

Running head: THREAT WHEN ANTICIPATING CROSS-CLASS INTERACTIONS

**Crossing Up or Down: When Is Anticipating Cross-Class Interactions more Threatening
than Same-Class Interactions?**

Mindy Truong¹, Sarah S. M. Townsend¹, Stephanie Smallets¹, & Nicole M. Stephens²

¹Department of Management and Organization, Marshall School of Business, University of
Southern California

²Department of Management and Organizations, Kellogg School of Management, Northwestern
University

Author Note:

The authors thank Elizabeth Quinn for her feedback on previous versions of this manuscript.

Correspondence concerning this article should be addressed to Mindy Truong, Marshall School
of Business, Department of Management & Organization, 701 Exposition Blvd., HOH-431, Los
Angeles, CA, 90089-1424. E-mail: mindyt@usc.edu

Running head: THREAT WHEN ANTICIPATING CROSS-CLASS INTERACTIONS

Abstract

People often experience greater threat anticipating or engaging in *cross*-group interactions compared to *same*-group interactions. However, much of what is known on threat in cross-group interactions comes from research on cross-*race* interactions. Members of higher status racial groups may be threatened due to concerns about appearing prejudiced and members of lower racial groups may be threatened due to concerns about being the target of prejudice. On the one hand, given that both race and social class are meaningful social identities and convey status differences, people from higher and lower social class backgrounds may have similar experiences of threat. On the other hand, given key differences between race and social class, people from higher and lower social class backgrounds may have divergent experiences. Specifically, social class is perceived to be more malleable than race and the two may differentially shape experiences in potentially threatening interactions. To broaden our understanding of cross-group interactions, we examine experiences of threat when anticipating cross-class versus same-class interactions. We distinguish between downward cross-class interactions (i.e., people from higher social class backgrounds interacting with people from lower social class backgrounds) and upward cross-class interactions (i.e., people from lower social class backgrounds interacting with people from higher social class backgrounds). We measure threat using cardiovascular measures in Study 1 and self-report measures in Study 2 (pre-registered). Across studies ($N_{total} = 535$), participants experienced greater threat when anticipating *downward* cross-class compared to same-class interactions but similar levels of threat when anticipating *upward* cross-class compared to same-class interactions.

Keywords: Social class, intergroup interactions, threat, cardiovascular reactivity

Crossing Up or Down: When Is Anticipating Cross-Class Interactions more Threatening than Same-Class Interactions?

The idea that anticipating or engaging in cross-group interactions elicits experiences of threat is often considered to be a truism of intergroup relations (e.g., Blascovich, Mendes, Hunter, Lickel, & Kowai-Bell, 2001; Mendes, Blascovich, Lickel, & Hunter, 2002; Page-Gould, Mendoza-Denton, & Tropp, 2008; Plant, 2004). However, much of what is known about threat in cross-group interactions comes from research focused on race¹ (Davies, Tropp, Aron, Pettigrew, & Wright, 2011). Examining experiences of threat in cross-*class* interactions may be a critical route for broadening social psychological theorizing about the experiences of cross-group interactions. That is, experiences of threat in cross-class interactions may either mirror or diverge from the patterns observed in cross-race interactions. On the one hand, given that both race and social class are meaningful social identities and convey status differences (e.g., Bourdieu, 1977; Pitesa, Thau, & Pilluta, 2017; Thomas & Azmitia, 2014), cross-class interactions may show the same pattern of threat found in cross-race interactions. That is, people from higher and lower social class backgrounds may have similar experiences of increased threat in cross-class (vs. same-class) interactions. On the other hand, given key differences between race and social class (e.g., social class is perceived to be malleable; Kraus & Keltner, 2013; and, the two may differentially shape experiences in potentially threatening interactions; Townsend, Eliezer, Major, & Mendes, 2014), cross-class interactions may show a different pattern found in cross-race interactions. That is, people from higher and lower social class backgrounds may have divergent experiences of threat in cross-class (vs. same-class) interactions.

¹ We refer to cross-race and cross-ethnic interactions as “cross-race interactions.”

Do experiences of threat in cross-class interactions diverge from the bidirectional patterns observed in previous research on cross-race interactions (i.e., both high-status and low-status groups experience threat)? We address this question in the current research by examining whether the direction of the cross-class interaction matters. In the following sections, we theorize separately about downward and upward cross-class interactions. We first consider experiences of threat in *downward* cross-class interactions: that is, people from higher social class backgrounds interacting with people from lower social class backgrounds. We then discuss experiences of threat in *upward* cross-class interactions: that is, people from lower social class backgrounds interacting with people from higher social class backgrounds. Finally, we report two studies in which we examine people's experiences of threat while anticipating interacting with a cross-class or same-class partner while working on a collaborative task. Throughout these studies, we use the term *threat* to refer to the perception that situational demands exceed one's personal resources to cope (Blascovich & Mendes, 2000).

Anticipating Downward Cross-Class Versus Same-Class Interactions

We theorize that people from higher social class backgrounds will experience greater threat when anticipating an interaction with someone from a lower social class background (i.e., a downward cross-class interaction) compared to an interaction with someone from a higher social class background (i.e., a same-class interaction). Given that both race and social class are meaningful social identities and convey status differences, our theorizing builds on research on cross-race interactions. This work demonstrates that downward cross-race interactions are more threatening than same-race interactions (e.g., Mendes et al., 2002; Plant, 2004). Specifically, White people, who are the higher status racial group in the United States, experience threat when anticipating or engaging in interactions with members of lower status racial groups (Page-Gould

et al., 2008). There are many possible reasons for this increased threat. For example, researchers have argued that this increased threat stems from White people's concern about appearing either prejudiced (e.g., Plant & Devine, 2003; Richeson & Shelton, 2003; Trawalter, Adam, Lansdale, & Richeson, 2012) or unfairly privileged (Phillips & Lowery, 2015), or their concern that members of lower status racial groups challenge their racial group's high status (Sidanius & Pratto, 1993). Given their higher status (e.g., Pitesa et al., 2017), people from higher social class backgrounds may have concerns similar to White people in cross-race interactions when they anticipate or engage in interactions with people from lower social class backgrounds. For example, people from higher social class backgrounds may experience threat due to concerns about appearing prejudiced or condescending, being perceived as unfairly privileged, or their group's high status being challenged by people from lower social class backgrounds.

