Published in final edited form as:

Soc Dev. 2020 February ; 29(1): 273–289. doi:10.1111/sode.12393.

Adolescents with an entity theory of personality are more vigilant to social status and use relational aggression to maintain social status

Hae Yeon Lee,

University of Texas at Austin

David S. Yeager

University of Texas at Austin

Abstract

The present research proposed that one social-cognitive root of adolescents' willingness to use relational aggression to maintain social status in high school is an *entity theory of personality*, which is the belief that people's social status-relevant traits are fixed and cannot change. Aggregated data from three studies ($N=882$) showed that first-year high school adolescents in the U.S. who endorsed more of an entity theory were more likely to show cognitive and motivational vigilance to social status, in terms of judgments on a novel social categorization task and reports of goals related to demonstrating social status to peers. Those with an entity theory then showed a greater willingness to use relational aggression, as measured by retrospective self-reports, responses to a hypothetical scenario, and a behavioral choice task. Discussion centers on theoretical and translational implications of the proposed model and of the novel measures.

Keywords

Social status; relational aggression; social goals; implicit theories of personality; adolescence

Relational aggression is defined as strategic harm of others' reputations or social connections with others through gossip, exclusion, rejection, ostracism, or through building antagonistic social alliances (Prinstein, Boergers, & Vernberg, 2001). Adolescents who are the targets of relational aggression can experience them as deeply painful and can go on to develop a variety of problematic outcomes, including depression, stress, poor social adjustments, and worsening academic outcomes (Juvonen, Nishina, & Graham, 2000; Reijntjes, Kamphuis, Prinzie, & Telch, 2010). It is important, therefore, to understand the factors that underlie adolescents' motivation to be relationally aggressive, so that society can learn to reduce these behaviors more effectively.

One potential motivation for using relational aggression is to raise one's own status—or to prevent one's loss of status—in the peer group. That is, relationally aggressive behaviors might be seen as one of the strategies available to adolescents as they engage in *social status*

maintenance, defined as behaviors that are intended to signal one's standing in the social hierarchy of high school (Ellis, Volk, Gonzalez, & Embry, 2016). In line with this claim, past studies have found that middle adolescents with higher levels of social status (such as popularity, likability, or dominance) have shown higher engagement in relational aggression or bullying perpetration (Pouwels et al., 2017; Prinstein & Cillessen, 2003). However, past research has not sufficiently examined the potential social-cognitive processes that might account for why some adolescents are so attuned to social status that they are willing to be relationally aggressive to maintain it. The present research does this, with an eye toward identifying factors that are likely to be responsive to interventions.

First, the present study identifies a factor—the *vigilance to social status*, defined as the cognitive and motivational readiness with which adolescents prioritize social-status-relevant information and goals—that might predict the willingness to engage in relational aggression during the transition to high school. Our theoretical prediction stems from the observation that not all adolescents prioritize social status maintenance to the same extent, even though adolescence, in general, is a developmental period characterized with a heightened attention to peer social evaluation (Somerville, 2013), and to criteria for peer acceptance, rejection and social regard (Yeager, Dahl, & Dweck, 2018). Because adolescents may differ in how vigorously they play the “status game” in high school, so too might they differ in their willingness to use relational aggression to shore up their status.

Second, the present research examines a belief system that might underlie individual differences in the vigilance to social status in high school. At a high level, we expect that adolescents who think the status game is “for keeps” will play it more intensely. More precisely, we hypothesize that adolescents who believe that people's socially-relevant traits and social designations (e.g., whether they are winners or losers, bullies or victims; popular or unpopular) are fixed entities that cannot be changed may worry more pervasively about their place in the social hierarchy. This fixed belief about social traits has been called an *entity theory of personality* (Dweck, Chiu, & Hong, 1995). To adolescents who endorse an entity theory of personality, a threat to social status could signal something more profound about the inadequacy of the self and could arouse concerns about a permanent loss of reputation or social regard. This concern—that one's status might be forfeited forever after even a small social defeat—could be enough to instigate a keen vigilance to status-relevant information and goals, and perhaps license adolescents to use relational aggression to prevent the (subjectively) permanent status damage. If our hypothesis is supported, it would be important because implicit theories can be socialized (Gunderson et al., 2018), and targeted through interventions (Yeager, Trzesniewski, & Dweck, 2013).

In sum, in the present research we test the concurrent associations among adolescents' (a) willingness to use relational aggression, (b) vigilance to social status, and (c) entity theory of personality beliefs. To do this, we present data collected from three independent samples of first-year high school students; these data were aggregated in a “raw data meta-analysis” in order to ensure that the results replicate, facilitate more general conclusions, and provide more stable estimates of effect sizes with a higher statistical power.

The primary theoretical contribution of our research is to continue the field's efforts to go beyond the simplistic view that aggression in adolescence stems from deficits in social-emotional competence. Among younger children, who tend to use direct or overt forms of aggression, such as physical fighting, taunting or verbal insulting (Card, Stucky, Sawalani, & Little, 2008; Yeager, Fong, Lee, & Espelage, 2015), aggression is indeed more common among those who have social-emotional deficits in areas such as empathy or perspective-taking (Cook, Williams, Guerra, Kim, & Sadek, 2010). Among adolescents in high school, however, deficits in social-emotional competence have shown far weaker or even reversed associations with relational aggression (Cook et al., 2010; Yeager et al., 2015). We suspect this is because aggression that successfully serves status goals in high school—which can involve planned, strategic attacks on others' reputations for the sake of enhancing or maintaining one's social prominence—requires a certain amount of social savvy to pull off (Faris & Felmlee, 2011; Prinstein & Cillessen, 2003). Our study advances knowledge of adolescent aggression by highlighting factors that explain why some adolescents are motivated to deploy their social-emotional competencies in a way that harms others' relationships, while others are less inclined to do so.

Below, we provide background for our primary research questions. Then we outline the present research in greater detail.

Vigilance to Social Status

Social status refers to one's relative ranking within a social hierarchy (Faris & Felmlee, 2011), and it has been broadly conceptualized as the respect, admiration, and voluntary deference that an individual is afforded by others (Anderson, Hildreth, & Howland, 2015). In high school, status is often operationalized in terms of one's *perceived popularity*, which refers to peers' perceptions of one's social prominence in the social hierarchy (Parkhurst & Hopmeyer, 1998). To date, very little empirical research has employed cognitive tasks to assess adolescents' vigilance to status-relevant stimuli. For example, Lansu and colleagues (2014) measured adolescents' eye gaze time on high vs. low status peers' face stimuli, and found that the targets' popularity and gender moderated adolescents' selective attention to high status peers (e.g., longer eye gaze on popular peers' faces). Other studies measured status vigilance in adolescence through a lexical decision task (Silk et al., 2017), or eye-tracking (Silk et al., 2012).

