path analysis predicting adverse conflict impact. Agreeableness was negatively associated with adverse conflict impact. Consistent with our hypothesis, the interaction between agreeableness and rejection sensitivity was significant. Fig. 4 depicts results of the simple slopes follow-up analyses. Rejection sensitivity was positively associated with adverse conflict impact for adolescents who were low (–1 *SD* below the mean,

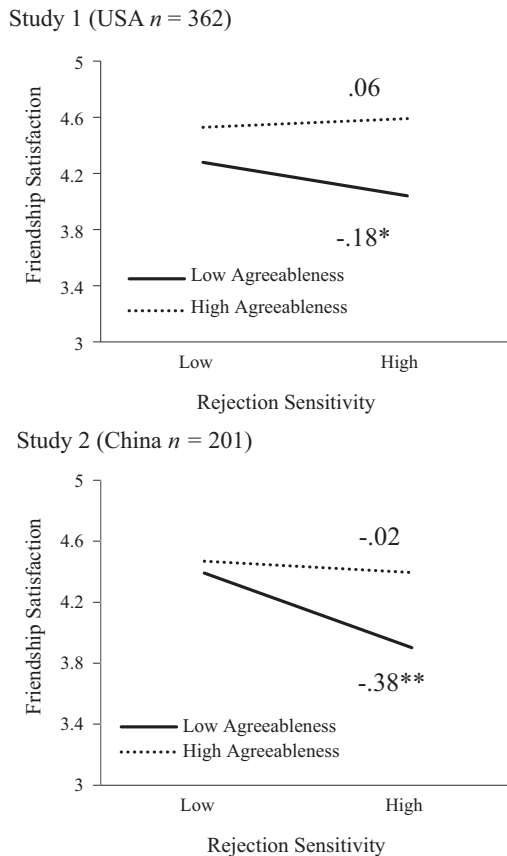


Fig. 3. Simple slopes follow-up analyses of the association between rejection sensitivity and friendship satisfaction at low (-1 SD below the mean) and high ($+1$ SD above the mean) levels of agreeableness for U.S. and Chinese adolescents. Note. Friendship satisfaction was rated on a scale ranging from 1 (not satisfied) to 5 (extremely satisfied). * $p < .05$, ** $p < .001$, two-tailed.

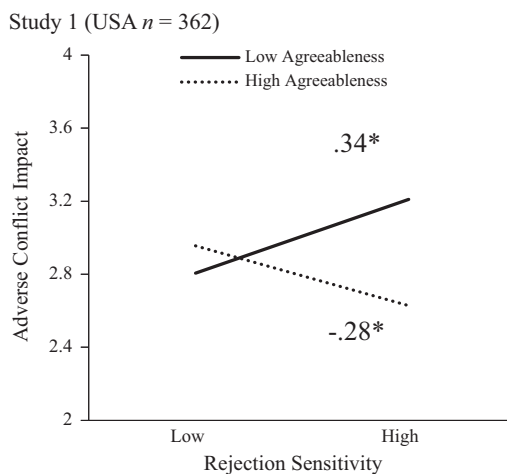


Fig. 4. Simple slopes follow-up analysis of the association between rejection sensitivity and adverse conflict impact from conflict at low (-1 SD below the mean) and high ($+1$ SD above the mean) levels of agreeableness for U.S. adolescents. Note. Adverse conflict impact scores ranged from 1 (made it better) to 5 (made it worse). * $p < .05$, two-tailed.

or -0.65) on agreeableness ($\beta = .34$, $p = .01$, 95% CI [.23, .47]), and negatively associated with adverse conflict impact for adolescents who were high ($+1$ SD above the mean, or $+0.65$) on agreeableness ($\beta = -.28$, $p = .04$, 95% CI [-.39, -.17]). Confirming these results, Johnson–Neyman analyses demonstrated the region of significance

for agreeableness was values between -0.44 and 0.57 . In other words, rejection sensitive youth who scored between -0.44 and 0.57 on agreeableness were more likely to score higher on adverse conflict impact than youth with higher agreeableness scores, $t(362) = 1.98$, $p = .05$. A coefficient difference test indicated that the two slopes were significantly different ($z = 8.86$, $p < .001$).

2.2.5. Supplemental analyses

The same pattern of statistically significant results emerged when anxiety/depression, aggression, social anxiety, physical symptoms, neuroticism, extraversion, conscientiousness, and openness to experience were separately entered into each model as control variables. Multiple group analyses did not reveal statistically significant differences between boys and girls in the patterns of associations.