Although there is no empirical research directly examining people's experiences of threat in cross-class and same-class interactions, there is more general work on interacting across social class divides that is consistent with our theorizing that anticipating downward cross-class interactions will be more threatening than same-class interactions. One paper in particular informs our theorizing (Côté, Kraus, Carpenter, Piff, Beermann, & Keltner, 2017). While Côté and colleagues did not measure experiences of threat, they find that people from higher social class backgrounds show less downward cross-class affiliation compared to same-class affiliation. Two additional studies that inform our theorizing examine experiences during an interaction with a disadvantaged or advantaged peer, irrespective of one's own social class background (Blascovich, Mendes, Hunter, Lickel, & Kowai-Bell, 2001, Study 3; Mendes et al., 2002). Thus, although this research did not examine downward cross-class versus same-class interactions, results demonstrate that interacting with someone from a disadvantaged versus advantaged

background tends to be more threatening for people regardless of their own social class background.

Anticipating Upward Cross-Class Versus Same-Class Interactions

We offer two possibilities for whether people from lower social class backgrounds will experience threat when anticipating an interaction with someone from a higher social class background (i.e., an upward cross-class interaction) compared to an interaction with someone from a lower social class background (i.e., a same-class interaction). The first possibility is that anticipating upward cross-class interactions may be more threatening than anticipating same-class interactions. Given that both race and social class convey status differences, we again draw on research examining cross-race interactions. This work demonstrates that racial minorities, who are members of lower status racial groups in the United States, experience threat when anticipating or engaging in interactions with White people (i.e., upward cross-race interactions; e.g., Plant, 2004; Sawyer, Major, Casad, Townsend, & Mendes, 2012). Empirical and theoretical work argues that racial minorities experience this increased threat because they have concerns about being targets of discrimination and prejudice (e.g., Crocker, Major, & Steele, 1998; Shelton, Richeson, Salvatore, 2005; Tropp, 2003). Like racial minorities, people from lower social class backgrounds have relatively lower status (e.g., Kraus, Piff, Mendoza-Denton, Rheinschmidt, & Keltner, 2012). Accordingly, they may also have concerns about being targets of discrimination and prejudice when anticipating or engaging in interactions with people from higher social class backgrounds. Thus, mirroring experiences in cross-race interactions, both downward and upward cross-class interactions may be threatening. Côté and colleagues (2017)'s work on cross-class affiliation is also consistent with this possibility. They find that people from

lower social class backgrounds show less affiliation with upward cross-class, compared to same-class, partners.

The second possibility is that anticipating upward cross-class interactions may *not* be more threatening than same-class interactions. Social class and race also differ in important ways (e.g., perceived malleability and how they shape experiences in potentially threatening interactions; Kraus & Keltner, 2013; Townsend et al., 2014). Therefore, we theorize that experiences anticipating upward cross-class interactions may diverge from experiences anticipating upward cross-race interactions. In contrast to racial minorities in cross-race interactions, it is possible that people from lower social class backgrounds experience similar levels of threat anticipating cross-class and same-class interactions because they are relatively unconcerned about being the target of prejudice. For example, people from lower social class backgrounds may believe that it is unlikely for their interaction partner to be prejudiced against them either because they believe that social class is malleable (Kraus & Keltner, 2013; Kraus et al., 2012) or because upward mobility in the U.S. is encouraged (e.g., Kraus & Tan, 2015). Additionally, it is possible that people from lower social class backgrounds may acknowledge the possibility that they will be the targets of prejudice in a cross-class interaction, but that possibility may not be experienced as threatening. For example, Latinas from lower social class backgrounds were found to experience equal levels of threat during interactions with racially prejudiced versus nonprejudiced White female partners (Townsend et al., 2014). Thus, downward cross-class, but not upward cross-class, interactions may be threatening. Interestingly, Côté and colleagues (2017)'s work can be interpreted as consistent with this possibility. Although their paper demonstrates that cross-class affiliation is generally less common than

same-class affiliation, they also find that upward cross-class affiliation is more common than downward cross-class affiliation.

Current Research

In two studies, undergraduates from diverse social class backgrounds introduced themselves to a White, same-gender partner (i.e., a confederate) and anticipated a face-to-face interaction. Following previous work on cross-group interaction research, we told participants that they would be working with their partner on a collaborative task (e.g., Côté et al., 2017, Study 3; Mendes et al., 2002; Sawyer et al., 2012). We chose to examine people's anticipation of the interactions, rather than the interactions themselves, because experiences during this time of anticipation have the potential to affect the subsequent interaction (e.g., Brooks, 2014) and people's willingness to engage in them (e.g., Schultz, Gaither, Urry, & Maddox, 2015). We manipulated confederates' social class background using parental educational attainment and income, which convey one's access to material resources and cultural knowledge and are commonly used indicators of social class background (e.g., Duncan, Featherman, & Duncan, 1972; Krieger, Williams, & Moss, 1997; Sirin, 2005). Accordingly, we operationalized participants' social class backgrounds as a composite of parental educational attainment and income.² We measured threat using cardiovascular (Study 1) and self-report (Study 2, pre-registered) responses.

We predicted that participants from higher social class backgrounds would exhibit greater threat when anticipating cross-class versus same-class interactions. In contrast, we had

² We initially planned to use parental educational attainment as the sole indicator of social class background. However, to better construct cross-class and same-class interactions, we post hoc decided to use the composite measure of participants' social class background to match our manipulation of partners' social class backgrounds. We report analyses using parental educational attainment alone as the measure of participants' social class backgrounds on threat below and find similar results across these two measures of social class background.

competing predictions for participants from lower social class backgrounds: we expected that they would either exhibit greater threat when anticipating cross-class versus same-class interactions or similar threat levels. After finding support for the latter, we preregistered this prediction for Study 2 and examined potential mediators for the threat experienced by people from higher social class backgrounds when anticipating downward cross-class interactions.

Study 1

Method

Participants. Over three semesters, we recruited 228 first-year college students. Although we operationalized participants' social class background using parental educational attainment and family income, we only had access to participants' parental educational attainment for recruitment. Therefore, we recruited students using this indicator alone. Specifically, to recruit participants from lower social class backgrounds, we recruited students who indicated that neither parent had a 4-year college degree ($n = 117$). Likewise, to recruit participants from higher social class backgrounds, we recruited a similar number of students who indicated that at least one parent had a 4-year college degree ($n = 111$). We excluded four participants due to procedural error. We also excluded five participants who failed our manipulation check by incorrectly recalling their partners' social class background (no significant differences by condition, $\chi^2(1, N = 228) = 0.33, p = .567$). To maintain power, we include 39 participants who left the manipulation check items unanswered. Excluding these participants does not change the significance or direction of results. Our final sample was 219 participants. A sensitivity power analysis using G*Power (Faul, Erdfelder, Lang, & Buchner, 2007), specifying an alpha of 0.05 for a two-tailed test, indicated that we had the 80% power to

detect an interaction effect size of $R^2 = .043$. We report all measures, manipulations, and exclusions for Studies 1 and 2.