To our knowledge, there have been no ecologically-valid performance tasks that assess adolescents' vigilance to high school social status cues—such as the degree to which a person is popular, socially prominent, and well-regarded by peers, independent of other confounding factors (e.g., attractiveness). We sought to develop and validate such a task here—one that did not involve idiosyncratic facial stimuli. To this end, we used a computerized card-sorting paradigm (cf. Diesendruck & haLevi, 2006) to simulate the experience of a teen walking down the hallway in high school and quickly categorizing peers in terms of “cool” or “not cool,” “winner” or “loser” categories. We assessed adolescents' reaction time (in milliseconds) when categorizing peers in terms of status-relevant social information.

Implicit Theories of Personality

Past studies have supported the notion that implicit theories of personality can predict the kinds of social information individuals search for, and how readily individuals rely on limited social information. Erdley et al. (1997) found that children with more of an entity theory of personality tend to endorse the goal of demonstrating superior performance over peers. At the level of social information processing, individuals who endorse an entity theory of personality tend to use reductionistic person trait judgment across social (Plaks, Stroessner, Dweck, & Sherman, 2001) and moral domains (Gervy, Chiu, Hong, & Dweck, 1999). In terms of behavioral responses to peer provocations, Yeager et al. (2013; 2011) found that adolescents who endorse an entity theory of personality (e.g., *bullies and victims can't change*) were more readily engage in hostile, vengeful aggressive acts against peers who excluded them, rather than seeking out peaceful means to resolve peer conflicts.

Although these results justify our hypotheses, past research on implicit theories of personality and aggression has not yet tested the theoretical model proposed here. Prior studies primarily focused on *victims'* willingness to take revenge in response to peer provocations (Yeager et al., 2013, 2011). But implicit theories studies have not addressed the root of relational aggression itself, from the *perpetrators'* perspectives. Next, past research has not applied the implicit theories model to the contexts in which one's social status (e.g., popular vs. unpopular; respected or looked down on) is believed to be a fixed entity and diagnostic of the person as a whole. Here, we defined implicit theories of personality more broadly to encompass individuals' beliefs about the fixedness or malleability of status-relevant social traits. We test whether this expansive measure predicts a willingness to *initiate* relational aggression for the sake of enhancing one's social status, going beyond past studies of victims' *responses* to bullying.

The direct test of our hypothesis reported here is needed because a case could be made for a pattern of results that is opposite to our predictions. It would be reasonable to expect that those with more of an *incremental* theory of personality—those who believe that people's traits can be improved over time—might be more vigilant to social status because they want to change their status. Under this alternative model, those with an entity theory might give up on trying to improve their status altogether because it cannot change. We do not think this is likely, however. We argue that, for those with more of an entity theory, a single social defeat can be seen as diagnostic of a permanent and unchangeable social reality. Therefore the stakes of every encounter may be high, so vigilance may be necessary. By contrast, when the outcome of social interaction is not perceived to be permanent, the stakes should be much lower, and so adolescents should not need to maintain their vigilance to status so vigorously. In sum, we test whether the data are consistent with our hypothesis, which is that when adolescents perceive “status labels” to be permanent this can motivate a willingness to enact extreme behaviors (like relational aggression) to maintain a desirable status in the eyes of their peers in high school.

Present Research

To review, the present research tested whether (1) adolescents' vigilance to social status predicts a willingness to use relational aggression in high school; and (2) implicit theories of personality predict vigilance to status and the purported behavioral consequence of status-seeking motives—that is, relational aggression. We studied ninth-grade adolescents because most of them will have begun pubertal maturations that heighten vigilance to peer social evaluation (Forbes & Dahl, 2010), and because one's social designation is highly unstable during the transition to high school (Crosnoe, 2011; Faris & Felmlee, 2011). The transition between middle school to high school is also a period when indirect aggression overtakes direct aggression as a dominant form of aggression (Yeager et al., 2015). As noted, we tested our hypotheses across three independent samples that were aggregated into a raw data meta-analysis (maximum $N=882$), because building in replications can reduce the likelihood that the results are false positive.

Method

Participants

Data were collected from 9th-grade students who attended a suburban/rural public high school (Sample 1, $N=371$), a summer high school prep program in an urban area (Sample 2, $N=308$), and an urban public magnet school (Sample 3, $N=203$) during the years 2013–2016. We recruited participants from diverse demographic and socio-economic backgrounds. The overall sample, as well as individual sample, was gender balanced (53% female) and the average age was 14.2 ($SD=0.7$, Range: 12 to 16). In terms of racial/ethnic makeup, 53% were White/European-American, 24.7% were Hispanic/Latinx, 1.8% were Black/African-American, 11.9% were Asian/Asian-American, and 8.5% were multi-racial or another race or ethnicity. See Table 1.

Procedures

We administered the student self-report survey and computerized tasks during the summer before ninth-grade (in Sample 2) or at the beginning of fall semester in the ninth-grade school year (in Samples 1 and 3), a time when concerns about peer social status were expected to be prominent (Crosnoe, 2011). All data were collected in school computer labs during regular class hours. Two research assistants visited each classroom and gave verbal instructions in front of the entire class. Students were informed that participation was voluntary and that they could withdraw at any point with no penalty. Participation for a comprehensive student survey and computerized tasks totaled about 40 minutes.

All the research procedures and materials were approved by the institutional research review board at the authors' institution, by the research review board committee at the participating school districts, and by the collaborating principal before implementation. Data were collected from students who provided a written parental consent and student assent and who were not absent on data collection days. Degrees of freedom varied across measures and analyses due to different patterns of missing data across samples. However, we did not detect any threats to our primary findings due to missing observations.

