

Countering Youth's Negative Stereotypes of Teens Fosters Constructive Behavior

Yang Qu

Northwestern University

Eva M. Pomerantz

University of Illinois, Urbana–Champaign

Guohong Wu

Fudan University

Adolescence can be a time of unconstructive behavior for many youth. This research examined if an intervention countering youth's stereotypes of teens as irresponsible fosters their constructive behavior. In two experimental intervention studies ($Ns = 124$ and 319) with seventh graders, stereotypes of teens as irresponsible were described as inaccurate portrayals; youth then provided their own observations of teens acting responsibly. Youth in this counterstereotyping intervention (vs. the control) held higher intentions for academic engagement and performed better on an academic task (i.e., a word-search puzzle). Over the 3 days following the intervention, their academic engagement was higher. Youth's risk taking was also reduced. Redirecting youth to see teens as responsible has the potential to provide a foundation for flourishing.

More than a century ago, Hall (1904) characterized adolescence as a time of "storm and stress" such that youth are particularly prone to not only mood disruption but also unconstructive behavior (e.g., risk taking). The empirical work that followed indicated that indeed adolescent storm and stress exists, but it is mild for many youth (for reviews, see Arnett, 1999; Steinberg, 2001). In fact, the teen years can be a time of particularly constructive behavior for some youth (Steinberg, 2014). Although normative biological changes have been implicated in storm and stress during adolescence (for reviews, see Casey, Getz, & Galván, 2008; Luciana & Collins, 2012), biological changes can also lead to flourishing in supportive environments (Dahl, Allen, Wilbrecht, & Suleiman, 2018; Patton et al., 2018; Steinberg, 2014). However, negative ideas about adolescence are widely held by laypeople (e.g., Buchanan & Holmbeck, 1998; Hines & Paulson, 2006). Unfortunately, the more youth see teens as irresponsible, the more they are at risk for storm and stress as they navigate adolescence (e.g., Buchanan & Hughes, 2009; Qu, Pomerantz, Wang, Cheung, & Cimpian, 2016). The current research examined if countering this stereotype fosters constructive behavior among youth during early

adolescence, thereby setting the foundation for flourishing. Given that adolescent storm and stress is often manifest in decreases in academic engagement (e.g., Eccles et al., 1993) and increases in risk taking (e.g., Arnett, 1999), we focused on these two behaviors.

Storm and Stress Teen Stereotypes

Both youth and adults hold beliefs about the characteristics of individuals based on their membership in social categories—for example, being female (e.g., Bigler & Liben, 1992; Ceci, Williams, & Barnett, 2009). Although such stereotypes are often inaccurate, they guide affect, cognition, and behavior (e.g., Ambady, Shih, Kim, & Pittinsky, 2001). Buchanan and Holmbeck (1998) make the case that a salient social category is the developmental phase to which people belong—for example, toddlerhood or adolescence (see also Holmbeck & Hill, 1988). Indeed, youth and adults hold distinct conceptions of adolescents compared to younger children. Although such conceptions are likely based on accurate base rate information to some extent, they are also likely based on extreme, but memorable, instances of teen behavior (Gilliam & Bales, 2001;

Correspondence concerning this article should be addressed to Yang Qu, School of Education and Social Policy and Institute for Policy Research, Northwestern University, Evanston, IL 60208. Electronic mail may be sent to yangqu@northwestern.edu.

Nichols & Good, 2004). Societal messages (e.g., conveyed via exaggerated media portrayals of teens or rules at middle school based on the assumption that teens are irresponsible) might play a role as well. It has been argued that characterizations of teens as immature or prone to storm and stress are often used intentionally to regulate youth's behavior or achieve policy aims (e.g., Dodge, 2008; Enright, Levy, Harris, & Lapsley, 1987).

In contrast to elementary school children, teens are seen as more irresponsible in that they, for example, are assumed to be more rebellious (e.g., testing limits) as well as less concerned with fulfilling family obligations and engaged in school (e.g., Buchanan & Holmbeck, 1998; Hines & Paulson, 2006; Qu et al., 2016). Buchanan and Holmbeck (1998) asked parents, teachers, and college students in the United States to rate both adolescents and elementary school children on a variety of characteristics that their pilot research indicated were seen as descriptive of adolescents. Overall, adolescents were regarded more negatively than were their elementary school counterparts. For example, teens were seen as more rebellious (e.g., testing limits) and peer oriented (e.g., easily influenced by friends). Qu et al.'s (2016) research indicates that young adolescents also hold storm and stress views of teens. When American youth rated the extent to which attributes characterized teens versus younger children, they indicated that they saw teens as more likely than younger children to individuate from parents, disregard family obligations, disengage from school, and be peer oriented.

Implications for Youth's Behavior

Youth's adoption of the idea that teens are irresponsible might act as a self-fulfilling prophecy (Buchanan & Hughes, 2009). There is a large body of evidence indicating that perceptions of what is common or typical (i.e., descriptive norms) are influential (e.g., Cialdini, Reno, & Kallgren, 1990; Helms et al., 2014; Paluck & Shepherd, 2012; Zou et al., 2009). One way that the norms implied by stereotypes about teens might influence youth's behavior is by shaping the expectations and standards youth hold for themselves, which ultimately guide their behavior (Buchanan & Hughes, 2009; Meece, Wigfield, & Eccles, 1990). If youth see it as normative to be irresponsible (e.g., by disregarding their family obligations and disengaging from school) during adolescence, they might come to hold expectations and standards for themselves that set the stage for unconstructive behavior as

they navigate the adolescent years (e.g., Buchanan & Hughes, 2009).

It might also be the case that when youth see unconstructive behavior as normative, they underestimate the costs and overestimate the benefits of such behavior. Youth might not see unconstructive behavior as leading to undesirable consequences (e.g., disengaging from school is assumed not to undermine future opportunities) as it is simply what teens do. Youth might even view unconstructive behavior as having desirable consequences given that acceptance by peers is often seen as contingent in part on adherence to what is normative among peers (O'Brien & Bierman, 1988; Steinberg & Morris, 2001), with unconstructive behavior often being more common among youth perceived as popular or cool (vs. youth lower in such social status) during adolescence (e.g., Galván, Spatzier, & Juvonen, 2011; Rose, Swenson, & Waller, 2004). Thus, youth's stereotypes of teens as irresponsible might detract from the value they place on refraining from unconstructive behavior, even leading them to see such an endeavor as having costs as it may diminish peer acceptance. Expectancy $\times$ Value perspectives (e.g., Barron & Hulleman, 2015; Eccles & Wigfield, 1995; Eccles et al., 1983) suggest that these anticipated consequences might heighten unconstructive behavior among youth during adolescence.

In line with the idea that conceptions of adolescence as a time of irresponsibility foster unconstructive behavior among youth during this phase of development, youth's expectations for their own "storm and stress" behavior (e.g., risk taking and alienation from the family) predict heightened externalizing behavior among youth as well as dampened closeness with their parents 1 year later during early adolescence, over and above youth's prior behavior and closeness (Buchanan & Hughes, 2009). Moreover, the more youth see teens (vs. younger children) as ignoring family obligations and disengaged from school, the less they are engaged in school and the more they take part in risky activities (e.g., cheating or fighting) 6 months later over and above their earlier engagement in school and risk taking, as well as other potential confounds such as pubertal growth (Qu, Pomerantz, McCormick, & Telzer, 2018; Qu, Pomerantz, Wang, & Ng, 2015; Qu et al., 2016).

Countering Storm and Stress Teen Stereotypes

Given the role of youth's stereotypes of teens as irresponsible in their behavior as they enter

adolescence, such stereotypes are potentially a key point of intervention in setting the foundation for youth's flourishing during this phase. Hence, a key question is whether it is possible to change youth's beliefs when they already have deeply rooted ideas about what it means to be a teen, likely based on multiple observations and experiences. Although no extant research focuses on changing youth's conceptions of adolescence, it is clear that youth's beliefs about a range of important issues can be changed (e.g., Choukas-Bradley, Giletta, Cohen, & Prinstein, 2015; Miu & Yeager, 2015; Paluck & Shepherd, 2012), with experimental interventions to change their beliefs also leading to changes in their behavior (e.g., Blackwell, Trzesniewski, & Dweck, 2007; Yeager, Trzesniewski, & Dweck, 2013). Information about what is normative or typical appears to be quite powerful in changing beliefs and behavior (e.g., Asch, 1955; Choukas-Bradley et al., 2015; Cialdini et al., 1990; Zou et al., 2009).

Based on these findings, we developed a counterstereotyping intervention that guides youth to reframe what is considered normative during adolescence such that responsibility is common among teens. First, we discredited the stereotype of teens as irresponsible: Youth learned that although such a stereotype is often held by adults and is prevalent in the media, it is inaccurate as teens are actually often quite responsible. Youth may be particularly receptive to this idea during adolescence given their desire for respect (Okonofua, Painesku, & Walton, 2016; Yeager, Dahl, & Dweck, 2018), which responsibility can confer. Second, we asked youth to generate examples of responsible teen behavior they had observed. Although counterstereotype behavior is not always the first to come to mind (i.e., it is not often highly accessible), it can be brought to mind (e.g., Blair, Ma, & Lenton, 2001). Having youth generate the information allows them to thoroughly process the idea of teen responsibility with personally real and relevant instances, which is key to the success of brief interventions targeting beliefs (e.g., Walton, 2014; Yeager & Walton, 2011). Such generation is also likely to produce the mental imagery that Blair et al. (2001) successfully used in their counterstereotyping interventions. Moreover, self-determination theory (Ryan & Deci, 2000) suggests that when youth serve as generators, they might experience themselves as autonomous, which is likely to heighten their internalization of the counterstereotype information.