Procedure. Participants arrived at the laboratory individually for a study on how people respond physiologically during introductions and tasks. The experimenter told participants that they would: (a) meet another participant who would be their partner (i.e., a confederate), (b) complete a task individually, and (c) work with their partner on a collaborative task. We examined experiences of threat due to *anticipating* cross-class versus same-class interactions.

Cardiovascular equipment set-up. The experimenter attached cardiovascular sensors to participants, then left the room and recorded participants' cardiovascular responses for 5 minutes.

Manipulation and video introductions. Participants then completed an introduction questionnaire containing questions about parental educational attainment and family income along with several filler items. We used the introduction questionnaire, along with an introduction video, to manipulate partners' social class backgrounds. We randomly assigned participants to a cross-class or same-class partner who was not actually present. Participants ostensibly exchanged questionnaires with this partner and learned their social class background. In order to create strong manipulations that would clearly convey partners' social class backgrounds, we manipulated both parental educational attainment and family income. Specifically, participants in the lower social class partner condition read that neither of their partner's parents had a 4-year college degree and their family's income was less than \$100,000 (the lowest option provided). In contrast, participants in the higher social class partner condition read that their partner's parents both had 4-year college degrees and their family's income was greater than \$300,000 (the highest option provided).

Participants then watched a prerecorded 1-minute video of their partner's introduction, which reiterated information from the introduction questionnaire. These videos depicted one of four confederates (2 male and 2 female). Each confederate recorded an introduction video for each condition (i.e., lower and higher social class partner). To bolster our social class background manipulation, partners mentioned their parents' educational attainment in their introduction. Specifically, they said, "...neither of my parents went to college" (lower social class partner condition) or "...both of my parents went to college" (higher social class partner condition). Participants then introduced themselves over video to their partners for 1 minute. Experimenters instructed participants to elaborate on the introduction questionnaire to "give their partner a better idea of who you are."

Individual task. Subsequently, experimenters told participants that they would complete a warm-up task individually before the collaborative task with their partner. To increase engagement, experimenters told participants that performance on the individual task would impact their overall team score, which determined whether the team would win two \$50 gift cards. Participants completed the individual task for 5 minutes (i.e., 12 Graduate Record Examination questions). This task also provided an initial motivated performance situation, which is necessary to examine participants' cardiovascular responses (see below).

Collaborative task anticipation and post-task questionnaires. Experimenters then asked participants to wait 5 minutes before the interaction could begin to allow for scoring of the individual task. During this time, while participants were anticipating the interaction, experimenters recorded participants' cardiovascular responses. Participants then completed measures of affect and a manipulation check. We also measured additional aspects of participants' experiences that are tangential to threat (i.e., participants' impressions of the task,

perceptions of their partner, and how they would like their partner to perceive them). See the Supplemental Materials for detailed descriptions and analyses.

Measures.

Participant social class background. We measured participants' social class backgrounds using their parents' educational attainment and family income. We measured parental educational attainment using six categories: (1) Less than high school, (2) High school diploma, (3) Some college, (4) Two-year college degree (e.g., Associates), (5) 4-year college degree (B.A. or B.S.), (6) Professional degree (MD., Ph.D., J.D., M.B.A., etc.). Family income was measured using four categories: (1) Less than \$100,000 (2) \$100,000-\$200,000 (3) \$200,000-\$300,000, (4) Over \$300,000³. We computed participants' social class backgrounds by standardizing and then averaging their parents' educational attainment and family income, $M = 0.02$, $SD = 0.88$. To provide more insight into what it means to be high and low on this composite, we examined participants at 1 SD above and below the mean of our social class background composite. Scores at 1 SD above the mean correspond to having at least one parent who had a 4-year degree and an average family income of at least \$200,000 and scores at 1 SD below the mean correspond to having neither parent who had a 4-year degree and an average family income of less than \$100,000. Thus, although we recruited participants from higher and lower social class backgrounds using only parental educational attainment, participants' family income was consistent with these designations.

Threat-challenge index. To measure threat, we followed the biopsychosocial model, which holds that the experience of threat (vs. challenge) reliably leads to specific patterns of

³ We measured participants' social class background using their responses to the introduction questionnaire that was ostensibly exchanged with their partner. We used these broad income categories because we were concerned that more fine-grained categories would be perceived as intrusive and non-normative (e.g., Trachtman, 1999).

cardiovascular responses during motivated performance situations (e.g., Blascovich & Mendes, 2000). We recorded cardiovascular responses noninvasively following established guidelines (e.g., Sherwood et al., 1990; see the Supplemental Materials for details). Specifically, we measured participants' cardiac output (CO), i.e., the amount of blood pumped out of the heart, and total peripheral resistance (TPR), i.e., the overall vasoconstriction in the periphery of the body. Higher TPR and lower CO indicate greater threat relative to challenge (Blascovich & Mendes, 2000).

To support our assumption that the 5-minute interaction anticipation period was a motivated performance situation and adequately engaging for participants, we examined heart rate (HR) and left ventricle contractility (VC) reactivity. We created reactivity scores by subtracting participants' HR and VC during the last minute of baseline from their HR and VC during each of the 5 minutes of the anticipation period. We then created composites across these two sets of five reactivity scores and conducted one-sample t tests to compare the composites to zero to indicate task engagement (Mendes et al., 2002; Obrist, 1981). We found that VC reactivity was significantly greater than zero, $t_{VC}(152) = 3.57, p < .001$. Although HR reactivity was not significantly different from zero, $t_{HR}(178) = 1.53, p = .128$, it was in the right direction (i.e., above zero). We then followed previous research to calculate the threat-challenge index (e.g., Townsend, Major, Sawyer, & Mendes, 2010). First, we created reactivity scores for CO and TPR for each of the 5 minutes of the anticipation period. Then, we standardized these scores, subtracted CO from TPR for each minute, and then averaged across the 5 minutes to create a composite, $M = 0.01, SD = 1.56$.

Individual task performance. To create a motivated performance situation, which is necessary to examine participants' cardiovascular responses, participants completed an

individual task made up of twelve Graduate Record Examination (GRE) questions which included five verbal and seven math questions. We also measured participants' performance this task as the number of correct responses (Range 0 – 10, $M = 3.15$, $SD = 1.67$).