Measures

Implicit Theories of Personality—To assess the extent to which adolescents endorsed an entity theory of personality—the belief that status-relevant social traits such as bullies, victims, winners, and losers are fixed and cannot change—we administered four items from previous research (Yeager et al., 2011, 2013), e.g., “*You can’t change people who are jerks in school*,” “*Bullies and victims are types of people that really can’t be changed*.” We also administered six new, analogous items more directly related to social status, e.g., “*You can’t change whether or not people respect you in school*,” or “*Popular people and unpopular people are types of people that really can’t be changed*.” Each item was rated on a 6-point scale (1 = *Strongly disagree* ~ 6 = *Strongly agree*). Higher values corresponded to a stronger endorsement of an entity theory, or a belief that high school students’ social designations cannot change ($\alpha = .83$). These ten items loaded onto a single latent factor (factor loadings .46 ~ .68), with satisfactory model fit statistics. See online supplement for measurement models.

Card Sorting Task—We developed a novel social categorization task to measure adolescents’ vigilance to peer social status information. The task design was informed by Diesendruck and haLevi (2006).

The card sorting task is comprised of a total of 18 trials. In each trial, participants were presented with three different person cards that describe various personal attributes of teenagers: e.g., appearance (e.g., “*S/He has brown hair*”, “*S/He has blue eyes*”), personal interests (e.g., “*S/He likes to watch movies*”, “*S/He likes to play basketball*”), future goals (e.g., “*S/He wants to be a doctor*”, “*S/He wants to be a teacher*”), high social status/popularity (e.g., “*S/He has many friends*”, “*S/He is popular*”), and low social status/unpopularity (e.g., “*S/He doesn’t get invited to parties*”, “*S/He has few friends*”). For neutral attributes, we carefully selected their descriptors and validated them in a pilot study to avoid confounding them with high school social status cues (e.g., height, weight, attractiveness, academic competence, family social class).

The card sorting task is comprised of three types of trials: (1) high social status/popularity congruent trials; (2) low social status/unpopularity congruent trials; and (3) neutral attributes congruent trials. To make a trial *congruent*, two out of three cards share a matching attribute (e.g., two cards describe “S/He is popular”), while a third card does not share the matching cue (e.g., the remaining card says “S/He is unpopular”), therefore the congruent attribute can be used to categorize the target person in the middle. See Figure 1.

This computerized card sorting task was programmed and administered on Inquisit Millisecond 4.0 software package (Inquisit 4.0 [Computer software], 2008), which allows for precise reaction time recording, making it useful for the present field study. Following several practice trials, participants were instructed to pair the person in the middle card with either the *left* or *right* person card as quickly as possible. In *high social status/popularity congruent* trials, the target card in the middle had a “popular” descriptor (e.g., “*S/He always got invited to parties*”) that matches with either card option, while a neutral descriptor was matched with the remaining card, thus creating a choice conflict. Similarly, in the *unpopularity congruent* trials, the target card in the middle always had an “unpopular”

descriptor (e.g., “*S/He has only few Twitter followers*”). We counter-balanced four factors: (1) the sequence of individual trials, (2) the order of attribute statements in each card, (3) the position of the left or right option card, and (4) the gender of the stimulus.

The focal measure indexing adolescents’ vigilance to social status was the speeds of sorting (*ms*) in social status congruent trials—that is, how *quickly* and *spontaneously* adolescents categorize the target person cards in the middle into “popular” or “unpopular” social categories, while ignoring other neutral attributes (e.g., appearance, personal interests, and future goals). A latent variable was indicated with the average reaction time speeds (*ms*) on high status/popularity congruent and low status/unpopularity congruent trials. Raw reaction time in *ms* was non-normal, as in many other cognitive task reaction time measures (Ratcliff, 1993). We removed the outlier trials ($> +2SD$ or $< 100\text{ ms}$, $< 3\%$ of the total trials within each sample) and transformed the remaining data by taking the square root. Using this transformed variable, we calculated the average speed (*ms*) of sorting in the social status congruent trials, separately for popularity and unpopularity cue trials where participants actually sorted out the cards in terms of the shared social status cues, while discarding the trials that were categorized in terms of other neutral attributes. The Shapiro-Wilk joint test of skew and kurtosis indicated that the resulting reaction time distribution notably improved normality issues ($W = .99$, $p = .04$). See the online supplement for data transformation.

For ease of interpretation, the transformed sorting reaction time variable was reversed by multiplying by -1 , so that higher numeric values correspond to faster social categorization—that is, more intense vigilance to peer social status. Thus, the resulting sorting reaction time measure was expected to positively correlate with an entity theory of personality, social status demonstration goals, and relational aggression.

Social Status Demonstration Goals—To supplement performance task measures for vigilance to status, we also assessed high school adolescents’ self-reported motivational focus on demonstrating superior status in the eyes of peers. We administered eight items from *Social Status Demonstration Goals Scale* (Ryan & Shim, 2008). Four items assessed *social status demonstration-approach goals*, indicating a motivational focus on demonstrating the superior social status and desiring to gain higher social status in peer relations (e.g., “*It is important to me that other kids think that I am popular.*”). Additional four items measured *social demonstration-avoidance goals*, indicating a motivational focus on preventing a perception of lower social status and desiring to distance oneself from lower status group members (e.g., “*It is important to me that I don’t embarrass myself around my friends.*”). Items were rated on a 5-point scale (1 = *not at all true* ~ 5 = *very true*) and used to indicate a single latent factor (full composite, $\alpha = .81$; *approach goals* only, $\alpha = .82$; *avoidance goals* only, $\alpha = .69$; see online supplement).

Relational Aggression—To assess participants’ willingness to engage in relational aggression, we administered three measures to improve measurement errors: (1) self-reports of actual engagement in relational aggression; (2) willingness to engage in relational aggression in a hypothetical scenario; and (3) lunchroom social distance from low social status/unpopular peers.

All of these measures involve self-report, but they are informative for theory development because (a) prior studies find moderate correspondence between self-reports and peer nominations (Pellegrini & Long, 2002), and (b) the measures assess a *willingness* to engage in the behavior, which is the psychological construct under investigation here. Real-world behavioral aggression, by contrast, does not only depend on willingness but also on the opportunity to be aggressive (e.g., the presence of a peer to victimize) and peer norms (e.g., the presence of peers who would confer status if one was relationally aggressive). Our working assumption is that a willingness to be aggressive, when there is an occasion to do so and in an environment that rewards aggression with status (Hawley, 2014), will translate into relationally aggressive behavior.