2.3. Discussion

As hypothesized, agreeableness moderated the effects of rejection sensitivity on withdrawal, friendship satisfaction, and adverse conflict impact among youth in the United States. In particular, rejection sensitivity was linked to lower friendship satisfaction and higher adverse conflict impact, but only among youth who were low on agreeableness. Rejection sensitivity was also associated with withdrawal at both high and low levels of agreeableness, but the association was stronger for low agreeable adolescents. Taken together, these results demonstrate that low agreeableness exacerbates the links between rejection sensitivity and interpersonal difficulties, suggesting that less agreeable youth may be particularly vulnerable to the negative consequences of rejection sensitivity. Study 2 was designed to replicate these results in China.

3. Study 2

To examine the universality of rejection sensitivity and low agreeableness, we replicated the first study with youth living in China. Based on previous research suggesting an absence of culture-specific processes in the links between individual vulnerabilities and interpersonal difficulties (Wang, Duong, Schwartz, Chang, & Luo, 2014), we hypothesized that Chinese youth would resemble North American youth, such that those high in rejection sensitivity and low on agreeableness would be most at risk for interpersonal difficulties (i.e., withdrawal; low friendship satisfaction).

3.1. Method

3.1.1. Participants and procedure

Participants were 201 (86 boys and 115 girls) 9th graders ($M = 14.21$ years old, $SD = 0.62$) attending a public middle school in Beijing, China. All of the participants were Han Chinese, the predominant ethnic group in China. The percentage of youth living with two parents was 85%.

Data were collected during the Spring (April–June). Participants were first contacted by telephone; if both parents and adolescents expressed interest, parental consent and adolescent assent forms were mailed to the home with pre-addressed and stamped return envelopes, along with questionnaires (consent rate = 100%).

Questionnaires were translated by researchers who were fluent in both English and Mandarin. The measures were then back-translated and compared with English versions.

3.1.2. Measures

Agreeableness was measured with the same 9 items from the Big Five Inventory (John & Srivastava, 1999) as in Study 1. Internal

reliability was adequate ($\alpha = .73$). Agreeableness was approximately normally distributed.

Rejection sensitivity was measured with the same six hypothetical vignettes from the Children's Rejection-Sensitivity Questionnaire (Downey et al., 1998) as in Study 1. Internal reliability was adequate ($\alpha = .71$). Criterion-related validity for rejection sensitivity was established in this sample: Rejection sensitivity was positively correlated with neuroticism ($r = .45$, $p < .001$) and negatively correlated with extraversion ($r = -.21$, $p = .01$), conscientiousness ($r = -.24$, $p = .002$), and openness to experience ($r = -.12$, $p = .03$).

Withdrawal was measured with a 5-item subscale from the Youth Self-Report short-form (Achenbach & Rescorla, 2001). Participants rated each item on a scale from 0 (*not true*) to 2 (*very often true*). Item ratings were averaged. Internal reliability was adequate ($\alpha = .70$).

Friendship satisfaction was measured with the same 3 items from the Network Relationship Inventory (Furman, 1996) as in Study 1. Internal reliability was high ($\alpha = .88$).

Confounding Variables. Supplemental analyses included confounding variables taken from three instruments. *Anxiety/depression* and *aggression* were drawn from the Youth Self Report short form (Achenbach & Rescorla, 2001). Each was rated on a scale from 0 (*not true*) to 2 (*very often true*). Internal reliability was adequate ($\alpha = .78$ –.79). *Social anxiety* and *physical symptoms* were drawn from the Multidimensional Anxiety Scale for Children (March, 1998). Each was rated on a scale from 0 (*never true about me*) to 3 (*often true about me*). Internal reliability was high ($\alpha = .86$ –.88). *Neuroticism*, *extraversion*, *conscientiousness*, and *openness to experience* were drawn from the Big Five Inventory (John & Srivastava, 1999). Each was rated on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Internal reliability was adequate ($\alpha = .71$ –.75).

3.1.3. Data analysis

Path analyses were conducted using Mplus 7.31 (Muthén & Muthén, 1998–2016) to measure associations from rejection sensitivity and agreeableness to interpersonal outcomes (i.e., withdrawal, friendship satisfaction). To test the main research question of whether agreeableness moderated the association between rejection sensitivity and interpersonal outcomes, the model also included a path from the interaction of rejection sensitivity and agreeableness to each interpersonal outcome. The interaction term was created by centering rejection sensitivity and agreeableness and then multiplying the two variables. Simple slopes follow-up analyses (Preacher et al., 2006) were conducted to examine the association between rejection sensitivity and interpersonal outcomes for adolescents who were low on agreeableness (-1 SD below the mean, reflecting $n = 25$) and those who were high on agreeableness ($+1$ SD above the mean, reflecting $n = 30$). Additionally, the Johnson–Neyman technique was used to probe significant interaction effects and identify a region of significance. Coefficient difference tests (Paternoster et al., 1998) evaluated whether the magnitude of the associations between rejection sensitivity and interpersonal outcomes differed by level of agreeableness.