Affect. To measure affect, participants responded to an 11-item PANAS measure (Watson, Clark, & Tellegen, 1988) on a scale of 1 (*not at all*) to 7 (*very much*). Although research often fails to find correspondence between threat as assessed with cardiovascular measures and self-reported affect (e.g., Mendes et al., 2002; Townsend et al., 2010), we were interested in whether participants' affect might be influenced by anticipating a cross-class, compared to same-class, interaction. Following previous research, we measured positive affect (excited, inspired, in control, confident; $\alpha = .615$, $M = 3.82$, $SD = 0.94$), negative affect (nervous, distressed, worried, overwhelmed; $\alpha = .793$, $M = 2.49$, $SD = 1.16$), and vigilance (alert, attentive, hyper; $\alpha = .566$, $M = 3.97$, $SD = 1.00$; Townsend et al., 2010).

Manipulation check. To ensure that the manipulation was effective in conveying their partner's social class background, they reported their partner's parents' highest educational attainment (0 = *less than a 4-year college degree*, 1 = *4-year college degree or higher*).

Results

Analysis plan. In our primary analyses, we included covariates for race, gender, and body mass index (BMI; for the cardiovascular data only). We controlled for participants' race as a way of controlling for whether the anticipated interaction would be cross-race or same-race. That is, our confederates were White, so the interaction would be same-race for White participants but cross-race for non-White participants. We controlled for gender because there are gender differences in approaches to interpersonal interactions (Ansell, Kurtz, & Markey, 2008; Carli, 1989). Finally, we controlled for BMI because it is associated with cardiovascular

responses (Steptoe & Wardle, 2005). We conducted moderated regression analyses. On Step 1, we entered our covariates: race (0 = non-White, 1 = White), gender (0 = female, 1 = male), and BMI (mean-centered), for the cardiovascular measure only. We then entered condition (0 = lower social class partner, 1 = higher social class partner) and participants' social class background (mean-centered) on Step 2, and their interaction on Step 3. The significance and direction of results on the threat-challenge index and affect are unchanged when these covariates are not included (see the Supplemental Materials for the results to these analyses). The degrees of freedom vary between dependent variables because some participants' cardiovascular data were unscorable. We report key statistical results in the text and full statistical results in Table 1. For effect sizes, we report ΔR^2 for interaction effects and b for main effects and simple slopes.

Given that parental educational attainment has been shown to be predictive of outcomes in college and collaborative settings (e.g., Dittmann, Stephens, & Townsend, 2020; Snibbe & Markus, 2005; Stephens, Hamedani, & Destin, 2014), we began this research focusing on this as the sole indicator of social class background as footnoted above. However, we post hoc made the decision to focus on the composite measure of participants' social class background in order to more fully correspond to our manipulation of partners' social class backgrounds. Specifically, given that we used both parental educational attainment and income to indicate *partners'* social class backgrounds, we believe that using both to measure *participants'* backgrounds best enables us to examine experiences anticipating cross-class and same-class interactions. Importantly, we also conducted analyses using parental educational attainment alone as the measure of participants' social class backgrounds and find similar results for participants' experiences of threat. We report the results of these analyses on our threat measure below and on individual task performance and affect in the Supplemental Materials.

Running head: THREAT WHEN ANTICIPATING CROSS-CLASS INTERACTIONS

Table 1.
Moderated Regression Analyses for Dependent Variables (Study 1)

<i>Dependent Variables</i>							95% CI	
Predictor	<i>b</i>	<i>SE</i>	<i>t</i>	<i>df</i>	<i>p</i>	Lower	Upper	
<i>Threat-Challenge Index</i>								
BMI	0.00	.042	-0.03	122	.974	-0.09	0.08	
Gender	-0.23	.296	-0.77	122	.442	-0.82	0.36	
Race	0.27	.331	0.83	122	.409	-0.38	0.93	
Participant Social Class Background	0.53	.251	2.09	120	.038	0.03	1.02	
Condition	-0.40	.279	-1.44	120	.154	-0.95	0.15	
Condition × Social Class Background	-0.76	.328	-2.30	119	.023	-1.40	-0.11	
<i>Performance</i>								
Gender	0.37	.237	1.56	211	.120	-0.10	0.84	
Race	0.65	.274	2.37	211	.019	0.11	1.19	
Participant Social Class Background	0.58	.190	3.03	209	.003	0.20	0.95	
Condition	-0.23	.222	-1.01	209	.312	-0.66	0.21	
Condition × Social Class Background	-0.40	.256	-1.55	208	.124	-0.90	0.11	
<i>Positive Affect</i>								
Gender	0.35	.137	2.57	211	.011	0.08	0.62	
Race	0.07	.158	0.45	211	.657	-0.24	0.38	
Participant Social Class Background	-0.12	.108	-1.15	209	.251	-0.34	0.89	
Condition	-0.11	.128	-0.87	209	.388	-0.36	0.14	
Condition × Social Class Background	0.23	.147	1.55	208	.122	-0.06	0.52	
<i>Negative Affect</i>								
Gender	-0.09	.169	-0.54	211	.590	-0.42	0.24	
Race	-0.28	.195	-1.44	211	.150	-0.66	0.10	
Participant Social Class Background	-0.34	.133	-2.58	209	.010	-0.61	-0.08	
Condition	0.02	.158	0.11	209	.915	-0.29	0.33	
Condition × Social Class Background	0.25	.182	1.40	208	.164	-0.10	0.61	
<i>Vigilance</i>								

Gender	0.16	.149	1.09	211	.277	-0.13	0.46
Race	0.17	.172	0.99	211	.326	-0.17	0.51
Participant Social Class Background	-0.05	.118	-0.40	209	.688	-0.28	0.19
Condition	-0.03	.139	-0.25	209	.805	-0.31	0.24
Condition × Social Class Background	0.14	.161	0.87	208	.383	-0.18	0.46

Note. BMI = body mass index. For the threat-challenge index, Step 1 included the covariates of BMI (mean-centered), gender (0 = female, 1 = male), and race (0 = non-White, 1 = White), Step 2 included condition (0 = lower social class partner, 1 = higher social class partner) and participants' social class background (mean-centered), and Step 3 included their interaction. For remaining variables, Step 1 included the covariates of gender and race, Step 2 included condition and participants' social class background, and Step 3 included their interaction.

Manipulation check. Our manipulation was successful: 98% of participants in the lower social class partner condition and 97% of participants in the higher social class partner condition correctly indicated their partner's parental educational attainment. As mentioned above, there were no significant differences by condition, $\chi^2(1, N = 228) = 0.33, p = .567$.