Reported behaviors—First, teenagers' self-reported engagement in relational aggression was measured using 4- items from *Overt/Relational Aggression Scale* (Prinstein et al., 2001). Participants reported how frequently they had engaged in the behavior in the past two weeks in school. The items described various forms of relational aggression—e.g., “*I left out another teen of an activity or conversation that he or she really wanted to be included in*”, “*I did not sit near another teen at lunch or in class*”, “*I did not invite another teen to a party or other social events even though I knew that he or she wanted to go*”. Responses were rated on a 5-point scale (1=*never*, 2=*once or twice*, 3=*a few times*, 4=*about once a week*, 5=*a few times a week*), where higher values correspond to more frequent engagement in relational aggression toward peers. These four items showed acceptable reliability ($\alpha = .84$).

Hypothetical scenario—Next, teenagers' willingness to use relational aggression was measured in a hypothetical scenario that was informed by qualitative and quantitative research on high school relational aggression (e.g., Guerra, Williams, & Sadek, 2011; Wiseman, 2009). Participants were first presented with a brief vignette that reads:

“Imagine that you were just starting high school and sitting with new people after class that you really wanted to impress and be friend with. Then an unpopular person you knew in middle school, who doesn't have many friends in high school, came up to you and wanted to talk to you. You see that the person is about to say something embarrassing about you from your middle school years in front of the new people you wanted to be friends with.”

Then, adolescents were asked what they would feel like doing in response to this situation. Two items described behaviors that could signal relational aggression toward the low social status/ unpopular peer— “*Pretending you didn't know or remember the person from middle school*,” and “*Trying to embarrass the person you knew in middle school in front of your new friends*.” Three non-aggressive, benign statements were also included as fillers (e.g., “*Trying to accept and include the person you knew in middle school*.”). Participants reported their responses on a 7-point scale (1= *Not at all* ~ 7= *An extreme amount*).

Behavioral choice task—Finally, a novel behavioral choice task was developed to assess adolescents' willingness to use subtle relational aggression in contexts of school lunch sitting. The school lunchroom is a common place where teens experience peer exclusion and bullying (Loflin & Barry, 2016; Wiseman, 2009). We expected that those who stay vigilant

to social status might be reluctant to sit next to unpopular peers in school lunch where their behavior is highly visible to other peers, signaling lower status. Thus, those with high vigilance to social status would be more likely to sit far from low status peers as a behavioral means to prevent perceptions of low status. This measure was important to our argument regarding status maintenance, since none of the other aggression measures included an example of an indirect behavior that makes another person feel excluded but avoids the impression that one is being overtly aggressive.

Following the prompt below, participants were presented with four peer profiles (counterbalanced)—two high social status/popular, two low social status/unpopular students.

“Imagine one day you walked into the lunchroom and tried to grab a seat. But then you realized that the group of friends you usually sit with has no more room at their table. You wave over at them, but they tell you there is no more room. Now you have to find a different seat... Choose the option that best describes your choices in the lunchroom.”

An example of high social status/popular peer profile reads:

“Jessica is a ninth grader at your school. She is the Student Council President. She likes to practice tumbling with her cheer squad and compete in cheer competitions. During her free time, she usually goes to her friends’ house parties or goes shopping at the mall. She sees that you have nowhere to sit and she waves at you. She says that there are some open seats near her.”

A low social status/unpopular peer profile reads:

“George is a ninth grader at your school. He is the tuba section leader for the school band. He likes to complete Sudoku puzzles and read nonfiction. He doesn’t have many friends yet, so he tends to watch anime shows on the weekends. He sees that you have nowhere to sit and he waves at you. He says that there are some open seats near him.”

These peer profiles were displayed with one of two lunch sitting charts (See online supplement for visual stimuli). Students were then asked to click one seat they would like to choose. Responses were coded in terms of how far participants chose to sit from the target person (1= *right next to the person* ~ 5= *as far as possible*). Distance scores from two unpopular peer vignettes were averaged to indicate adolescents’ behavioral intent to use social distance to manage status.

Validity—Because these measures were new and their relation to the overall concept of *social status maintenance* was not yet confirmed, in a pilot study ($N=646$, $M_{\text{age}}=14.4$), we tested correlations with participants’ social dominance orientation (SDO; Pratto, Sidanius, Stallworth, & Malle, 1994), a tendency to endorse group-based hierarchy differences. We found significant correlations with SDO for all three relational aggression measures: self-reported relational aggression $r=.30$, $p<.001$; hypothetical scenario relational aggression $r=.31$, $p<.001$; lunchroom seat distance from low status/ unpopular peers $r=.30$, $p<.001$. This is consistent with our claim that these measures examine relational aggression carried

out for the sake of status-seeking. See the online supplement Table S1 for item-level analyses.

Data reduction—Our conceptual hypothesis centers on relational aggression in general, and we expected it to be supported across these diverse measures, which share variance. Therefore, to reduce complexity, we simplified the data by aggregating (1) four items of self-reports relational aggression, (2) two items of hypothetical scenario aggression, and (3) one lunch sitting distance score to estimate a single latent factor, where higher values correspond to a stronger willingness to use relational aggression in actual or hypothetical situations. A latent measurement model analysis is reported in the online supplement (and see the bivariate correlations in Table 2).

All supplementary analyses, syntax, measures and task stimuli are posted at this online repository: osf.io/jqxfg.

Results

Preliminary Analysis

A premise of our research is that adolescents are generally attuned to social status cues (Lansu, Cillessen, & Karremans, 2014; Silk et al., 2017), and so we analyzed the overall tendency to categorize peers in terms of social status cues in the card sorting task (see Figure 2). As expected by contemporary theories of adolescence (Crone & Dahl, 2012; Crosnoe, 2011), high school adolescents sorted the social world more by peer social status cues than chance ($M_{\text{popularity}} = .58$, $SD_{\text{popularity}} = .21$). The average proportion (%) of sorting in terms of popularity cues was significantly different from the chance level in popularity trials, $t(613) = 9.33$, $p < .0001$, $d = .38$. A series of pairwise t -tests of the average proportions revealed that the average % of sorting in terms of popularity cues was significantly different from the average % of sorting by appearance, $t(545) = 16.23$, $p < .0001$, $d = .69$, and the average % of sorting by goals, $t(604) = 7.12$, $p < .0001$, $d = .29$. The difference between the average % sorting by hierarchy and by interest was not significant, but it was in the direction of greater sorting by popularity, $t(611) = 0.85$, $p = .39$, $d = .035$. Furthermore, boys and girls did not significantly differ in terms of how many trials, on average, they sorted out peers in terms of social status information, $t(607) = -0.63$, $p = .53$, $d = .05$. See Figure 2.