The Current Research

In two experimental intervention studies we compared the counterstereotyping intervention to a control condition in which youth were simply asked to provide examples of common teen behavior. We evaluated if the counterstereotyping intervention (vs. control) leads youth to (a) view teens as responsible and (b) heightens their academic engagement (e.g., paying attention in class and monitoring their understanding of learning material) and dampens their risk taking (e.g., cheating and association with risky peers), thereby setting the foundation for flourishing. We also examined if the intervention (vs. control) confers benefits on these two types of behavior by leading youth to expect constructive behavior (i.e., academic engagement) to yield more desirable consequences and unconstructive behavior (i.e., risk taking) to yield less desirable consequences. We focused on youth's academic engagement and risk taking because they are often part of the storm and stress characteristic of adolescence, with academic engagement decreasing (e.g., Eccles et al., 1993; Wigfield, Eccles, Schiefele, Roeser, & Davis-Kean, 2006) and risk taking increasing (e.g., Centers for Disease Control and Prevention, 2006; Steinberg, 2008) over this phase of development.

We studied youth in their first year of middle school (i.e., seventh grade), because this is likely a sensitive period in terms of youth's conceptions of adolescence. With the entry into this phase of development, youth might be particularly sensitive to information about teens as they are taking on a new role of which they are uncertain and might be in active search of guiding information (Ruble, 1994). Youth were from Shanghai, which is one of the most urbanized regions in China. Although Shanghai is rooted in Chinese culture, it is also widely exposed to Western culture due to its history as the most important economic and trade center in Mainland China since the early 20th century. Given their exposure to both Chinese and Western cultures, Shanghai youth's beliefs are likely to be particularly flexible (Hong, Morris, Chiu, & Benet-Martínez, 2000). Indeed, Chinese youth in Hong Kong, which is similar to Shanghai in terms of Chinese and Western cultural influences, appear to view teens as just as irresponsible as younger children—thus, youth in Hong Kong see teens as less irresponsible than do American youth, but more irresponsible than do Chinese youth in less urbanized areas (Qu et al., 2015). Moreover, although youth in China (vs. the United States) appear to be

at less risk for storm and stress during early adolescence (e.g., Qu et al., 2016; Wang & Pomerantz, 2009), youth in Hong Kong engage in more risk taking, with more of an increase over early adolescence, than do their counterparts in less urbanized areas of China (e.g., Cheung, Ngai, & Ngai, 2007; Qu et al., 2015; Zhang, 2008).

Study 1

Study 1 was designed to evaluate if the counterstereotyping intervention (vs. control) leads youth to view teens as more responsible. Key in this study was to identify if compared to the control, the intervention increases youth's intentions for academic engagement and decreases their intentions for risk taking in early adolescence, with attention to the mediating role of youth's expectations for the consequences (i.e., benefits vs. costs) of these two types of behavior.

Method

Participants

Participants were 124 (65 boys) youths in seventh grade ($M_{\text{age}} = 13.31$ years, $SD = 0.36$) attending one of two middle schools in urban areas in the Chinese city of Shanghai, with families primarily from working- and middle-class backgrounds. One school was a lower achieving school and the other was a higher achieving school. In this area, almost all (99%) residents are of Han Chinese ethnicity (World Population Review, 2015), which is the major ethnicity in China. Although prior research yields small effects of conceptions of adolescence on youth's adjustment (e.g., Qu et al., 2016), these effects were studied over at least 6 months and took into account youth's prior adjustment. Given that we were examining the *immediate* effect of the counterstereotyping intervention with homogeneous exposure to it among youth, we anticipated a larger effect. With high power (0.8) and a Type I error of 0.05 for a two-tailed test, our sample size allowed for detection of a medium effect size (Cohen's $d = 0.5$).

Procedure

Neither the participants nor research assistants knew the purpose of this research. Assignment to the intervention versus control within each school was random. Of the two classes participating in each of the two schools, one was assigned to the counterstereotyping intervention and the other to

the control condition. Thus, there were two classes (one from each of the two participating schools) in each condition. A trained research assistant administered the intervention or control to the class as a whole. Youth then completed a set of measures assessing their views of teens, behavioral intentions, and expected consequences.

Intervention and Control Conditions

In the *counterstereotyping intervention*, youth read a passage in which they were told that teens are often portrayed by the media (e.g., books, TV shows, and the movies) as rebellious and irresponsible. The passage also indicated that adults (e.g., teachers and parents) think of teens in line with such portrayals. Examples of storm and stress characterizations were provided (e.g., teens in movies are often shown as being disrespectful of their parents and adults see teens as not really putting effort into school). The storm and stress stereotype was then described as incorrect in that many teens are not rebellious and irresponsible, with the teen years sometimes being a time of actually becoming responsible. Youth were instructed to give examples of what teens do at home when they interact with their family, at school, and somewhere else (e.g., a store, restaurant, or someone else's house) that show they are responsible—a "saying is believing" exercise (Aronson, Fried, & Good, 2002; Walton, 2014). This exercise also likely encouraged mental imagery of the counterstereotype, which has been successful in prior attempts to change stereotypes (Blair et al., 2001). Youth were given a single sheet of paper with one box for each of the three contexts (i.e., family, school, and somewhere else) on it.

In the *control* condition, youth were simply instructed to tell us about the typical teen by listing common teen behaviors. The example of watching TV was provided, with detailed explanation of such behavior (i.e., "They have certain shows that they like. They might watch the shows they like for a break from doing other things. Or maybe they watch with their friends or family."). Youth then listed three behaviors that are pretty common for teens. Thus, the control also provided an opportunity for youth to generate examples of behavior that they have observed among adolescents, with mental imagery likely similar to that of the intervention but not necessarily in line with counterstereotypes. Youth were given one box for describing each of the three behaviors on a single sheet of paper.

To ensure that youth in the counterstereotyping intervention indeed provided examples of responsible

behavior, research assistants coded youth's descriptions in terms of the extent to which each behavior described was responsible, with responses being coded as irresponsible (e.g., "Use dirty language."), neutral (e.g., "They play basketball together with friends."), or responsible (e.g., "Do homework carefully. Pay attention in class. Get along with classmates."); Cohen's $\kappa = .97$). A multivariate analysis of variance including youth's class as a random effect—thereby taking into account that youth within each condition were nested within classes—was conducted. Youth in the counterstereotyping intervention and control condition differed in their descriptions of teen behavior in regard to responsibility, $F(3, 119) = 64.06, p < .001$: Youth in the intervention listed more responsible behaviors ($M = 2.63, SD = 0.89$ vs. $M = 0.68, SD = 0.86$), as well as fewer neutral ($M = 0.11, SD = 0.32$ vs. $M = 1.39, SD = 1.09$) and irresponsible ($M = 0, SD = 0$ vs. $M = 0.63, SD = 0.91$) behaviors than did youth in the control condition, $F_s(1, 122) > 29.65, p_s < .001$, Cohen's $d_s = 0.99$ – 2.24 .

To ensure the counterstereotyping intervention was not also leading youth to think about teens' behavior differently along other dimensions, the research assistants coded how concrete the descriptions were given that it was possible that asking youth to list examples of responsible versus typical behavior leads to more concrete descriptions, which may make youth think about their behavior and its implications more. Each behavior was coded on a 3-point scale: 1 = *not concrete at all* and generally included brief descriptions that simply described a type of behavior (e.g., "help teachers and classmates" and "rebellious behavior"); 2 = *a little concrete* and included specific and detailed behavioral descriptions (e.g., "listen carefully in class and complete tasks teachers assign, like cleaning and homework" and "do not want to talk with parents, think parents are too annoying"); 3 = *very concrete* and included descriptions of specific behavioral scenarios (e.g., "turn off the lights and the fan, if possible, help to turn off the projector" and "when interacting with family members, talk before parents finish and . . . do not accept parents' opinions and suggestions"; intra-class correlation coefficient [ICC] = .95). It was also possible that because of the specificity of responsible versus typical behavior, youth would have more to say about one versus the other. Thus, the number of words youth used in their descriptions was calculated by a word counting program. There were no differences between the intervention and control in terms of concreteness ($M = 2.09, SD = 0.65$ vs. $M = 2.04, SD = 0.63$) or number of

words ($M = 40.68, SD = 19.90$ vs. $M = 47.19, SD = 30.41$), $F_s(1, 122) < 2.00, p_s > .16, d_s = 0.08$ and 0.26 .

Measures

The measures were initially created in English. Standard translation and back-translation procedures (Brislin, 1980) were followed to generate the Chinese versions, with repeated discussion among American and Chinese members of the research team to modify the wording of the items to ensure equivalence in meaning (Erkut, 2010). Linguistic factors were taken into account so that the measures were easily understandable to youth in China.