Threat-challenge index. Due to loss of cardiovascular data, our sample for threat-challenge index is only $N = 127$, despite recruiting participants who indicated that neither parent had a 4-year college degree over three semesters and stopping data collection only after this pool of participants was exhausted. With this smaller sample size, we conducted additional sensitivity analyses, which indicated that we had 80% power to detect an interaction effect size of $R^2 = .071$ and 80% power to detect a simple slope effect size of $R^2 = .059$. Our moderated regression analysis revealed no significant main effect of condition, $t(120) = -1.44, b = -0.40, 95\% \text{ CI} [-0.95, 0.15], p = .154$, but a significant main effect of participants' social class background such that participants from higher social class backgrounds (those 1 *SD* above the mean of the social class background composite) exhibited greater threat than participants from lower social class backgrounds (those 1 *SD* below the mean of the social class background composite), $t(120) = 2.09, b = 0.53, 95\% \text{ CI} [0.03, 1.02], p = .038$. Importantly, the condition by social class background interaction was significant, $F(1, 119) = 5.29, b = -0.76, 95\% \text{ CI} [-1.40, -0.11], \Delta R^2 = .041, p = .023$ (see Fig. 1). Although we are underpowered to detect an interaction effect of this size, we moved forward to examine the simple slopes, which test our hypotheses. Consistent with our prediction, participants from higher social class backgrounds experienced greater threat when anticipating an interaction with a partner from a lower social class background (i.e., a downward cross-class interaction) than when anticipating an interaction with a partner from a higher social class background (i.e., a same-class interaction), $b = -1.11, 95\% \text{ CI} [-1.92, -0.32]$,

$\Delta R^2 = .060, p = .007$. However, participants from lower social class backgrounds exhibited similar levels of threat across conditions, $b = 0.19, 95\% \text{ CI } [-0.59, 0.96], \Delta R^2 = .002, p = .635$.

In addition, participants from higher social class backgrounds experienced significantly greater threat than participants from lower social class backgrounds when anticipating interacting with a partner from a lower social class background, $b = 0.53, 95\% \text{ CI } [0.03, 1.02], \Delta R^2 = .034, p = .038$. However, participants from higher and lower social class backgrounds exhibited similar levels of threat when anticipating interacting with a partner from a higher social class background, $b = -0.23, 95\% \text{ CI } [-0.65, 0.19], \Delta R^2 = .009, p = .283$.

Finally, we also examined experiences of threat using parental educational attainment as the sole indicator of participants' social class backgrounds and found similar results. Specifically, we categorized participants who indicated that neither parent had a 4-year degree as being from lower social class backgrounds and participants who indicated that at least one parent had a 4-year degree as being from higher social class backgrounds. To examine participants' experiences of threat in cross-class interactions, we conducted a 2×2 univariate analysis of variance: condition (0 = lower social class partner, 1 = higher social class partner) by participants' social class background (0 = participants from lower social class background, 1 = participants from higher social class backgrounds). We included the same covariates as above, race (0 = non-White, 1 = White), gender (0 = female, 1 = male), and body mass index (BMI; mean-centered). We found a significant condition by social class background interaction on threat, $F(1, 120) = 4.39, \eta_p^2 = .035, p = .038$. Consistent with our predictions, we found that participants from higher social class backgrounds exhibited greater threat when anticipating an interaction with a partner from a lower social class background ($M = 0.73, SD = 1.32$) than a partner from a higher social class background ($M = -0.28, SD = 1.66$), $F(120) = 6.87, 95\% \text{ CI}$

[0.25, 1.78], $\eta^2 = .054$, $p = .010$. In contrast, participants from lower social class backgrounds exhibited similar levels of threat across conditions, $F(120) = 0.12$, 95% CI [-0.64, 0.91], $\eta^2 = .001$, $p = .728$. See the Supplemental Materials for the full results of these analyses.

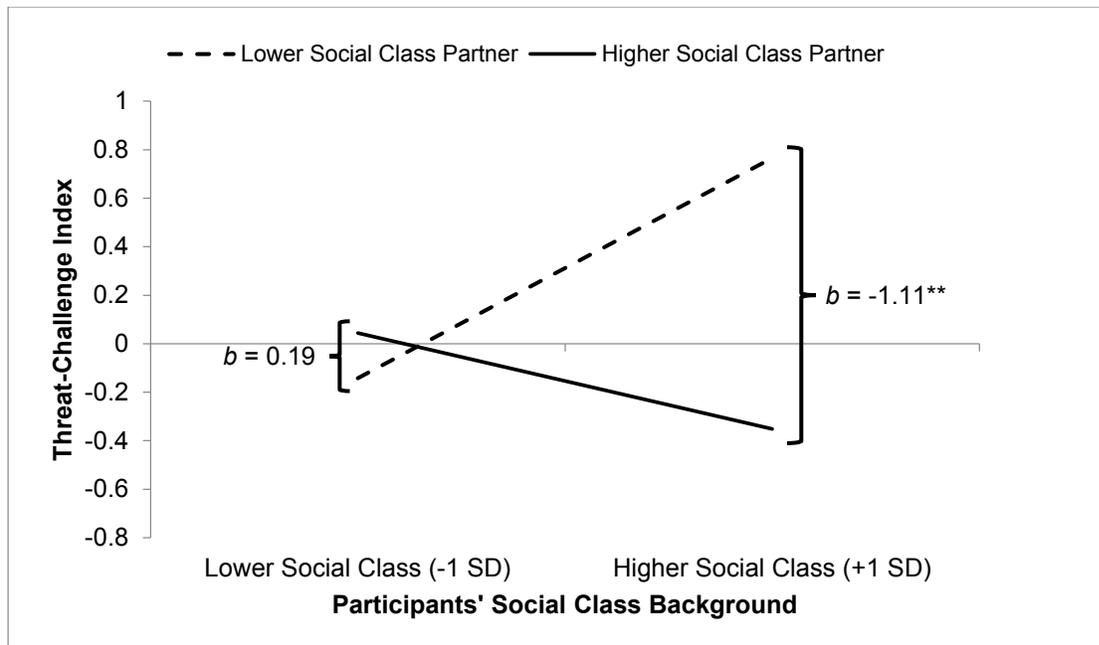


Fig. 1. Threat-challenge index during anticipation period as a function of condition (0 = lower social class partner, 1 = higher social class partner) and participant social class background (mean-centered) interaction on the threat-challenge index, controlling for gender (0 = female, 1 = male), race (0 = non-White, 1 = White), and body mass index (mean-centered). Graphed at ± 1 *SD* from the mean on the composite measure of participants' social class background. Larger values indicate greater threat relative to challenge for the threat-challenge index. ** $p < .01$.

Individual task performance. We conducted exploratory analyses on participants' performance on the individual task. We found no significant main effect of condition, $t(209) = -1.01$, $b = -0.23$, 95% CI [-0.66, 0.21], $p = .312$. However, we did find a significant main effect of participants' social class background, $t(209) = 3.03$, $b = 0.58$, 95% CI [0.20, 0.95], $p = .003$, such that participants from higher social class backgrounds performed better than participants from lower social class backgrounds. We did not find a significant condition by social class background interaction, $F(1, 208) = 2.39$, $b = -0.40$, 95% CI [-0.90, 0.11], $\Delta R^2 = .010$, $p = .124$.