The % of trials sorted by social status cues did not predict relational aggression across all measures, $r = .02$, $p = .65$ for self-reported relational aggression; $r = .02$, $p = .55$ for hypothetical scenario relational aggression; $r = .09$, $p = .27$ for lunchroom distance from unpopular peers (see Table 2 for bivariate correlation analyses). This null result appeared across our replication studies, so it is not likely to be a false negative finding. In what follows, we examine sorting reaction time (ms) as an individual difference of adolescents' *vigilance* to social status, across three replications. See Figure 3.

Primary Analyses

A structural equation modeling approach was used to examine whether adolescents' entity theories of personality beliefs and vigilance to social status (as measured by the card sorting task and social status demonstration goals) predict their willingness to engage in relational

aggression. Further, the structural model tested whether there was an indirect effect from adolescents' entity theory of personality to relational aggression via sorting speeds and social status demonstration goals. Participants' gender, race/ethnicity, and sample (school 1~3) dummy variables were entered as model covariates. The full information maximum likelihood (FIML) estimator was used to avoid listwise deletion (Enders & Bandalos, 2001).

In the structural equation model quicker judgments when categorizing peers in terms of social status cues (i.e. faster speed on popularity or unpopularity congruent trials) predicted relational aggression, unstandardized $b = .002$, standardized $\beta = .204$, $p = .023$, 95% CI [.000, .003]. Furthermore, higher social status demonstration goals (i.e., saying "*it is important for me to be seen as popular*") predicted more willingness to engage in relational aggression, $b = .073$, $\beta = .320$, $p = .002$, 95% CI [.027, .119] (the b paths; See Figure 4).

Next, we tested whether these individual differences—the tendency to be vigilant to peer social status and to subsequently be willing to engage in relational aggression to maintain social status—would be predicted by implicit theories of personality. Indeed, adolescents' entity theory of personality (the belief that status-relevant social traits cannot change) predicted a stronger willingness to use relational aggression toward peers, $b = .069$, $\beta = .262$, $p = .006$, 95% CI [.019, .119] (the c path; See Figure 4). Next, a greater entity theory significantly predicted quicker sorting speeds in social status congruent trials, $b = 6.602$, $\beta = .230$, $p = .000$, 95% CI [3.445, 9.758] and greater self-reported social status demonstration goals, $b = .526$, $\beta = .453$, $p = .000$, 95% CI [.382, .670] (the a paths; See Figure 4). Finally, an entity theory of personality predicted greater relational aggression via both status-based sorting speeds and social status demonstration goals, total indirect effect $\beta = .454$, $p = .000$ (partial indirect effects via each measure was also significant, $p < .05$). Model fit statistics were acceptable, $\chi^2(375) = 736.56$, $p = .000$, RMSEA = .033, 90% CI [.030, .037], CFI = .937, TLI = .923, SRMR = .056.

Discussion

The present research examined the possibility that adolescents' beliefs about the fixedness versus malleability of status-relevant traits might predict their motivation to engage in relational aggression to win (or at least not lose) the "status game" in high school. Results showed that adolescents who endorsed an *entity theory of personality*, the belief that people's status-relevant traits (e.g., being popular or not; admired or disrespected) are fixed entities, were more motivated by status attainment (or loss) and more spontaneously used status-relevant cues in mentally categorizing novel peers into groups. Further, this greater vigilance to social status predicted stronger willingness to relationally aggress against peers to maintain a desirable social status in high school.

The novel performance task developed here indicated that adolescents in our study, on average, tended to rely on social status information to form meaningful mental representations about peers. This was consistent with claims that status pursuit may have a universal effect on motivation and cognition (Anderson et al., 2015; Zitek & Tiedens, 2012), and this may be particularly pronounced in adolescence (Crone & Dahl, 2012; Lansu et al., 2014; Silk et al., 2017). Interestingly though, adolescents' overall tendencies to categorize

peers (e.g., average % of sorting) in terms of social status cues did not predict their status-seeking motives or relationally aggressive behaviors. Instead, it was reaction time—the tendency to more spontaneously make fast categorization judgments—that was correlated with a willingness to relationally aggress against peers in high school, across our three replications. This finding seems to suggest that mere attention to social status information is not a correlate of a potential to engage in problematic status-seeking behavior (e.g., relational bullying). Rather, it was how readily and vigilantly individuals monitor social status cues from the environment, presumably as a way to prevent a potential status loss in social interactions.

The finding that adolescents' tendencies to quickly categorize novel peers in terms of social status cues were significantly associated with their intentions to use relational aggression adds to the growing consensus that adolescents' actual status or status-seeking motives predict relational aggression and bullying (Cillessen & Mayeux, 2004; Garandeau, Ahn, & Rodkin, 2011; Pouwels et al., 2017). Yet the present work is different from previous studies in the sense that it measured adolescents' *vigilance* to social status information, rather than actual or perceived status (e.g., self- or peer-nominated social status) or longitudinal changes in social status as a predictor of relational aggression. Our finding concerning the sorting task provides support to the recommendation that if anti-bullying programs are to target relational aggression, prevention/intervention programs may need to take into account adolescents' sensitivity to peer social status and their behavioral inclinations to use relational aggression for the sake of status-seeking (Ellis et al., 2016; Hawley, 2014; Yeager et al., 2018, 2015).

We found that adolescents' cognitive and motivational readiness to attend to social status were robustly associated with their belief systems about the fixedness or malleability of status-relevant social traits, that is their *implicit theories of personality*. This resonates with and extends past literature on implicit theories (Erdley et al., 1997; Gervy et al., 1999; Levy & Dweck, 1999; Plaks et al., 2001; Yeager et al., 2013, 2011). Our findings conceptually replicated Erdley et al. (1997), who showed that younger adolescents with an entity theory of personality tended to exhibit a higher level of social performance goals relative to incremental theorists. The findings for card sorting speeds were consistent with Levy et al. (1999), Gervy et al. (1999), and Plaks et al. (2001), who demonstrated that an entity theory of personality led to more reductionist social information processing styles in person perception and moral judgments. In that research, entity theorists were more likely to rely on stereotype-consistent informational cues in social judgment, and more readily formed global, stable, trait-level impressions about others with minimal information. Here, we extended this notion to the domain of status-seeking and showed correlations with reported past and hypothetical aggressive behavior in adolescence.