Views of teens. After the administration of the intervention or control, youth completed the measure developed by Qu et al. (2015, 2016) to assess views of teens in regards to responsibility. The items from this measure were used to assess two key components of responsibility: (a) *family obligation* (12 items; e.g., "work hard to meet parents' expectations" $\alpha = .83$) and (b) *academic engagement* (6 items; e.g., "put a lot of effort into school," $\alpha = .70$). A new scale to assess the teen years as a time of *risk taking* (e.g., 8 items; "do things that would get themselves or others hurt [e.g., race on a bike]" $\alpha = .92$) was also administered, given that refraining from risk taking is likely part of acting responsibly. For each item, youth rated to what extent the behavior or attitude is truer before versus during the teen years (1 = *more true before teen years*, 4 = *equally true before and during teen years*, 7 = *more true during teen years*). The mean of the items for each dimension was taken, with lower numbers indicating that the dimension is more common *before* the teen years and higher numbers indicating it is more common *during* the teen years.

Behavioral intentions. Nine items modified from measures assessing youth's behavioral and cognitive academic engagement (Dowson & McInerney, 2004; Skinner, Kindermann, & Furrer, 2009) were used to assess youth's *academic engagement intentions*. For each of the nine items (e.g., "When I'm in class, I will listen very carefully." and "I will try to plan out my schoolwork as best I can." $\alpha = .95$), youth rated how likely (1 = *not likely at all*, 7 = *extremely likely*) they were to engage in the behavior in the next several days. The nine items were averaged, with higher numbers indicating greater academic engagement intentions.

Youth's *risk-taking intentions* were assessed with 11 items adopted from prior measures of risk

taking (Barber, Stolz, & Olsen, 2005; Stattin & Kerr, 2000). Youth indicated for each item how likely (1 = *not likely at all*, 7 = *extremely likely*) they were to engage in the behavior described (e.g., "I will damage/destroy public property." and "I will steal things from places other than home." $\alpha = .92$) over the next several days. The mean of the items was taken, with higher numbers reflecting greater risk-taking intentions.

Expected consequences. Youth's evaluation of *academic engagement consequences* was assessed by modifying the nine items used in the measure of academic engagement intentions. For each item ($\alpha = .98$), youth indicated the likelihood of a positive versus negative outcome (1 = *extremely likely positive outcome*, 4 = *neither positive nor negative outcome*, 7 = *extremely likely negative outcome*). This approach has been used in previous measures to assess cognitive appraisal of specific behaviors (e.g., Cognitive Appraisal of Risky Events Questionnaire, Fromme, Katz, & Rivet, 1997). Youth's evaluation of *risk-taking consequences* was assessed with a modification of the risk-taking intentions measure such that youth indicated the likelihood of a positive versus negative outcome for each of the 11 items ($\alpha = .97$). For each of the expected consequences scales, the mean of the items was taken and reverse scored, so that higher numbers represent greater expected positive (vs. negative) consequences—that is, benefits (vs. costs).

Results

Does the Intervention Influence Youth's Views of Teens?

The first set of analyses evaluated if the counterstereotyping intervention leads youth to view teens as more responsible. We conducted a mixed-model analysis of variance (ANOVA), including a class-level random effect to account for the nested nature of the data (i.e., students are nested within classes in the intervention and control conditions), with condition (intervention vs. control) as the between-participants factor and teen view domain (family obligation vs. academic engagement vs. risk taking) as the within-participants factor. The mixed-model ANOVA indicated that the intervention was effective in that youth in the counterstereotyping intervention saw the teen years in a more positive light than did their counterparts in the control condition (see Table 1), $F(1, 121) = 10.19$, $p < .01$, d s for each domain = 0.37 to 0.46; this was not moderated by domain, $F(2, 242) = 0.79$, $p > .46$.

To examine if the counterstereotyping intervention leads youth to see teens as more responsible than young children, we conducted one-sample t -tests within each condition by comparing youth's views of teens to the midpoint of the scale (i.e., 4 in the 7-point scale, with 4 indicating similarity during and before the teen years). Youth in the counterstereotyping intervention indicated that during the teen years youth were *more* likely to fulfill obligations to the family, $t(61) = 4.27$, $p < .001$, be engaged in school, $t(61) = 2.33$, $p < .05$, and refrain from risk taking, $t(61) = 3.08$, $p < .01$, than during the earlier years. In contrast, youth in the control condition saw no differences during and before the teen years, $t(61) < 1.25$, $ps > .21$.

Does the Intervention Influence Youth's Behavioral Intentions?

As shown in Table 2, an ANOVA with a class-level random effect indicated that youth in the counterstereotyping intervention (vs. control) held greater intentions to be engaged in school in the next several days, $F(1, 122) = 7.27$, $p < .01$, $d = 0.49$. Intended risk taking, however, was not lower among youth in the intervention (vs. control), $F(1, 122) = 0.17$, $p > .68$, $d = 0.07$, likely due to the infrequency of such intentions. A repeated-measures ANOVA with a class-level random effect on youth's intentions for the two types of behavior (i.e., academic engagement and risk taking) yielded a Condition $\times$ Type of Behavior interaction, $F(1, 121) = 7.66$, $p < .01$, indicating that the effect of the intervention was stronger for youth's intentions for academic engagement than risk taking.

Table 1
Effect of the Counterstereotyping Intervention on Views of Teens (Study 1)

Views of teens	Counterstereotyping intervention <i>M (SD)</i>	Control <i>M (SD)</i>	<i>F</i> value for intervention vs. control
Family obligation	4.65 (1.20)	4.17 (1.10)	5.30*
Academic engagement	4.45 (1.52)	3.94 (1.21)	4.24*
Risk taking	3.30 (1.79)	4.10 (1.73)	6.34*

Note. Youth reported on their views of teens measure on a 7-point scale (1 = *more true before teen years*, 4 = *equally true before and during teen years*, 7 = *more true during teen years*).

* $p < .05$.

Do Youth's Expected Consequences Play a Mediating Role?

ANOVAs with a class-level random effect indicated that youth in the counterstereotyping intervention (vs. control) expected their academic engagement to have more positive (vs. negative) outcomes and their risk taking to have less positive (vs. negative) outcomes (see Table 2), $F_s(1, 116) > 6.01$, $p_s < .05$, $d_s = 0.51$ and 0.46 . In this case, the effect of the intervention was not moderated by type of behavior, $F(1, 115) = 0.44$, $p = .51$, indicating that the effect was similar in size for academic engagement and risk taking.

To explore if youth's expected outcomes contribute to the effect of the counterstereotyping intervention on youth's behavioral intentions, mediation analyses were conducted using multiple regression. As shown in Table 3, the more youth expected positive (vs. negative) outcomes for academic engagement, the higher their academic engagement intentions when controlling for whether they were in the intervention (vs. control; $\beta = .38$, $p < .001$). Using bias-corrected bootstrapping resampling techniques to test the indirect effect (Preacher & Hayes, 2008) with 5,000 bootstrap resamples, the indirect path from the intervention (vs. control) via youth's expected consequences to their academic engagement intentions was significant (see Table 3), 95% CI [.03, .18]. Inclusion of youth's expected outcomes produced a 39% reduction in the total effect ($\beta = .23$, $p = .01$) of the intervention on youth's intended academic engagement, and the direct effect was not significant ($\beta = .14$, $p = .11$).

The more youth expected positive (vs. negative) outcomes for risk taking, the greater their risk-taking intentions, controlling for whether they were in the intervention (vs. control), $\beta = .56$, $p < .001$. Although there was no significant intervention effect ($\beta = -.04$, *ns*) as reported above, a total effect is not necessary to test mediation (e.g., Hayes, 2009; Rucker, Preacher, Tormala, & Petty, 2011; Shrout & Bolger, 2002; Zhao, Lynch, & Chen, 2010). In the current case, the intervention might ultimately have an effect on youth's risk-taking intentions via their expected consequences for such behavior, but the effect might not be detectible as youth might need more time to integrate the cost-benefit weighting fostered by the intervention into their intentions. As shown in Table 3, the indirect path from the counterstereotyping intervention (vs. control) via youth's expected consequences to their intended risk taking was significant, 95% CI [−.03, −.25], with the direct effect remaining nonsignificant ($\beta = .08$, $p = .29$).

Study 2

Study 1 demonstrated that the counterstereotyping intervention leads youth to view teens as responsible and increases their intentions for academic engagement but does not necessarily decrease their intentions for risk taking. Moreover, it suggested that one reason the intervention is effective is because it changes the outcomes (i.e., rewards and costs) youth expect from their behavior. Study 2 extended Study 1 by addressing several limitations and examining if youth transform their intentions

Table 2
Effect of the Counterstereotyping Intervention on Behavioral Intentions and Expected Consequences (Study 1 and 2)

	Study 1			Study 2		
	Counterstereotyping intervention M (SD)	Control M (SD)	F value for intervention vs. control	Counterstereotyping intervention M (SD)	Control M (SD)	F value for intervention vs. control
Academic engagement						
Behavioral intentions	5.70 (1.29)	5.06 (1.21)	7.27**	5.57 (1.08)	5.19 (1.20)	8.91**
Expected positive consequences	6.41 (0.99)	5.83 (1.32)	7.45**	6.43 (0.75)	6.10 (0.94)	12.40***
Risk taking						
Behavioral intentions	1.41 (0.66)	1.51 (0.78)	0.17	2.31 (0.83)	2.55 (1.01)	5.58*
Expected positive consequences	1.36 (0.66)	1.79 (1.17)	6.01*	2.04 (0.87)	2.31 (1.26)	4.83*

Note. Youth reported on their behavioral intentions (1 = not likely at all, 7 = extremely likely) and expected positive consequences (1 = extremely likely negative outcome, 7 = extremely likely positive outcome) on a 7-point scale.