Affect. Among our positive affect, negative affect, and vigilance measures, the only significant effect we found was a main effect of participants' social class background on negative affect, $t(209) = -2.58$, $b = -0.34$, 95% CI [-0.61, -0.08], $p = .010$, such that participants from

higher social class backgrounds reported lower negative affect than participants from lower social class backgrounds. There were no other significant main or interactive effects, $F_s < 2.41$, $p_s > .122$.

Discussion

Consistent with our theorizing, participants from higher social class backgrounds exhibited greater threat when anticipating interacting with a partner from a lower versus higher social class background. In contrast, participants from lower social class backgrounds showed similar levels of threat across conditions. Our results are robust when using the composite measure of social class background or the parental educational attainment measure of social class background. These findings are consistent with the second of our suggested possibilities and advance our understanding of how experiences of threat in cross-class and cross-race interactions may differ.

For individual task performance and negative affect, we found only main effects of social class background. Higher social class background was associated with better performance and lower negative affect. Although these results do not mirror our threat results, the social class performance difference is consistent with previous work (e.g., Duncan & Murnane, 2014) and the lack of correspondence between self-reported affect and cardiovascular measures is relatively common (Mendes et al., 2002; Townsend et al., 2010).

In Study 2, we sought to build on our threat findings that used a cardiovascular measure of threat and provide convergent evidence for these results by using a different measure: a self-report measure of threat that instructs participants to think about what it would be like to work with their partner. Additionally, we aimed to understand why anticipating downward cross-class interactions is more threatening than same-class interactions. Considering that people from

higher social class backgrounds have high status in cross-class interactions, similar to White Americans in cross-race interactions, we focus on potential mediators that have been examined in research on cross-race interactions. Specifically, we examined two potential mediators: “status concerns” and “concerns about appearing overprivileged.” First, people from higher social class backgrounds may have status concerns that their high status is not secure because their partner, who is a member of a low-status group, may challenge their own higher status (e.g., Sidanius & Pratto, 1993). Second, people from higher social class backgrounds may also have concerns about appearing overprivileged—that is they may worry that their partners will perceive them as being overprivileged because they have higher status than their partner from a lower social class background.

Study 2

Method

Participants. We recruited 307 first-year college students over two semesters. As in Study 1, we recruited participants based on their parental educational attainment alone as this was the only available, complete indicator (i.e., we had incomplete family income data). Specifically, to recruit participants from lower social class backgrounds, we recruited students who indicated that neither parent had a 4-year college degree ($n = 159$). To recruit participants from higher social class backgrounds, we recruited a similar number of students who indicated that at least one parent had a 4-year college degree ($n = 148$). We excluded two participants who participated in Study 1 and two due to procedural errors. In addition, we excluded 13 who failed our manipulation check by incorrectly recalling their partners’ social class background (no significant differences by condition, $\chi^2(1, N = 307) = 0.74, p = .389$). To maintain greater power, we included three participants who left manipulation check items unanswered. Excluding these

participants does not change the significance or direction of our results. Our final sample was 290 participants. We conducted the same sensitivity power analyses as in Study 1, which indicated that we had 80% power to detect an interaction effect size of $R^2 = .033$ and 80% power to detect a simple slope effect size of $R^2 = .027$. We pre-registered this study on Open Science Foundation (https://osf.io/9f2ws/?view_only=5b8ee52cf69446e7856fee062086a3f5).

Procedure. The procedure was largely identical to Study 1 with three exceptions: participants were not connected to cardiovascular recording equipment because we measured threat through self-report, introductions were conducted via audio not video, and participants were given 8 minutes instead of 5 minutes to complete the individual task.

Manipulation and audio introductions. Participants filled out the introduction questionnaire and saw their partner's social class background as in Study 1 (condition was randomly assigned). Then, participants listened to their partner's prerecorded 1-minute introduction, which used the same script as Study 1. Afterward, participants gave their own 1-minute audio introduction.

Individual task. As in Study 1, experimenters told participants that performance on the individual task would impact their overall team score, which would determine whether the team would win two \$50 gift cards. Subsequently, participants completed the individual task for 8 minutes. We gave participants 8 minutes instead of 5 minutes, as we did in Study 1, in an attempt to increase variance in performance.⁴

Collaborative task anticipation. Following the task, participants reported their demand and resource appraisals with respect to working with their partner on the anticipated collaborative task (e.g., Mendes, Gray, Mendoza-Denton, Major, & Epel, 2007). Finally, to gain

⁴ Study 1 analyses without covariates revealed a marginal interaction on individual task performance (see Supplemental Materials). Therefore, in Study 2, we preregistered hypotheses for this dependent variable.

insight into why people from higher social class backgrounds might experience greater threat when they anticipate a cross-class versus same-class interaction, participants reported their status concerns and concerns about appearing overprivileged (e.g., Pettit & Lount, Jr., 2010).

In addition to our primary measures, we measured exploratory outcomes (i.e., warm-up task performance, perceptions of threat regarding the individual task, and subjective status). See the Supplemental Materials for detailed descriptions and analyses.

Measures.

Participant social class background. We measured participants' social class backgrounds as in Study 1, $M = 0.00$, $SD = 0.86$. Similar to Study 1, we examined participants at 1 SD above and below the mean of our social class background composite. Scores at 1 SD above the mean correspond to having at least one parent who had a 4-year degree and an average family income of at least \$200,000 and scores at 1 SD below the mean correspond to having neither parent who had a 4-year degree and an average family income of less than \$100,000. By using a composite of parental educational attainment and income to operationalize social class background, we deviated from our pre-registration, which focused solely on parental educational attainment. As mentioned above, we made this decision post hoc in order to more fully correspond to our manipulation of partners' social class backgrounds, which used both parental educational attainment and family income. Using the composite allows us to more precisely examine cross-class versus same-class interactions.

Manipulation check. Participants completed the same manipulation check as Study 1.

Threat. To measure threat regarding the upcoming interaction, participants answered questions "regarding your expectations of what it will be like to interact with your partner as you two work on the collaborative task." Then, participants reported their demand and resource

appraisals of “the upcoming task of working together with [their] partner.” Specifically, participants completed 10 items adapted from Mendes and colleagues (2007) on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). Five items assessed demand appraisals (e.g., “This task is threatening”), $\alpha = .746$, $M = 3.56$, $SD = 1.08$. Five items assessed resource appraisals (e.g., “This task is a positive challenge”), $\alpha = .750$, $M = 4.48$, $SD = 0.98$. Following Mendes and colleagues (2007), we created a threat ratio by dividing demand appraisals by resource appraisals. Larger values on this ratio indicate greater threat, $M = 0.84$, $SD = 0.35$.