In carrying out this research, it was necessary to design a novel measure of vigilance to social status that was ecologically valid among high school adolescents. We found that a brief (3–5 minute), web-based, highly scalable social-cognitive reaction time task could predict concurrent relational aggression across multiple measures, including self-reported engagement in relational aggression, hypothetical scenario-based relational aggression, and lunchroom sitting distance from low status peers. This methodological advance has

implications for basic and translational research. For instance, it might be adapted for use in the growing literature on the psychological precursors and consequences of social hierarchy (e.g., Anderson et al., 2015; Hawley, 2014). Or it may be useful in future evaluations of the effects of anti-bullying programs among high school adolescents, which have heavily relied on subjective self-reports. Performance tasks may prove especially useful given known reference-bias problems with self-reports of behaviors (Duckworth & Yeager, 2015). In order to facilitate all of this, the social categorization task can be accessed at this online repository (osf.io/jqxfg).

Limitations

The present research has several limitations that warrant future investigation. First, our primary contribution comes from our theoretical model and the replicable support for it, not from our potential to make causal inferences. Future investigations may attempt to replicate our results using experimental manipulations that alter adolescents' implicit theories (for such examples, see Yeager, Lee, & Jamieson, 2016).

Second, the present study did not directly examine bullying behavior, which involves a repeated, prolonged exposure to relational harm based on existing differences in social power in hierarchy, in part because there are not yet well-validated behavioral task measures of relational bullying. In fact, bullying research in general suffers from difficulties in crafting outcome measures (Volk, Veenstra, & Espelage, 2017).

Finally, the present study did not directly assess possible *positive* behavioral implications of adolescents' vigilance to social status in the domains of prosocial behaviors—such as helping, cooperation, or leadership, and others—that are deemed to be another effective pathway to status attainment (Dahl, Allen, Wilbrecht, & Suleiman, 2018; Dreher et al., 2016; Hawley, 2014). We look forward to future research that extends our model in that direction.

Conclusions

Peer aggression and bullying have drawn much public and scholarly attention. Yet the track record of anti-bullying interventions for adolescents has produced a disappointing average effect for high school students that is not different from zero (Yeager et al., 2015). While fully addressing the problem of bullying in high school may involve changes in school climate or peer norms (Hong & Espelage, 2012), we hope the present investigation sheds a light on social-cognitive mechanisms that may nevertheless prove foundational for better interventions.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgment

Support for this research came from the Raikes Foundation, Hope Lab, a William T. Grant Foundation scholars award and the Eunice Kennedy Shriver National Institute of Child Health and Human Development, R01HD084772 awarded to David Yeager, and P2CHD042849 awarded to the Population Research Center at The University of Texas at Austin. The content is solely the responsibility of the authors and does not necessarily represent the official

views of the National Institutes of Health. The authors are thankful to Dr. Sophia Yang Hooper for her assistance in task programming, and also to Dr. Andre Audette and undergraduate research assistants for their assistance in data collection. The authors are grateful to Drs. Carol Dweck, Rebecca Bigler, and Robert Josephs for their comments on an earlier version of this manuscript.

References

- Anderson C, Hildreth JAD, & Howland L (2015). Is the desire for status a fundamental human motive? A review of the empirical literature. *Psychological Bulletin*, 141(3), 574–601. 10.1037/a0038781 [PubMed: 25774679]
- Card NA, Stucky BD, Sawalani GM, & Little TD (2008). Direct and indirect aggression during childhood and adolescence: A meta-analytic review of gender differences, intercorrelations, and relations to maladjustment. *Child Development*, 79(5), 1185–1229. 10.1111/j.1467-8624.2008.01184.x [PubMed: 18826521]
- Cillessen AHN, & Mayeux L (2004). From censure to reinforcement: Developmental changes in the association between aggression and social status. *Child Development*, 75(1), 147–163. 10.1111/j.1467-8624.2004.00660.x [PubMed: 15015681]
- Cook CR, Williams KR, Guerra NG, Kim TE, & Sadek S (2010). Predictors of bullying and victimization in childhood and adolescence: A meta-analytic investigation. *School Psychology Quarterly*, 25(2), 65–83. 10.1037/a0020149
- Crone EA, & Dahl RE (2012). Understanding adolescence as a period of social-affective engagement and goal flexibility. *Nature Reviews Neuroscience*, 13, 636–650. 10.1038/nrn3313 [PubMed: 22903221]
- Crosnoe R (2011). *Fitting in, standing out: Navigating the social challenges of high school to get an education*. New York, NY: Cambridge University Press.
- Dahl RE, Allen NB, Wilbrecht L, & Suleiman AB (2018). Importance of investing in adolescence from a developmental science perspective. *Nature*, 554(7693), 441–450. 10.1038/nature25770 [PubMed: 29469094]
- Diesendruck G, & haLevi H (2006). The role of language, appearance, and culture in children's social category-based induction. *Child Development*, 77(3), 539–553. 10.1111/j.1467-8624.2006.00889.x [PubMed: 16686787]
- Dreher J-C, Dunne S, Pazderska A, Frodl T, Nolan JJ, & O'Doherty JP (2016). Testosterone causes both prosocial and antisocial status-enhancing behaviors in human males. *Proceedings of the National Academy of Sciences*, 113(41), 11633–11638. 10.1073/pnas.1608085113
- Duckworth AL, & Yeager DS (2015). Measurement matters: Assessing personal qualities other than cognitive ability for educational purposes. *Educational Researcher*, 44(4), 237–251. 10.3102/0013189X15584327 [PubMed: 27134288]
- Dweck CS, Chiu C, & Hong Y (1995). Implicit theories and their role in judgments and reactions: A world from two perspectives. *Psychological Inquiry*, 6(4), 267–285. 10.1207/s15327965pli0604_1
- Ellis BJ, Volk AA, Gonzalez J-M, & Embry DD (2016). The meaningful roles intervention: An evolutionary approach to reducing bullying and increasing prosocial behavior. *Journal of Research on Adolescence*, 26(4), 622–637. 10.1111/jora.12243 [PubMed: 28453200]
- Enders CK, & Bandalos DL (2001). The relative performance of full information maximum likelihood estimation for missing data in structural equation models. *Structural Equation Modeling*, 8(3), 430–457. 10.1207/s15328007sem0803_5
- Erdley CA, Loomis CC, Cain KM, & Dumas-Hines F (1997). Relations among children's social goals, implicit personality theories, and responses to social failure. *Developmental Psychology*, 33(2), 263–272. 10.1037/0012-1649.33.2.263 [PubMed: 9147835]
- Faris R, & Felmlee D (2011). Status struggles: Network centrality and gender segregation in same- and cross-gender aggression. *American Sociological Review*, 76(1), 48–73. 10.1177/0003122410396196
- Forbes EE, & Dahl RE (2010). Pubertal development and behavior: hormonal activation of social and motivational tendencies. *Brain and Cognition*, 72(1), 66–72. 10.1016/j.bandc.2009.10.007 [PubMed: 19942334]