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

Table 3

The Mediating Role of Youth's Expected Consequences in the Effect of Counterstereotyping Intervention (Study 1 and 2)

	Academic engagement			Risk taking		
	β Step 1	β Step 2	95% CI Indirect effect	β Step 1	β Step 2	95% CI Indirect effect
Study 1						
Predicting intentions						
Condition	.23**	.14	[.03, .18]	-.04	.08	[-.03, -.25]
Expected positive consequences		.38***			.56***	
Study 2						
Predicting intentions						
Condition	.17**	.10	[.03, .12]	-.13*	-.09	[-.01, -.08]
Expected positive consequences		.36***			.34***	
Predicting daily behavior						
Condition	.20**	.13*	[.03, .12]	-.12*	-.08	[-.01, -.08]
Expected positive consequences		.33***			.31***	

Note. For condition, the intervention was coded as 1 and the control was coded as -1.

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

into behavior. To these ends, Study 2 was characterized by four major innovations: (a) the control condition in Study 2 (vs. Study 1) more closely paralleled the counterstereotyping intervention in regards to the processing component; (b) Study 2 minimized experimental demand to ensure youth were not simply attempting to comply with the information provided in the intervention; (c) youth's daily behavior was assessed each day for the 3 days following the intervention to evaluate if the effects of the counterstereotyping intervention extend beyond the initial session; (d) Study 2 examined youth's performance on an academic task to identify if there might be implications for achievement.

Method

Participants

Participants were 319 (160 boys) youths in the seventh grade ($M_{\text{age}} = 13.26$ years, $SD = 0.36$) in Shanghai in areas similar to that in Study 1. Participants attended one of three middle schools ranging from low to high in achievement level. The sample size was based on Simonsohn's (2015) recommendation that a replication have two-and-a-half times as many observations as the original study.

Procedure

As in Study 1, neither the participants nor research assistants knew the purpose of the

research. The assignment to the intervention versus control within each school was also random. Six (two from each of the three participating schools) of the 12 participating classes were assigned to the counterstereotyping intervention; the other six (two from each participating school) were assigned to the control condition. The procedure was identical to Study 1 with a few exceptions.

First, the control condition was modified to make it more parallel to the counterstereotyping intervention. Youth provided descriptions of typical teen behaviors in the same three contexts (e.g., at home when they interact with their family and in school) used in the intervention in Study 1. As in Study 1, youth's descriptions in the intervention and control conditions were coded in terms of responsible behavior (Cohen's $\kappa = .91$), concreteness (ICC = .90), and length. Youth in the intervention (vs. control) condition listed more responsible ($M = 2.90$, $SD = 0.34$ vs. $M = 0.96$, $SD = 1.07$), as well as fewer neutral ($M = 0.04$, $SD = 0.21$ vs. $M = 1.21$, $SD = 0.98$) and irresponsible ($M = 0.04$, $SD = 0.21$ vs. $M = 0.81$, $SD = 0.99$) behaviors, $F(1, 317) > 104.95$, $ps < .001$, $ds = 1.15$ – 2.45 . However, there were no differences in terms of the concreteness (ICC = .90; $M = 2.20$, $SD = 0.54$ vs. $M = 2.13$, $SD = 0.50$) or number of words ($M = 94.27$, $SD = 52.54$ vs. $M = 91.81$, $SD = 59.18$), $F(1, 317) < 1.30$, $ps > .25$, $ds = 0.04$ and 0.13 .

Second, to minimize experimental demand, the intervention (or control) and assessment were described as two *separate* studies. A research assistant introduced him/herself to the class and

indicated that there were two studies youth would be helping out with—one for him/her and one for someone else. The research assistant then distributed the materials for the intervention (or control), which were read to youth with time given for them to complete the behavioral descriptions. To further minimize experimental demand, there was a 5-min break during which youth had the option to work on an English word-search puzzle. This puzzle allowed us to examine if the intervention enhances youth's performance (see below) while also separating the intervention (or control) administration from the behavioral intentions and expected consequence measures. When youth were done with the puzzle, they put the behavioral descriptions and puzzle in an envelope and handed it to the research assistant who thanked them for their time. A second research assistant told youth he/she was conducting a study on youth's planning. Youth then completed the behavioral intentions and expected consequence measures (see below) as in Study 1, which they returned to the second research assistant in a second envelope.

Third, to move beyond simply assessing youth's behavioral intentions, youth completed a daily report (see below) administered by the second research assistant during the same class period on the 3 days following the intervention (or control) administration. The second research assistant indicated that this was part of the planning study. Eight percent (15 in the intervention and 11 in the control) of the 319 youth who completed the in-class portion of the study did not complete the daily reports for all the 3 days due largely to absence from school on the day(s) of the daily reports. These youth were excluded from the analyses of daily behavior reported here, but analyses including them using multiple imputation to deal with their missing data yielded results that were similar to those reported here in terms of both the significance and size of effects.

Measures

As in Study 1, the measures were administered in Chinese (for translation procedures, see Study 1). Given that Study 1 demonstrated that the counterstereotyping intervention can lead youth to see adolescence in a more positive light, youth's views of teens were not assessed in Study 2. This ensured that the counterstereotyping intervention was distinct from the assessment portion of the study, thereby further minimizing experimental demand.

Behavioral intentions and expected consequences. Youth's behavioral intentions and expected consequences for academic engagement and risk taking were assessed on the day of the intervention as in Study 1 with minor modifications as described for the daily behavior measures below. These modifications yielded seven-item scales for academic engagement intentions ($\alpha = .85$) and expected consequences ($\alpha = .74$), and eight-item scales for risk taking intentions ($\alpha = .85$) and expected consequences ($\alpha = .86$). In an effort to minimize experimental demand, filler items were included (e.g., "I will watch TV." and "I will read for enjoyment.") to reduce the focus on behaviors related to responsibility.

Daily behavior. At the end of school, each day for 3 days after the day of the intervention or control, youth's *academic engagement* was assessed using seven items modified from measures assessing academic engagement (Dowson & McInerney, 2004; Skinner et al., 2009). These items were selected because they occur frequently on a daily basis without the constraints of class activities (e.g., participating in class discussions was excluded because teachers might not provide such opportunities on any particular day). In addition, based on the examination of each item of the measure of academic engagement intentions used in Study 1, youth rated the selected items relatively high, indicating that they might be more likely to engage in such behavior from day to day. For each of the seven items (e.g., "Listened very carefully in class." and "Tried hard to do well in school." $\alpha s > .92$ for each day), youth rated how often (1 = *not at all*, 5 = *all of the time*) they engaged in the behavior in school that day. The seven items were averaged for each day, with higher numbers indicating greater academic engagement for that day.

Youth's *risk taking* was assessed with daily reports using eight items adopted from prior measures of risk taking (Barber et al., 2005; Stattin & Kerr, 2000). Similar to the measure for academic engagement, these items were selected because they might occur relatively frequently on a daily basis (e.g., smoking cigarettes was excluded because very few youth indicated that they would engage in smoking in Study 1). Youth indicated for each item how often (1 = *not at all*, 5 = *all of the time*) they engaged in the behavior described (e.g., "Cheated on an assignment or exam." and "Hung around with kids who get in trouble." $\alpha s > .70$ for each day) on that day. The mean of the eight items was taken for each day, with higher numbers reflecting greater risk-taking behavior for that day.

Performance on a word-search puzzle. An English word-search puzzle was introduced after the administration of the intervention or control to assess performance. English is a core subject in middle school in China that all children take. Thus, children may be motivated to engage in the puzzle to develop their English skills for school. The research assistant made it clear that working on the puzzle can sharpen English skills, but that it was up to youth whether they work on the puzzle or not; they could rest as well as read or work on something from their desk if they preferred. Youth were given 5 min for this break. The puzzle was a 15×15 letter matrix, with hidden words (e.g., “test” and “science”) that were at the appropriate level for youth in seventh grade in Shanghai. The number of words youth correctly found was calculated and used as an index of their *performance on the word-search puzzle*, with heightened performance likely reflecting their effective engagement in a task related to a core school subject.

Results

Does the Intervention Influence Youth's Behavioral Intentions?

As shown in Table 2, ANOVAs with class as a random effect indicated that youth in the counterstereotyping intervention (vs. control) had higher intentions for engagement in school, $F(1, 317) = 8.91, p < .01, d = 0.34$, and lower intentions for risk taking, $F(1, 317) = 5.58, p < .05, d = 0.27$. Notably, there was no effect of the intervention on youth's responses to the filler questions with regard to behavioral intentions ($M = 5.12, SD = 1.08$ vs. $M = 5.09, SD = 1.09$), $F(1, 317) = 0.06, p = .81, d = 0.03$. Unlike in Study 1, there was no interaction between the intervention and type of behavior, $F(1, 316) = 0.93, p = .34$, indicating that the size of the intervention (vs. control) effect on youth's intentions for academic engagement and risk taking intentions did not differ.