Individual task performance. To examine performance effects, participants completed the same individual task consisting of the twelve GRE questions from Study 1. We measured performance on the individual task as the number of correct responses (Range 0 – 8, $M = 2.82$, $SD = 1.68$). To maintain power, we included 5 participants who had 5 minutes instead of 8 minutes to complete the individual task. Excluding these participants does not change the significance or direction of results.

Status concerns. To examine status concerns, participants responded to the following item: “How important is it to you that you maintain your current status at USC?” using a scale of 1 (*not at all*) to 7 (*very much so*), $M = 5.15$, $SD = 1.77$.

Concerns about appearing overprivileged. To measure concerns about appearing overprivileged, participants responded to the following item: “I worry that my partner may think that I am over-privileged” on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*), $M = 2.44$, $SD = 1.74$.

Results

Analysis plan. For all dependent variables, we conducted moderated regression analyses as described in Study 1. We included our standard covariates (i.e., race and gender) for all

analyses and also included self-reported SAT or ACT scores for analyses of individual task performance. Following the College Board Concordance Guide (2018), we converted ACT scores into SAT scores. We assigned these scores to participants who only reported their ACT scores and assigned participants their best score if they reported both. As mentioned in our preregistration, we included this covariate to control for individual ability.⁵ We report key statistical results in the text and full statistical results in Table 2. Similar to Study 1, in addition to using our social class background composite, we report the results of analyses using solely parental educational attainment as the measure of participants' social class backgrounds (i.e., our preregistered analyses). We report the results of these analyses on our threat measure below. In addition, in the Supplemental Materials, we report the results of these analyses on individual task performance, status concerns, and concerns about appearing overprivileged, as well as the preregistered moderated mediation analyses. As in Study 1, we find similar results across the two measures of social class background.

⁵ The degrees of freedom were lower on the individual task performance analyses because 53 participants did not report their SAT or ACT score.

Running head: THREAT WHEN ANTICIPATING CROSS-CLASS INTERACTIONS

Table 2.
Moderated Regression Analyses for Dependent Variables (Study 2)

<i>Dependent Variables</i>							95% CI	
Predictor	<i>b</i>	<i>SE</i>	<i>t</i>	<i>df</i>	<i>p</i>	Lower	Upper	
<i>Threat</i>								
Gender	-0.11	.042	-2.54	285	.012	-0.19	-0.02	
Race	-0.08	.051	-1.55	285	.123	-0.18	0.02	
Participant Social Class Background	0.07	.035	2.14	283	.033	-0.01	0.14	
Condition	-0.06	.041	-1.52	283	.130	-0.14	0.02	
Condition × Social Class Background	-0.12	.047	-2.45	282	.015	-0.21	-0.02	
<i>Individual Task Performance</i>								
Gender	0.18	.203	0.88	287	.382	-0.22	0.58	
Race	-0.20	.243	-0.81	287	.418	-0.68	0.28	
Participant Social Class Background	0.21	.167	1.27	285	.205	-0.12	0.54	
Condition	-0.01	.195	-0.06	285	.951	-0.39	0.37	
Condition × Social Class Background	0.29	.227	1.28	284	.202	-0.16	0.74	
<i>Status Concerns</i>								
Gender	0.27	.216	1.27	285	.204	-0.15	0.70	
Race	0.28	.260	1.09	285	.277	-0.23	0.80	
Participant Social Class Background	0.25	.178	1.39	283	.167	-0.10	0.60	
Condition	0.34	.207	1.63	283	.104	-0.07	0.74	
Condition × Social Class Background	-0.17	.241	-0.69	282	.489	-0.64	0.31	
<i>Concerns about appearing overprivileged</i>								
Gender	-0.27	.186	-1.45	276	.147	-0.64	0.10	
Race	0.34	.225	1.50	276	.136	-0.11	0.78	
Participant Social Class Background	1.02	.151	6.70	274	<.001	0.72	1.31	
Condition	-0.81	.178	-4.54	274	<.001	-1.16	-0.46	
Condition × Social Class Background	-0.25	.207	-1.02	273	.231	-0.66	0.16	

Note. Step 1 included gender (0 = female, 1 = male) and race (0 = non-White, 1 = White) as covariates, Step 2 included the condition (0 = lower social class partner, 1 = higher social class partner) and participants' social class background (mean-centered), and Step 3 included their interaction.

Manipulation check. Our manipulation was successful: 97% of participants in the lower social class partner condition and 95% of participants in the higher social class partner condition correctly indicated their partner's parental educational attainment. As mentioned above, there were no significant differences by condition, $\chi^2(1, N = 307) = .743, p = .389$.

Threat during collaborative task anticipation. Our moderated regression analysis revealed no significant main effect of condition, $t(283) = -1.52, b = -0.06, 95\% \text{ CI} [-0.14, 0.02], p = .130$, but a significant main effect of participants' social class background such that participants from higher social class backgrounds reported greater threat than participants from lower social class backgrounds, $t(283) = 2.14, b = 0.07, 95\% \text{ CI} [-0.01, 0.14], p = .033$. Importantly, we found a significant condition by social class background interaction, $F(1, 282) = 6.01, b = -0.12, 95\% \text{ CI} [-0.21, -0.02], \Delta R^2 = .020, p = .015$ (see Fig. 2). Although we recruited participants for a full academic year and achieved a larger sample size than Study 1, this interaction effect is still underpowered due to the smaller effect size than Study 1. However, based on the sensitivity power analysis for the simple slopes, which were the more exact tests of our hypotheses, Study 2 was only slightly underpowered. We find that, consistent with Study 1 and our predictions, participants from higher social class backgrounds reported greater threat when anticipating interacting with a partner from a lower social class background compared to partner from a higher social class background, $b = -0.16, 95\% \text{ CI} [-0.27, -0.05], \Delta R^2 = .026, p = .005$. In contrast, but also consistent with our predictions, participants from lower social class backgrounds reported similar levels of threat across both conditions, $b = 0.04, 95\% \text{ CI} [-0.08, 0.15], \Delta R^2 = .001, p = .505$.

In addition, participants from higher social class backgrounds reported greater threat than participants from lower social class backgrounds when anticipating interacting with a partner

from a lower social class background, $b = 0.08$, 95% CI [0.01, 0.14], $\Delta R^2 = .015$, $p = .033$.