- Garandean CF, Ahn H-J, & Rodkin PC (2011). The social status of aggressive students across contexts: The role of classroom status hierarchy, academic achievement, and grade. *Developmental Psychology*, 47(6), 1699–1710. 10.1037/a0025271 [PubMed: 21875183]
- Gervy BM, Chiu C-Y, Hong Y-Y, & Dweck CS (1999). Differential use of person information in decisions about guilt versus innocence: The role of implicit theories. *Personality and Social Psychology Bulletin*, 25(1), 17–27. 10.1177/0146167299025001002
- Guerra NG, Williams KR, & Sadek S (2011). Understanding bullying and victimization during childhood and adolescence: A mixed methods study. *Child Development*, 82(1), 295–310. 10.1111/j.1467-8624.2010.01556.x [PubMed: 21291443]
- Gunderson EA, Sorhagen NS, Gripshover SJ, Dweck CS, Goldin-Meadow S, & Levine SC (2018). Parent praise to toddlers predicts fourth grade academic achievement via children's incremental mindsets. *Developmental Psychology*, 54(3), 397–409. 10.1037/dev0000444 [PubMed: 29172567]
- Hawley PH (2014). The duality of human nature coercion and prosociality in youths' hierarchy ascension and social success. *Current Directions in Psychological Science*, 23(6), 433–438.
- Hong JS, & Espelage DL (2012). A review of research on bullying and peer victimization in school: An ecological system analysis. *Aggression and Violent Behavior*, 17(4), 311–322. 10.1016/j.avb.2012.03.003
- Inquisit 4.0 [Computer software]. (2008). Seattle, WA: Millisecond Software.
- Juvonen J, Nishina A, & Graham S (2000). Peer harassment, psychological adjustment, and school adjustment in early adolescence. *Journal of Educational Psychology*, 92(2), 349–359.
- Lansu TAM, Cillessen AHN, & Karremans JC (2014). Adolescents' selective visual attention for high-status peers: The role of perceiver status and gender. *Child Development*, 85(2), 421–428. 10.1111/cdev.12139 [PubMed: 23865611]
- Levy SR, & Dweck CS (1999). The impact of children's static versus dynamic conceptions of people on stereotype formation. *Child Development*, 70(5), 1163–1180. 10.1111/1467-8624.00085
- Loflin DC, & Barry CT (2016). 'You can't sit with us': Gender and the differential roles of social intelligence and peer status in adolescent relational aggression. *Personality and Individual Differences*, 91, 22–26. 10.1016/j.paid.2015.11.048
- Parkhurst JT, & Hopmeyer A (1998). Sociometric popularity and peer-perceived popularity: Two distinct dimensions of peer status. *The Journal of Early Adolescence*, 18(2), 125–144. 10.1177/0272431698018002001
- Pellegrini AD, & Long JD (2002). A longitudinal study of bullying, dominance, and victimization during the transition from primary school through secondary school. *British Journal of Developmental Psychology*, 20(2), 259–280.
- Plaks JE, Stroessner SJ, Dweck CS, & Sherman JW (2001). Person theories and attention allocation: Preferences for stereotypic versus counterstereotypic information. *Journal of Personality and Social Psychology*, 80(6), 876–893. 10.1037//0022-3514.80.6.876 [PubMed: 11414372]
- Pouwels JL, Salmivalli C, Saarento S, van den Berg YHM, Lansu TAM, & Cillessen AHN (2017). Predicting adolescents' bullying participation from developmental trajectories of social status and behavior. *Child Development*. 10.1111/cdev.12794
- Pratto F, Sidanius J, Stallworth LM, & Malle BF (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology*, 67(4), 741–763. 10.1037//0022-3514.67.4.741
- Prinstein MJ, Boergers J, & Vernberg EM (2001). Overt and relational aggression in adolescents: Social-psychological adjustment of aggressors and victims. *Journal of Clinical Child Psychology*, 30(4), 479–491. 10.1207/s15374424jccp3004_05 [PubMed: 11708236]
- Prinstein MJ, & Cillessen AH (2003). Forms and functions of adolescent peer aggression associated with high levels of peer status. *Merrill-Palmer Quarterly*, 49(3), 310–342.
- Ratcliff R (1993). Methods for dealing with reaction time outliers. *Psychological Bulletin*, 114(3), 510–532. 10.1037//0033-2909.114.3.510 [PubMed: 8272468]
- Reijntjes A, Kamphuis JH, Prinzie P, & Telch MJ (2010). Peer victimization and internalizing problems in children: A meta-analysis of longitudinal studies. *Child Abuse & Neglect*, 34(4), 244–252. 10.1016/j.chiabu.2009.07.009 [PubMed: 20304490]