Does the Intervention Influence Youth's Daily Behavior?

ANOVAs with a class-level random effect with each of the 3 days of the daily reports as a repeated measure (i.e., time of assessment) were conducted to examine the effects of the counterstereotyping intervention on youth's daily behavior. There was a main effect of condition for academic engagement, $F(1, 289) = 13.38, p < .001$, which was not moderated by time of assessment, $F(2, 578) = 0.06, p = .95$. Follow-up univariate tests indicated that

youth in the counterstereotyping intervention (vs. control) reported greater academic engagement on each of the 3 days of the daily reports (see Panel A of Figure 1), $F_s(1, 290) > 10.09, p_s < .01, d_s > 0.37$. For youth's risk taking, there was also an effect of condition, $F(1, 289) = 4.12, p < .05$, but this was moderated by time of assessment, $F(2, 578) = 3.53, p < .05$. Follow-up univariate tests indicated that youth in the counterstereotyping intervention (vs. control) reported less risk taking on the first, $F(1, 290) = 8.84, p < .01, d = 0.35$, and second, $F(1, 290) = 3.87, p = .05, d = 0.23$, days of the daily reports, but not the third day (see Panel B of Figure 1), $F(1, 290) = 0.56, p = .45, d = 0.09$. For both youth's academic engagement and risk taking, it appeared that reporting daily fostered more constructive behavior: Engagement increased, $F(2, 578) = 2.97, p = .05$, and risk taking decreased, $F(2, 578) = 9.46, p < .001$, over the 3 days of the daily reports, regardless of condition. Examination of the Intervention $\times$ Type of Behavior interaction indicated that as in Study 1 the effect of the intervention (vs. control) was stronger for academic engagement than risk taking, $F(1, 289) = 8.65, p < .01$.

Does the Intervention Influence Word-Search Performance?

An ANOVA with a class-level random effect on how many words youth found in the word-search puzzle indicated that youth in the counterstereotyping intervention ($M = 6.41, SD = 4.99$) correctly found more words than did youth in the control condition ($M = 5.14, SD = 3.75$), $F(1, 317) = 6.67, p < .01, d = 0.29$.

Do Youth's Expected Consequences Play a Mediating Role?

As in Study 1, youth in the counterstereotyping intervention (vs. control) expected their academic engagement to have more positive (vs. negative) outcomes, $F(1, 317) = 12.40, p < .001, d = 0.40$, and their risk taking to have less positive (vs. negative) outcomes (see Table 2), $F(1, 317) = 4.84, p < .05, d = 0.25$. There were no differences between the two conditions in youth's responses to the filler questions with regard to expected consequences ($M = 5.15, SD = 0.84$ vs. $M = 5.13, SD = 0.75$), $F(1, 317) = 0.09, p = .77, d = 0.03$. The effect of the intervention did not differ for youth's expectations of the consequences for academic engagement and risk taking, $F(1, 316) = 0.38, p = .54$.

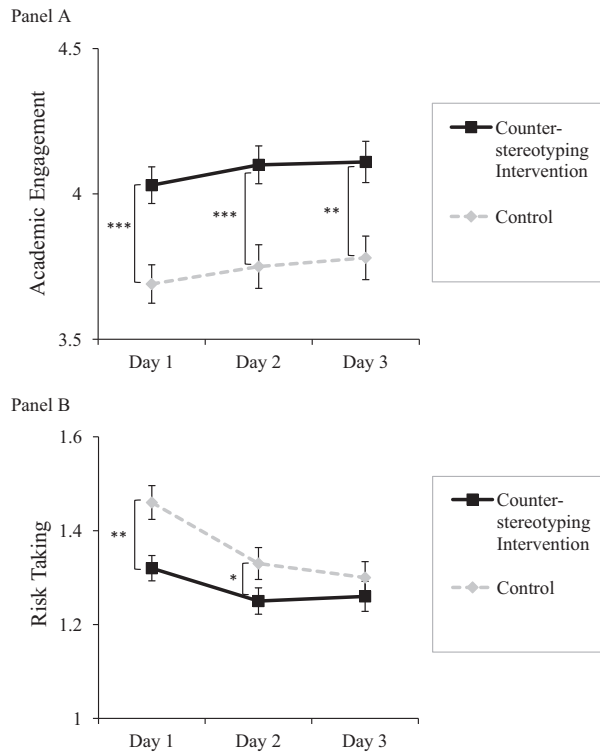


Figure 1. Effect of the counterstereotyping intervention on youth's daily academic engagement (Panel A) and risk taking (Panel B) (Study 2).

Note. Each day, youth reported on how often they engaged in academic engagement and risk taking in school on that day on a 5-point scale (1 = not at all, 5 = all of the time). Error bars represent standard errors of the means.

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

Mediation analyses were conducted to explore if youth's expected consequences contribute to the effects of the counterstereotyping intervention on youth's intentions, daily behavior, and puzzle performance. As shown in Table 3, the more positive (vs. negative) outcomes youth expected for academic engagement, the higher their intended as well as daily academic engagement when controlling for condition (intervention vs. control), β s = .36 and .33, $ps < .001$. The indirect paths from the counterstereotyping intervention (vs. control) via youth's expected consequences to their intended and daily academic engagement were significant, 95% CIs [.03, .12]. Youth's expected consequences produced reductions of 33% in the total effect on youth's intended academic engagement (from $\beta = .17$, $p < .01$ to $\beta = .10$, $p = .07$) and 42% in the total effect on youth's daily academic engagement ($\beta = .20$, $p < .001$ to $\beta = .13$, $p < .05$).

The intervention effect on youth's performance on the word-search puzzle was also mediated by

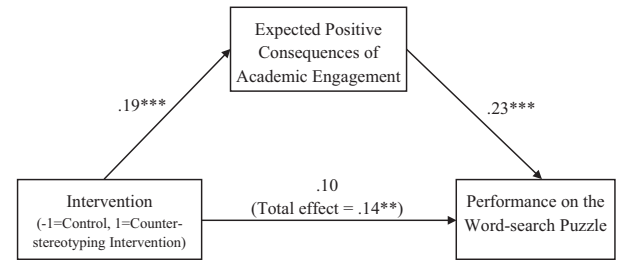


Figure 2. Youth's expected consequences mediated the effect of the counterstereotyping intervention on their performance on the word-search puzzle (Study 2).

Note. Mediation was evaluated in the context of multiple regression analyses. The standardized coefficients yielded by these analyses are presented.

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

youth's expected consequences of academic engagement, 95% CI [.02, .08] (see Figure 2). The more youth expected positive (vs. negative) outcomes for academic engagement, the more correct words they attained on the word-search puzzle, controlling for condition, $\beta = .23$, $p < .001$. Inclusion of youth's expected consequences produced a 31% reduction in the total effect ($\beta = .14$, $p < .01$), with the direct effect no longer being significant ($\beta = .10$, $p = .07$).

The pattern was similar for youth's risk taking. The more youth expected positive (vs. negative) outcomes for risk taking, the higher their intended and daily risk taking after controlling for condition, β s = .34 and .31, $ps < .001$. The indirect paths from the counterstereotyping intervention (vs. control) via youth's expected consequences to their intended and daily risk taking were significant, 95% CIs [-.01, -.08], with reductions of 32% to 42% in the total intervention effect (from $\beta = -.13$, $p < .05$ to $\beta = -.09$, $p = .09$ for intended risk taking and from $\beta = -.12$, $p < .05$ to $\beta = -.08$, $p = .12$ for daily risk taking).

Discussion

Although adolescence can be a time of "storm and stress" (Arnett, 1999; Steinberg, 2001), it can also be a time of flourishing (Dahl et al., 2018; Patton et al., 2018; Steinberg, 2014). In fact, anthropologists and psychologists have documented that in many regions outside of the West, adolescence is normally a period of productivity (e.g., Brown, Larson, & Saraswati, 2002; Schlegel & Barry, 1991). Because views of teens as irresponsible have been implicated in unconstructive behavior during early adolescence (e.g., Qu et al., 2015, 2016, 2018), we conducted two experimental intervention studies to

examine if countering youth's stereotypes of teens as irresponsible leads to more constructive behavior among youth during early adolescence. The stereotype of teens as irresponsible was described to youth as the established belief but then countered with information that teens are often responsible. Teens subsequently generated their own examples of responsible teen behavior they had observed so that they would thoroughly process the idea of teen responsibility with personally real and relevant instances. This counterstereotyping intervention led youth in their first year of middle school to view teens as more responsible than did their counterparts in the control who simply described typical teen behavior. Significantly, youth in the counterstereotyping intervention (vs. control) held higher intentions for academic engagement (Study 1 and 2) and performed better on a word-search puzzle (Study 2). Over 3 days following the intervention, their academic engagement was also higher (Study 2). Youth's risk taking was reduced as well but only in Study 2 where youth in the intervention (vs. control) held lower intentions for risk taking and their risk taking was lower for 2 days following the intervention.