Fig. 1 depicts the measurement model. On average, 8.8% (Range: 0–18.4%) of data were missing on study variables. Little's MCAR test (Little & Rubin, 1987) indicated that data were missing completely at random, $\chi^2(79) = 90.19$, $p = .18$. Full information maximum likelihood (FIML) was used to address data missingness.

3.2. Results

3.2.1. Preliminary analyses

Table 1 presents the zero-order correlations between variables. Agreeableness was negatively associated with rejection sensitivity

and withdrawal, and positively associated with friendship satisfaction. Rejection sensitivity was positively associated with withdrawal and negatively associated with friendship satisfaction.

3.2.2. Rejection sensitivity and agreeableness as predictors of withdrawal among Chinese youth

Table 2 describes results of the path analysis predicting withdrawal. Agreeableness was negatively associated with withdrawal, and rejection sensitivity was positively associated with withdrawal. Consistent with our hypothesis, the interaction between agreeableness and rejection sensitivity was significant. Fig. 2 depicts results of the simple slopes follow-up analyses. Rejection sensitivity was positively associated with withdrawal for adolescents who were low on agreeableness (-1 SD below the mean, or -0.64) ($\beta = .37$, $p < .001$, 95% CI [.25, .49]), but not for adolescents who were high on agreeableness ($+1$ SD above the mean, or $+0.64$) ($\beta = .07$, $p = .29$). Confirming these results, Johnson–Neyman analyses demonstrated the region of significance for agreeableness was all values less than 0.43. In other words, rejection sensitive youth who scored less than 0.43 on agreeableness were more likely to score higher on withdrawal than youth with higher agreeableness scores, $t(201) = 1.98$, $p = .05$. A coefficient difference test indicated that the two slopes were significantly different ($z = 2.67$, $p < .01$).

3.2.3. Rejection sensitivity and agreeableness as predictors of friendship satisfaction among Chinese youth

Table 2 describes results of the path analysis predicting friendship satisfaction. Agreeableness was positively associated with friendship satisfaction, and rejection sensitivity was negatively associated with friendship satisfaction. Consistent with our hypothesis, the interaction between agreeableness and rejection sensitivity was significant. Fig. 3 depicts results of the simple slopes follow-up analyses. Rejection sensitivity was negatively associated with friendship satisfaction for adolescents who were low on agreeableness (-1 SD below the mean, or -0.64) ($\beta = -.38$, $p < .001$, 95% CI [-.26, -.50]), but not for adolescents who were high on agreeableness ($+1$ SD above the mean, or $+0.64$) ($\beta = -.02$, $p = .58$). Confirming these results, Johnson–Neyman analyses demonstrated the region of significance for agreeableness was all values less than -0.01 . In other words, rejection sensitive youth who scored less than -0.01 on agreeableness were more likely to score less on friendship satisfaction than youth with higher agreeableness scores, $t(201) = 1.97$, $p = .05$. A coefficient difference test indicated that the two slopes were significantly different ($z = -3.64$, $p < .01$).

3.2.4. Supplemental analyses

The same pattern of statistically significant results emerged when anxiety/depression, aggression, social anxiety, physical symptoms, neuroticism, extraversion, conscientiousness, and openness to experience were separately entered into each model as control variables. Multiple group analyses did not reveal statistically significant differences between boys and girls in the patterns of associations. Additional multiple group analyses verified that the associations between predictors and interpersonal outcomes (withdrawal: $\chi^2(1) = 0.01$ –1.25, $p = .26$ –.94; friendship satisfaction: $\chi^2(1) = 0.67$ –3.01, $p = .08$ –.41) were similar across cultural samples.

3.3. Discussion

Study 2 replicated results from Study 1. As hypothesized, agreeableness significantly moderated the effects of rejection sensitivity on withdrawal and friendship satisfaction among Chinese young adolescents. Rejection sensitivity was associated with withdrawal

and low friendship satisfaction, but only for youth who were low on agreeableness. These findings provide evidence that low agreeableness may be a universal risk factor for interpersonal difficulties among highly rejection-sensitive youth.