- Ryan AM, & Shim SS (2008). An exploration of young adolescents' social achievement goals and social adjustment in middle school. *Journal of Educational Psychology*, 100(3), 672–687. 10.1037/0022-0663.100.3.672
- Silk JS, Lee KH, Kerestes R, Griffith JM, Dahl RE, & Ladouceur CD (2017). “Loser” or “Popular”? Neural response to social status words in adolescents with major depressive disorder. *Developmental Cognitive Neuroscience*, 28, 1–11. 10.1016/j.dcn.2017.09.005 [PubMed: 29028595]
- Silk JS, Stroud LR, Siegle GJ, Dahl RE, Lee KH, & Nelson EE (2012). Peer acceptance and rejection through the eyes of youth: Pupillary, eyetracking and ecological data from the Chatroom Interact task. *Scan*, 7(1), 93–105. 10.1093/scan/nsr044 [PubMed: 21775386]
- Somerville LH (2013). The teenage brain: Sensitivity to social evaluation. *Current Directions in Psychological Science*, 22(2), 121–127. 10.1177/0963721413476512 [PubMed: 24761055]
- Volk AA, Veenstra R, & Espelage DL (2017). So you want to study bullying? Recommendations to enhance the validity, transparency, and compatibility of bullying research. *Aggression and Violent Behavior*, 36, 34–43. 10.1016/j.avb.2017.07.003
- Wiseman R (2009). *Queen bees and wannabes: Helping your daughter survive cliques, gossip, boyfriends, and the new realities of girl world* (2 Original edition). New York, NY: Three River Press.
- Yeager DS, Dahl RE, & Dweck CS (2018). Why interventions to influence adolescent behavior often fail but could succeed. *Perspectives on Psychological Science*, 13(1), 101–122. 10.1177/1745691617722620 [PubMed: 29232535]
- Yeager DS, Fong CJ, Lee HY, & Espelage DL (2015). Declines in efficacy of anti-bullying programs among older adolescents: theory and a three-level meta-analysis. *Journal of Applied Developmental Psychology*, 37, 36–51. 10.1016/j.appdev.2014.11.005
- Yeager DS, Lee HY, & Jamieson JP (2016). How to improve adolescent stress responses: Insights from integrating implicit theories of personality and biopsychosocial models. *Psychological Science*, 27(8), 1078–1091. 10.1177/0956797616649604 [PubMed: 27324267]
- Yeager DS, Trzesniewski KH, & Dweck CS (2013). An implicit theories of personality intervention reduces adolescent aggression in response to victimization and exclusion. *Child Development*, 84(3), 970–988. 10.1111/cdev.12003 [PubMed: 23106262]
- Yeager DS, Trzesniewski KH, Tirri K, Nokelainen P, & Dweck CS (2011). Adolescents' implicit theories predict desire for vengeance after peer conflicts: Correlational and experimental evidence. *Developmental Psychology*, 47(4), 1090–1107. 10.1037/a0023769 [PubMed: 21604865]
- Zitek EM, & Tiedens LZ (2012). The fluency of social hierarchy: The ease with which hierarchical relationships are seen, remembered, learned, and liked. *Journal of Personality and Social Psychology*, 102(1), 98–115. <https://doi.org/10.1037/a0025345> [PubMed: 21910553]

Figure 1. Examples of social categorization task stimuli measuring cognitive vigilance to social status.

Note: The high status-congruent trials (left panel) can be categorized in terms of either a shared status cue (“*She has many friends*” on the left card) or a neutral cue (interest; “*She likes to play video games*” on the right card). Similarly, the low status-congruent trials (right panel) can be categorized in terms of a shared status cue (“*He didn’t have a prom date*” on the right card) or a neutral cue (appearance; “*He has brown hair*” on the left card). As a focal measure, the average speeds (*ms*) of sorting in terms of social status cues indicate a higher vigilance to social status information.

Social Categorization Cues Used in a Card Sorting Task

Figure 2. Adolescents showed a tendency to categorize individuals in terms of congruent social status information.

Notes: The bar graph depicts the average proportion of 9th-grade adolescents categorizing individuals in terms of social status (popularity/ unpopularity), personal interest, appearance, and future goals. Error bars indicate ± 1 standard errors.

Figure 3. Entity theory of personality predicts faster sorting speeds (*ms*) in terms of social status cues (A); higher social status demonstration goals (B); and greater social distance from unpopular peers in the lunchroom (C).

Notes: Loess smooth curves were fit with blue lines. Gray areas represent ± 1 standard errors of the estimated regression lines. Sorting speeds (*ms*, square-root transformed) were reversed by multiplying by -1 , so higher values (close to zero) correspond to faster sorting speeds in terms of social status cues.

Figure 4. Structural equation model demonstrating the indirect effects of sorting speeds and social status demonstration goals mediating the effect of an entity theory of personality on adolescents' relational aggression.

Note: $N=882$, Model fit statistics $\chi^2(375) = 736.562$, $p=.000$, CFI= .937, RMSEA= .033, 90% CI [.030, .037], SRMR= .056. Sum of indirect effect $b= .120$, standardized $\beta=.454$, $p=.000$, Indirect effect via sorting speeds in social status congruent trials $b= .012$, $\beta=.047$, $p= .037$, indirect effect via social status demonstration goals $b= .038$, $\beta=.145$, $p=.003$.

Table 1.

Sample Characteristics.

	Total (N=882)	Sample 1 (N=371)	Sample 2 (N=308)	Sample 3 (N=203)
Geographical location	TX/CA	Conal, TX	Glendale, CA	Austin, TX
Year of data collection	2013-2016	2013	2015	2016
School characteristics		A suburban/ rural public high school	A summer high school prep program in urban areas	An urban public magnet school
Mean age (SD)	14.2 (0.67)	14.6 (0.59)	13.7 (0.49)	14.3 (0.52)
Biological sex				
% Female	52.5%	48.8%	57.9%	51.2%
Race/ethnicity				
% White/Caucasian	53.1%	53.2%	48.6%	59.1%
% Hispanic/Latinx	24.7%	38.1%	14.3%	15.3%
% Black/African-American	1.8%	3.5%	0.7%	0.5%
% Asian/Asian-American	11.9%	1.1%	20.4%	19.2%
% Other Race Ethnicity	8.5%	4.1%	16.0%	5.9%
Family socioeconomic status				
% Free Reduced Meal Eligibility	-	17.6%	-	-
% Both Parents with a 4-year college degree	47.0%	34.2%	-	69.5%
% Either Parent with a 4-year college degree	28.8%	37.0%	-	14.3%

Table 2.

Bivariate correlations and descriptive statistics.

	1	2	3	4	5	6	7	N	M	SD
1. Entity theory of personality	—							882	2.64	(0.90)
2. Social status demonstration goals	.29***	—						878	2.75	(1.02)
3. % Sorting in terms of status cues	.01	.03	—					614	58%	(21%)
4. Sorting speeds (<i>ms</i>) in status congruent trials	.17***	.01	.09*	—				613	96.7	(22.2)
5. Self-reported relational aggression	.18***	.11***	.02	.11**	—			868	1.29	(0.58)
6. Hypothetical scenario relational aggression	.21***	.20***	.02	.12**	.26**	—		875	1.65	(1.02)
7. Lunchroom distance from unpopular peers	.22***	.17***	.09	.26**	.18**	.21***	—	290	1.79	(1.08)

Note: Degree of the freedom varies across measures.

 $p < .001$

**
 $p < .01$

*
 $p < .05$