Countering Storm and Stress Teen Stereotypes

A key aim of Study 1 was to examine if it is possible to change youth's views of teens as irresponsible. On the one hand, such beliefs might be difficult to change as they might be driven by cultural ideas about adolescence (e.g., Qu et al., 2015, 2016) as well as societal concerns—for example, to keep adolescents out of the labor market when positions are needed for adults (Enright et al., 1987) or to reduce sentencing for juvenile offenders (e.g., Dodge, 2008). Moreover, stereotypes about teens are likely to be deeply rooted in youth's observations and experiences, as well as exaggerated media portrayals. On the other hand, there is substantial evidence that youth's beliefs can be changed (e.g., Choukas-Bradley et al., 2015; Miu & Yeager, 2015). One key route to such change appears to be normative information (e.g., Asch, 1955; Cialdini et al., 1990; Paluck & Shepherd, 2012; Zou et al., 2009). The current research indicates that indeed it is possible to change youth's conceptions of adolescence.

Using a measure of conceptions of adolescence in which youth compare teens to younger children, Study 1 demonstrated that the counterstereotyping intervention (vs. control) led youth to view teens in a more responsible light. As anticipated, youth exposed to the counterstereotyping intervention

saw the teen (vs. earlier) years as more of a time of being responsible, as manifest in fulfilling family obligations, engaging in school, and refraining from risk taking, than did youth in the control condition. Moreover, unlike youth in the control condition who saw the teen and earlier years as similar in regards to responsibility, youth in the counterstereotyping intervention viewed the teen (vs. earlier) years as a time of greater responsibility. It is possible that early adolescence is a sensitive period in terms of youth's ideas about adolescence. As youth enter this phase of development, they might be particularly receptive to information about teens given that they are taking on a new role of which they are uncertain and might be in active search of guiding information (Ruble, 1994). The counterstereotyping intervention might provide youth with such information. They may also be particularly receptive to the idea of teens as responsible given their desire for respect (Okonofua et al., 2016; Yeager et al., 2018).

Implications for Youth's Behavior

The effect of the counterstereotyping intervention (vs. control) on youth's conceptions of adolescence had implications for their behavior. Youth in the intervention (vs. control) were not only more likely to hold intentions for heightened academic engagement immediately after the intervention but also reported more academic engagement on each of 3 days following the intervention. In addition, the intervention (vs. control) enhanced youth's performance on a word-search puzzle they were told would develop their English skills. Given that English is a core subject in middle school in China, these findings suggest that the engagement fostered by views of teens as responsible may enhance children's performance. However, whether there are such performance benefits needs direct empirical examination—for example, by evaluating the effect of the counterstereotyping intervention on youth's grades or standardized test scores over time. The counterstereotyping intervention reduced intentions for risk taking as well, albeit only in Study 2. In addition, youth in the intervention (vs. control) reported dampened risk taking in their daily reports following the intervention, but this lasted for only the first 2 of the 3 days of their reports, which appeared to be due to the completion of the daily reports reducing risk taking rather than an undoing of the counterstereotyping intervention. However, the effectiveness of the intervention was weaker for youth's daily risk taking (vs. academic

engagement)—a difference that was also evident for youth's intentions in Study 1 but not Study 2.

The tendency for the intervention to have a stronger effect on academic engagement than risk taking might reflect the fact that risk taking intentions and behavior were relatively rare among the young adolescents we studied (see Table 2 and Figure 1). When we modified the risk-taking measure used in Study 1 to focus more on behaviors particularly likely to occur on a daily basis (Study 2), youth reported more intentions for risk taking, with the counterstereotyping intervention significantly reducing such intentions to the same extent as intentions for academic engagement. Notably, the size of the intervention effects on youth's intentions for the two behaviors did not differ from Study 1 to Study 2 suggesting that the larger sample size might also have permitted more power to detect the effect of the intervention on intentions for risk taking. Redirecting youth to view teens as responsible might have a growing impact on risk taking as youth move into high school when risk taking becomes more common, at least in the United States (e.g., Eaton et al., 2012).

In both studies, we went beyond simply identifying if the counterstereotyping intervention is effective in fostering constructive behavior among youth: We examined one mechanism by which it might do so—youth's expectations for the consequences of their behavior. When youth view constructive behavior as normative, they see such behavior as leading to more benefits and fewer costs. Expectancy $\times$ Value perspectives suggest this weighting of benefits and costs leads youth to engage in more constructive behavior (e.g., Barron & Hulleman, 2015; Eccles & Wigfield, 1995). Indeed, the effect of the counterstereotyping intervention on youth's intended and daily behavior was mediated by their expectations for the consequences of their behavior. Youth in the intervention (vs. control) expected academic engagement to yield more rewards (vs. costs), which accounted at least partially for their heightened intended and daily academic engagement as well as performance on the word-search puzzle. Similarly, youth in the intervention (vs. control) saw risk taking as having more costs (vs. rewards), which was associated with their lower intended and daily risk taking in Study 2.

In some cases, youth's expectations only partially mediated the effect of the counterstereotyping intervention. Other mechanisms might also play a role. For example, Buchanan and Hughes (2009) make the case that youth's conceptions of adolescence shape the expectations and standards youth hold

for themselves, which guide their behavior. Moreover, youth in the intervention might conform to descriptive norms that adolescence is a time of responsibility without thinking about the consequences—in fact such norms have been characterized as providing a decisional shortcut about how to behave requiring simply registering what others are doing and then imitating it (Cialdini, 1988). Caution is warranted in drawing conclusions from the mediation analyses because the link between expected rewards (vs. costs) and intended and daily behavior is correlational.

Limitations and Future Directions

The success of the counterstereotyping intervention provides promising groundwork for supporting youth in flourishing during adolescence. Indeed, this brief intervention might have long-term effects on youth's behavior given that it targets an important mechanism (i.e., stereotypes of teens as irresponsible) that research suggests contributes to youth's behavior. However, future research needs to address several key limitations. First, it might be that more sustained intervention is necessary for lasting benefits, as youth's behavior was assessed for only 3 days following the intervention (Study 2). For example, the counterstereotyping intervention examined in the current research might serve as an initial exercise followed by class discussions of how teens do and can act responsibly with attention to how to countercultural (e.g., media) and societal (e.g., institutional) messages. A key endeavor of such an approach might be to support youth in developing a shared consensus with peers about teens so that there is not pressure to confirm to alternative views that youth assume are held by peers. Given the influence of high status (e.g., popular) peers (e.g., Choukas-Bradley et al., 2015; Cohen & Prinstein, 2006), it might be particularly important to target the views of such youth (for an example of an intervention along these lines, see Paluck & Shepherd, 2012). Other tools to strengthen the effectiveness of the intervention could involve procedures (e.g., involving youth in communicating information about teen responsibility to others and drawing more on their desire for respect) identified by Yeager and colleagues (Bryan et al., 2016; Yeager et al., 2018) as important to the success of brief interventions targeting beliefs during adolescence.

Second, the counterstereotyping intervention involved two components: (a) discrediting the stereotype of teens as irresponsible, and indicating instead that responsibility is normative; and (b)

having youth generate examples of responsible teen behavior they have observed. It is unclear if both components are necessary. This is an important question for future research to address in terms of understanding what contributes to youth's views of teens—that is, do they form these stereotypes on normative information, personal observations, or both? If only one component is necessary, then the counterstereotyping intervention can be made more efficient using only that component. Future research might also explore what it is about each component that matters. For example, is it necessary to communicate the existence of the stereotype before countering it with normative information about responsibility? Is it important for youth to generate their own examples? Or can they simply be exposed to examples—for instance, by seeing descriptions that they believe their peers have provided? Interestingly, in Study 2, it appeared that simply completing the daily reports of academic engagement and risk taking for 3 days fostered constructive behavior over this time frame, regardless of whether youth were in the intervention or control. Completing the daily checklist might make youth more aware of their behavior, and perhaps discrepancies between it and their ideals, thereby allowing them to correct their behavior. Hence, behavioral tracking may also be a useful intervention on its own.

Third, a key strength of the current research was that it did not rely on the Western samples typical of psychological research (e.g., Arnett, 2002; Heine & Norenzayan, 2006). However, given that the Shanghai youth studied in the current research are exposed to both Chinese and Western culture, which hold different ideas about adolescence (Qu et al., 2016), their views of teens might be particularly responsive to the counterstereotyping intervention used here. It is unclear if the intervention can also be effective in the United States where storm and stress ideas about adolescence are more pronounced (Qu et al., 2016). Not only might youth have a larger database of their own observations of unconstructive behavior among adolescents, but the media and institutions might also be more likely to promote negative teen stereotypes. As a consequence, American youth might have a more difficult time generating examples of responsible behavior. Hence, before implementing the counterstereotyping intervention in the United States, it should be evaluated with American youth with particular attention to modifications (e.g., watching interviews with youth their age recounting instances of responsible behavior) that might make it effective given the culture in which they reside.

Conclusions

Despite these limitations, the two experimental intervention studies reported here indicate that one way to support youth in flourishing during adolescence is to help them in adopting views of teens as responsible. Given that many adults, including both parents and teachers, see teens in a negative light (Buchanan & Holmbeck, 1998; Hines & Paulson, 2006), and that this is reinforced by society more generally (e.g., via media depictions of teens and institutional policies; Dodge, 2008; Gilliam & Bales, 2001), messages counter to such stereotypes are needed (for the argument that scholars should do away with storm and stress ideas of adolescence, see Hollenstein & Loughheed, 2013). When such messages provide normative information that teens are responsible and can be personalized by youth, as is the case in the counterstereotyping intervention examined here, they might be effective in cultivating views of teens as responsible among youth, thereby allowing youth to see responsible behavior as rewarding. Interventions for teens built on these kinds of principles might be time and cost efficient for schools to implement with significant benefits for youth during a phase of development that can be a time of risk for many. Moreover, such interventions may ultimately start a bottom-up process by which teens begin to act more constructively, leading society to view teens more positively, thereby conveying more positive messages about them, which then trickle down to further promote youth's flourishing.