4. General discussion

The present investigation is the first cross-cultural study to examine why some youth may be more susceptible to the negative consequences of rejection sensitivity than others. Several findings were consistent across U.S. and Chinese adolescents. First, rejection sensitivity was consistently associated with interpersonal difficulties, including withdrawal and low friendship satisfaction. Second, links between rejection sensitivity and interpersonal difficulties were stronger for youth low in agreeableness than for youth high in agreeableness. The fact that similar findings emerged across both samples suggests low agreeableness is a universal risk factor for interpersonal difficulties among youth who are highly sensitive to rejection.

Across both studies, rejection sensitivity was positively associated with withdrawal and negatively associated with friendship satisfaction. These findings are consistent with previous research indicating links between rejection sensitivity and maladjustment (McDonald et al., 2010; Wang, Rubin, Laursen, Booth-LaForce, & Rose-Krasnor, 2013). As a cognitive-affective and social-information processing bias, rejection sensitivity causes individuals to readily perceive and overreact to rejection. This leads to a self-fulfilling prophecy where individuals' expectations of rejection cause them to engage in defensive actions (e.g., aggressing against or withdrawing from others; Downey et al., 1998), which in turn increases the likelihood of actual rejection. Understanding the potential moderating mechanisms of rejection sensitivity and interpersonal difficulties, then, provides critical insights toward breaking this vicious cycle for youth across different cultures.

New to this study is the finding that agreeableness moderated links between rejection sensitivity and interpersonal difficulties. We can only speculate as to why low agreeable youth are susceptible to rejection sensitivity. Low agreeableness may exacerbate the negative consequences of rejection sensitivity by facilitating the development and accessibility of rejection cues and cognitions (Meier et al., 2006; Ode & Robinson, 2009). Indeed, individuals who are low in agreeableness appear to process social information in ways that are congruent with a rejection schema (Ode et al., 2008). They are slower to categorize prosocial words than their more agreeable peers (Meier et al., 2006), and are more susceptible to the influence of hostile thoughts (Meier et al., 2006; Wilkowski et al., 2006). Compared with their more agreeable counterparts, low agreeable individuals are also more suspicious and unforgiving of others' intentions (Graziano & Eisenberg, 1997). In this view, low agreeableness may activate and strengthen rejection cues and cognitions.

Additionally, multistage models of social inference (e.g., Gilbert, Pelham, & Krull, 1988) posit that inferences about others occur in two stages: (1) an *automatic* stage where dispositions are attributed to an actor solely based on his or her behavior, and (2) a *deliberate* stage where prior perceptions are modified based on situational features. Deliberation occurs only when cognitive resources are available, and when there are personal motives for doing so (Gilbert et al., 1988). In this view, low agreeable youth may be less likely to deliberate, given the heightened accessibility of negative cognitions which likely exacerbates the automatic cognitive and affective biases associated with rejection sensitivity. Accordingly, rejection-sensitive youth may have difficulty modifying automatic negative inferences, which may increase their likelihood of engaging in relationship-damaging

behaviors. Future research is needed to further examine these possibilities.

Replication is an important feature of this study. The same pattern of moderated findings emerged for youth in the U.S. and China, suggesting universal effects of agreeableness and rejection sensitivity in early adolescence (e.g., Benet-Martinez & Oishi, 2008). Thus, despite mean level differences across cultures, there is growing evidence for consistent links between social cognitive biases, personality, and interpersonal adjustment (Mezulis et al., 2004). Together, findings suggest that personality plays an important role in how personal vulnerabilities impact youth's interpersonal adjustment across different cultures.

Several limitations are worth noting. Correlational analyses on cross-sectional data only suggest temporal processes. Given interpersonal difficulties like peer rejection may promote both rejection sensitivity and low agreeableness (Wang et al., 2012), longitudinal research is needed to better elucidate these developmental dynamics. Our interests involved personality as a potential moderator of the association between rejection sensitivity and interpersonal outcomes. However, it is possible that rejection sensitivity may moderate the relations between agreeableness and youth adjustment. Only longitudinal data can tease apart the moderating role of rejection sensitivity to better understand the links between personality and youth adjustment. All constructs across both studies were assessed with self-report measures. Although self-reports are particularly useful for understanding how youth perceive themselves and their relationships (Burr, Leigh, Day, & Constantine, 1979; Coplan & Weeks, 2010), they may be prone to biases (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Multi-method studies that utilize multiple approaches and diverse methodologies are needed to fully understand the complex links between personality, personal vulnerabilities, and interpersonal outcomes in youth across different cultures.

Limitations notwithstanding, this investigation is among the first to examine how personality moderates rejection sensitivity and interpersonal adjustment in early adolescence across different cultures. By demonstrating why some youth may be more susceptible to the negative consequences of rejection sensitivity, findings from the present study highlight the importance of considering personality moderators for understanding the links between vulnerabilities and interpersonal adjustment across different cultures.

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