References

- Ambady, N., Shih, M., Kim, A., & Pittinsky, T. L. (2001). Stereotype susceptibility in children: Effects of identity activation on quantitative performance. *Psychological Science*, 12, 385–390. <https://doi.org/10.1111/1467-9280.00371>
- Arnett, J. J. (1999). Adolescent storm and stress, reconsidered. *American Psychologist*, 54, 317–326. <https://doi.org/10.1037/0003-066X.54.5.317>
- Arnett, J. J. (2002). The psychology of globalization. *American Psychologist*, 57, 774–783. <https://doi.org/10.1037/0003-066X.57.10.774>
- Aronson, J., Fried, C. B., & Good, C. (2002). Reducing the effects of stereotype threat on African American college students by shaping theories of intelligence. *Journal of Experimental Social Psychology*, 38, 113–125. <https://doi.org/10.1006/jesp.2001.1491>
- Asch, S. E. (1955). Opinions and social pressure. *Scientific American*, 193, 31–35. <https://doi.org/10.1038/scientificamerican1155-31>

- Barber, B. K., Stolz, H. E., & Olsen, J. A. (2005). Parental support, psychological control, and behavioral control: Assessing relevance across time, culture, and method. *Monographs of the Society for Research in Child Development* (Serial No. 282), 70, 58–72. <https://doi.org/10.1111/j.1540-5834.2005.00365.x>
- Barron, K. E., & Hulleman, C. S. (2015). Expectancy-value-cost model of motivation. In J. D. Wright (Ed.), *International encyclopedia of the social & behavioral sciences* (Vol. 8, 2nd ed., pp. 503–509). Oxford, UK: Elsevier. <https://doi.org/10.1016/b978-0-08-097086-8.26099-6>
- Bigler, R. S., & Liben, L. S. (1992). Cognitive mechanisms in children's gender stereotyping: Theoretical and educational implications of a cognitive-based intervention. *Child Development*, 63, 1351–1363. <https://doi.org/10.2307/1131561>
- Blackwell, L. S., Trzesniewski, K. H., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development*, 78, 246–263. <https://doi.org/10.1111/j.1467-8624.2007.00995.x>
- Blair, I. V., Ma, J. E., & Lenton, A. P. (2001). Imagining stereotypes away: The moderation of implicit stereotypes through mental imagery. *Journal of Personality and Social Psychology*, 81, 828–841. <https://doi.org/10.1037/0022-3514.81.5.828>
- Brislin, R. W. (1980). Translation and content analysis of oral and written materials. In H. C. Triandis & J. W. Berry (Eds.), *Handbook of cross-cultural psychology: Vol. 2. Methodology* (pp. 389–444). Boston, MA: Allyn & Bacon.
- Brown, B. B., Larson, R., & Saraswati, T. S. (2002). *The world's youth: Adolescence in eight regions of the globe*. Cambridge, UK: Cambridge University Press. <https://doi.org/10.1017/CBO9780511613814>
- Bryan, C. J., Yeager, D. S., Hinojosa, C. P., Chabot, A., Bergen, H., Kawamura, M., & Steubing, F. (2016). Harnessing adolescent values to motivate healthier eating. *Proceedings of the National Academy of Sciences of the United States of America*, 113, 10830–10835. <https://doi.org/10.1073/pnas.1604586113>
- Buchanan, C. M., & Holmbeck, G. N. (1998). Measuring beliefs about adolescent personality and behavior. *Journal of Youth and Adolescence*, 27, 607–627. <https://doi.org/10.1023/A:1022835107795>
- Buchanan, C. M., & Hughes, J. L. (2009). Construction of social reality during early adolescence: Can expecting storm and stress increase real or perceived storm and stress? *Journal of Research on Adolescence*, 19, 261–285. <https://doi.org/10.1111/j.1532-7795.2009.00596.x>
- Casey, B. J., Getz, S., & Galván, A. (2008). The adolescent brain. *Developmental Review*, 28, 62–77. <https://doi.org/10.1016/j.dr.2007.08.003>
- Ceci, S. J., Williams, W. M., & Barnett, S. M. (2009). Women's underrepresentation in science: Sociocultural and biological considerations. *Psychological Bulletin*, 135, 218–261. <https://doi.org/10.1037/a0014412>
- Centers for Disease Control and Prevention. (2006). Youth risk behavior surveillance—United States, 2005. *Morbidity & Mortality Weekly Report*, 55, 1–108.
- Cheung, C., Ngai, N., & Ngai, S. S. (2007). Family strain and adolescent delinquency in two Chinese cities, Guangzhou and Hong Kong. *Journal of Child and Family Studies*, 16, 626–641. <https://doi.org/10.1007/s10826-006-9112-3>
- Choukas-Bradley, S., Giletta, M., Cohen, G. L., & Prinstein, M. J. (2015). Peer influence, peer status, and prosocial behavior: An experimental investigation of peer socialization of adolescents' intentions to volunteer. *Journal of Youth and Adolescence*, 44, 2197–2210. <https://doi.org/10.1007/s10964-015-0373-2>
- Cialdini, R. B. (1988). *Influence: Science and practice* (2nd ed.). Glenview, IL: Scott, Foresman.
- Cialdini, R. B., Reno, R. R., & Kallgren, C. A. (1990). A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology*, 58, 1015–1026. <https://doi.org/10.1037/0022-3514.58.6.1015>
- Cohen, G. L., & Prinstein, M. J. (2006). Peer contagion of aggression and health risk behavior among adolescent males: An experimental investigation of effects on public conduct and private attitudes. *Child Development*, 77, 967–983. <https://doi.org/10.1111/j.1467-8624.2006.00913.x>
- Dahl, R. E., Allen, N. B., Wilbrecht, L., & Suleiman, A. B. (2018). Importance of investing in adolescence from a developmental science perspective. *Nature*, 554, 441–450. <https://doi.org/10.1038/nature25770>
- Dodge, K. A. (2008). Framing public policy and prevention of chronic violence in American youths. *American Psychologist*, 63, 573–590. <https://doi.org/10.1037/0003-066X.63.7.573>
- Dowson, M., & McInerney, D. M. (2004). The development and validation of the goal orientation and learning strategies survey (GOALS-S). *Educational and Psychological Measurement*, 64, 290–310. <https://doi.org/10.1177/0013164403251335>
- Eaton, D. K., Kann, L., Kinchen, S., Shanklin, S., Flint, K. H., Hawkins, J., . . . Whittle, L. (2012). Youth risk behavior surveillance: United States, 2011. *Morbidity and Mortality Weekly Report Surveillance Summaries*, 61, 1–162.
- Eccles, J. S., Adler, T. F., Futterman, R., Goff, S. B., Kaczala, C. M., Meece, J. L., & Midgley, C. (1983). Expectancies, values, and academic behaviors. In J. T. Spence (Ed.), *Achievement and achievement motivation* (pp. 75–146). San Francisco, CA: W. H. Freeman.
- Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., & Mac Iver, D. (1993). Development during adolescence: The impact of stage-environment fit on young adolescents' experiences in schools and in families. *American Psychologist*, 48, 90–101. <https://doi.org/10.1037/0003-066X.48.2.90>

- Eccles, J. S., & Wigfield, A. (1995). In the mind of the actor: The structure of adolescents' achievement task values and expectancy-related beliefs. *Personality and Social Psychology Bulletin*, 21, 215–225. <https://doi.org/10.1177/0146167295213003>
- Enright, R. D., Levy, V. M., Harris, D., & Lapsley, D. K. (1987). Do economic conditions influence how theorists view adolescents? *Journal of Youth and Adolescence*, 16, 541–559. <https://doi.org/10.1007/BF02138820>
- Erkut, S. (2010). Developing multiple language versions of instruments for intercultural research. *Child Development Perspectives*, 4, 19–24. <https://doi.org/10.1111/j.1750-8606.2009.00111.x>
- Fromme, K., Katz, E. C., & Rivet, K. (1997). Outcome expectancies and risk-taking behavior. *Cognitive Therapy and Research*, 21, 421–442. <https://doi.org/10.1023/A:1021932326716>
- Galván, A., Spatzier, A., & Juvonen, J. (2011). Perceived norms and social values to capture school culture in elementary and middle school. *Journal of Applied Developmental Psychology*, 32, 346–353. <https://doi.org/10.1016/j.appdev.2011.08.005>
- Gilliam, F., & Bales, S. (2001). *Strategic frame analysis: Reframing America's youth*. Social Policy Report, 15, 1–14. Ann Arbor, MI: Society for Research in Child Development.
- Hall, G. S. (1904). *Adolescence: Its psychology and its relation to physiology, anthropology, sociology, sex, crime, religion, and education* (Vols. I & II). Englewood Cliffs, NJ: Prentice-Hall.
- Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs*, 76, 408–420. <https://doi.org/10.1080/03637750903310360>
- Heine, S. J., & Norenzayan, A. (2006). Toward a psychological science for a cultural species. *Perspectives on Psychological Science*, 1, 251–269. <https://doi.org/10.1111/j.1745-6916.2006.00015.x>
- Helms, S. W., Choukas-Bradley, S., Widman, L., Giletta, M., Cohen, G. L., & Prinstein, M. J. (2014). Adolescents misperceive and are influenced by high-status peers' health risk, deviant, and adaptive behavior. *Developmental Psychology*, 50, 2697–2714. <https://doi.org/10.1037/a0038178>
- Hines, A. R., & Paulson, S. E. (2006). Parents' and teachers' perceptions of adolescent storm and stress: Relations with parenting and teaching styles. *Adolescence*, 41, 597–614.
- Hollenstein, T., & Loughheed, J. P. (2013). Beyond storm and stress: Typicality, transactions, timing, and temperament to account for adolescent change. *American Psychologist*, 68, 444–454. <https://doi.org/10.1037/a0033586>
- Holmbeck, G. N., & Hill, J. P. (1988). Storm and stress beliefs about adolescence: Prevalence, self-reported antecedents, and effects of an undergraduate course. *Journal of Youth and Adolescence*, 17, 285–306. <https://doi.org/10.1007/BF01537671>
- Hong, Y., Morris, M. W., Chiu, C., & Benet-Martínez, V. (2000). Multicultural minds: A dynamic constructivist approach to culture and cognition. *American Psychologist*, 55, 709–720. <https://doi.org/10.1037/0003-066X.55.7.709>
- Luciana, M., & Collins, P. F. (2012). Incentive motivation, cognitive control, and the adolescent brain: Is it time for a paradigm shift? *Child Development Perspectives*, 6, 392–399. <https://doi.org/10.1111/j.1750-8606.2012.00252.x>
- Meece, J. L., Wigfield, A., & Eccles, J. S. (1990). Predictors of math anxiety and its influence on young adolescents' course enrollment intentions and performance in mathematics. *Journal of Educational Psychology*, 82, 60–70. <https://doi.org/10.1037/0022-0663.82.1.60>
- Miu, A. S., & Yeager, D. S. (2015). Preventing symptoms of depression by teaching adolescents that people can change: Effects of a brief incremental theory of personality intervention at 9-month follow-up. *Clinical Psychological Science*, 3, 726–743. <https://doi.org/10.1177/2167702614548317>
- Nichols, S. L., & Good, T. L. (2004). *America's teenagers—myths and realities: Media images, schooling, and the social costs of careless indifference*. Mahwah, NJ: Erlbaum.
- O'Brien, S. F., & Bierman, K. L. (1988). Conceptions and perceived influence of peer groups: Interviews with preadolescents and adolescents. *Child Development*, 59, 1360–1365. <https://doi.org/10.2307/1130498>
- Okonofua, J. A., Paunesku, D., & Walton, G. M. (2016). Brief intervention to encourage empathic discipline cuts suspension rates in half among adolescents. *Proceedings of the National Academy of Sciences of the United States of America*, 113, 5221–5226. <https://doi.org/10.1073/pnas.1523698113>
- Paluck, E. L., & Shepherd, H. (2012). The salience of social referents: A field experiment on collective norms and harassment behavior in a school social network. *Journal of Personality and Social Psychology*, 103, 899–915. <https://doi.org/10.1037/a0030015>
- Patton, G. C., Olsson, C. A., Skirbekk, V., Saffery, R., Wlodek, M. E., Azzopardi, P. S., . . . Sawyer, S. M. (2018). Adolescence and the next generation. *Nature*, 554, 458–466. <https://doi.org/10.1038/nature25759>
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40, 879–891. <https://doi.org/10.3758/BRM.40.3.879>
- Qu, Y., Pomerantz, E. M., McCormick, E., & Telzer, E. H. (2018). Youth's conceptions of adolescence predict longitudinal changes in prefrontal cortex activation and risk taking during adolescence. *Child Development*, 89, 773–783. <https://doi.org/10.1111/cdev.13017>
- Qu, Y., Pomerantz, E. M., Wang, M., Cheung, C., & Cimpian, A. (2016). Conceptions of adolescence: Implications for differences in engagement in school over early adolescence in the United States and China. *Journal of Youth and Adolescence*, 45, 1512–1526. <https://doi.org/10.1007/s10964-016-0492-4>

- Qu, Y., Pomerantz, E. M., Wang, Q., & Ng, F. (2015, March). *American and Chinese conceptions of adolescence: Implications for differences in adolescent pathways*. Talk presented at the Biennial Meeting of the Society for Research in Child Development, Philadelphia, PA.
- Rose, A. J., Swenson, L. P., & Waller, E. M. (2004). Overt and relational aggression and perceived popularity: Developmental differences in concurrent and prospective relations. *Developmental Psychology, 40*, 378–387. <https://doi.org/10.1037/0012-1649.40.3.378>
- Ruble, D. N. (1994). *A phase model of transitions: Cognitive and motivational consequences*. *Advances in experimental social psychology* (Vol. 26). San Diego, CA: Academic Press. [https://doi.org/10.1016/s0065-2601\(08\)60154-9](https://doi.org/10.1016/s0065-2601(08)60154-9)
- Rucker, D. D., Preacher, K. J., Tormala, Z. L., & Petty, R. E. (2011). Mediation analysis in social psychology: Current practices and new recommendations. *Social and Personality Psychology Compass, 5*, 359–371. <https://doi.org/10.1111/j.1751-9004.2011.00355.x>
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68–78. <https://doi.org/10.1037/0003-066X.55.1.68>
- Schlegel, A., & Barry, H. I. I. (1991). *Adolescence: An anthropological inquiry*. New York, NY: Free Press.
- Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. *Psychological Methods, 7*, 422–445. <https://doi.org/10.1037/1082-989X.7.4.422>
- Simonsohn, U. (2015). Small telescopes: Detectability and the evaluation of replication results. *Psychological Science, 26*, 559–569. <https://doi.org/10.1177/0956797614567341>
- Skinner, E. A., Kindermann, T. A., & Furrer, C. J. (2009). A motivational perspective on engagement and disaffection: Conceptualization and assessment of children's behavioral and emotional participation in academic activities in the classroom. *Educational and Psychological Measurement, 69*, 493–525. <https://doi.org/10.1177/0013164408323233>
- Stattin, H., & Kerr, M. (2000). Parental monitoring: A reinterpretation. *Child Development, 71*, 1072–1085. <https://doi.org/10.1111/1467-8624.00210>
- Steinberg, L. (2001). We know some things: Parent–adolescent relationships in retrospect and prospect. *Journal of Research on Adolescence, 11*(1), 1–19. <https://doi.org/10.1111/1532-7795.00001>
- Steinberg, L. (2008). A social neuroscience perspective on adolescent risk-taking. *Developmental Review, 28*, 78–106. <https://doi.org/10.1016/j.dr.2007.08.002>
- Steinberg, L. (2014). *Age of opportunity: Lessons from the new science of adolescence*. Boston, MA: Houghton Mifflin Harcourt.
- Steinberg, L., & Morris, A. (2001). Adolescent development. *Annual Review of Psychology, 52*, 83–110. <https://doi.org/10.1146/annurev.psych.52.1.83>
- Walton, G. M. (2014). The new science of wise psychological interventions. *Current Directions in Psychological Science, 23*(1), 73–82. <https://doi.org/10.1177/0963721413512856>
- Wang, Q., & Pomerantz, E. M. (2009). The motivational landscape of early adolescence in the United States and China: A longitudinal investigation. *Child Development, 80*, 1272–1287. <https://doi.org/10.1111/j.1467-8624.2009.01331.x>
- Wigfield, A., Eccles, J. S., Schiefele, U., Roeser, R. W., & Davis-Kean, P. (2006). *Development of achievement motivation*. Hoboken, NJ: Wiley.
- World Population Review. (2015). *Shanghai population*. Retrieved from <http://worldpopulationreview.com/world-cities/shanghai-population/>
- Yeager, D. S., Dahl, R. E., & Dweck, C. S. (2018). Why interventions to influence adolescent behavior often fail but could succeed. *Perspectives on Psychological Science, 13*, 101–122. <https://doi.org/10.1177/1745691617722620>
- Yeager, D. S., Trzesniewski, K. H., & Dweck, C. S. (2013). An implicit theories of personality intervention reduces adolescent aggression in response to victimization and exclusion. *Child Development, 84*, 970–988. <https://doi.org/10.1111/cdev.12003>
- Yeager, D. S., & Walton, G. M. (2011). Social-psychological interventions in education: They're not magic. *Review of Educational Research, 81*, 267–301. <https://doi.org/10.3102/0034654311405999>
- Zhang, L. (2008). Juvenile delinquency and justice in contemporary China: A critical review of the literature over 15 years. *Crime, Law and Social Change, 50*, 149–160. <https://doi.org/10.1007/s10611-008-9137-1>
- Zhao, X., Lynch, Jr., J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research, 37*, 197–206. <https://doi.org/10.1086/651257>
- Zou, X., Tam, K., Morris, M. W., Lee, S., Lau, I. Y., & Chiu, C. (2009). Culture as common sense: Perceived consensus versus personal beliefs as mechanisms of cultural influence. *Journal of Personality and Social Psychology, 97*, 579–597. <https://doi.org/10.1037/a0016399>