However, among participants from higher and lower social class backgrounds reported similar levels of threat when anticipating interacting with a partner from a higher social class background, $b = -0.04$, 95% CI [-0.11, 0.02], $\Delta R^2 = .007$, $p = .209$.

Finally, we found similar results when we examined experiences of threat using parental educational attainment as the sole indicator of participants' social class backgrounds, as we hypothesized in our pre-registration. We categorized participants who indicated that neither parent had a 4-year degree as being from lower social class backgrounds and participants who indicated that at least one parent had a 4-year degree as being from higher social class backgrounds. We conducted a 2×2 univariate analysis of variance: condition (0 = lower social class partner, 1 = higher social class partner) by participants' social class background (0 = participants from lower social class background, 1 = participants from higher social class backgrounds). We included the same covariates as above (i.e., race, gender).⁶ Although the condition by social class background interaction on threat was not significant, $F(1, 282) = 2.43$, $\eta_p^2 = .009$, $p = .120$, the simple effects were consistent with our hypotheses. Specifically, participants from higher social class backgrounds reported greater threat when anticipating an interaction with a partner from a lower social class background ($M = 0.93$, $SD = 0.46$) than a partner from a higher social class background ($M = 0.81$, $SD = 0.30$), $F(282) = 4.94$, 95% CI [0.02, 0.25], $\eta_p^2 = .017$, $p = .027$. In contrast, participants from lower social class backgrounds reported similar levels of threat across conditions, $F(282) = 0.003$, 95% CI [-0.12, 0.11], $\eta_p^2 < .001$, $p = .959$.

⁶ We ran these analyses on individual task performance, status concerns, and concerns about appearing overprivileged. We report the results of these pre-registered analyses in the Supplemental Materials.

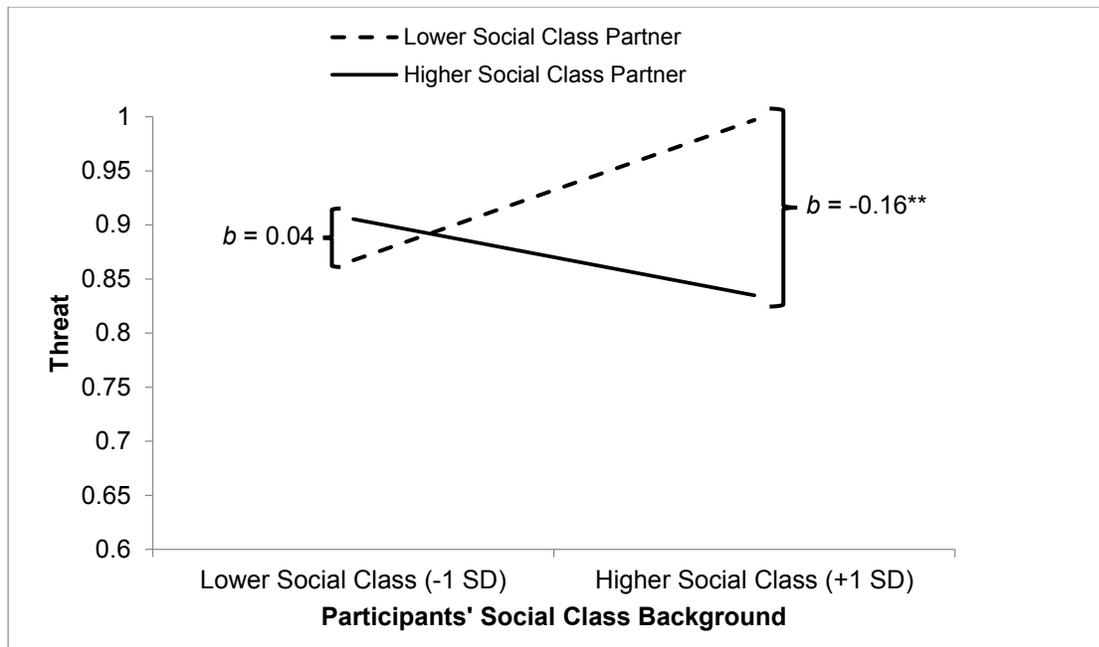


Fig. 2. Reported threat regarding the anticipated interaction as a function of condition (0 = lower social class partner, 1 = higher social class partner) and participant social class background (mean-centered) controlling for gender (0 = female, 1 = male) and race (0 = non-White, 1 = White). Graphed at ± 1 SD from the mean on the composite measure of participants' social class background. Larger values indicate greater threat. ** $p < .01$.

Individual task performance. We did not find any significant effects for participants' performance on the individual task: main effect of condition, $t(230) = -0.57$, $b = -0.12$, 95% CI [-0.28, 0.51], $p = .569$, main effect of participants' social class background, $t(230) = -0.13$, $b = -0.02$, 95% CI [-0.36, 0.32], $p = .898$, or interaction, $F(1, 229) = 0.95$, $b = 0.23$, 95% CI [-0.23, 0.69], $\Delta R^2 = .003$, $p = .332$.

Status concerns. We did not find any significant effects for participants' concerns about maintaining their status: main effect of condition, $t(283) = 1.63$, $b = 0.34$, 95% CI [-0.07, 0.74], $p = .104$, main effect of participants' social class background, $t(283) = 1.39$, $b = 0.25$, 95% CI [-0.10, 0.60], $p = .167$, significant interaction, $F(1, 282) = 0.48$, $b = -0.17$, 95% CI [-0.64, 0.31], $\Delta R^2 = .002$, $p = .489$.

Concerns about appearing overprivileged. We found a significant main effect of condition such that participants in the lower social class partner condition reported greater concerns about appearing overprivileged than participants in the higher social class partner condition, $t(274) = -4.54$, $b = -0.81$, 95% CI [-1.16, -0.46], $p < .001$. We also found a significant main effect of participants' social class background such that participants from higher social class backgrounds reported greater concerns about appearing overprivileged than participants from lower social class backgrounds, $t(274) = 6.70$, $b = 1.02$, 95% CI [0.72, 1.31], $p < .001$. However, we did not find a significant interaction, $F(1, 273) = 1.44$, $b = -0.25$, 95% CI [-0.66, 0.16], $\Delta R^2 = .003$, $p = .231$.⁷

Discussion

Consistent with our predictions and Study 1, participants from higher social class backgrounds reported greater threat anticipating a cross-class, compared to a same-class, interaction, and participants from lower social class backgrounds reported similar threat levels anticipating these two interactions. As in Study 1, we find this pattern of results across both measures of social class background (i.e., the composite measure of social class background and the parental educational attainment measure). Although Study 2 was still slightly underpowered to detect the interaction effect, several factors support the robustness of our findings: our high-impact study design, the consistency with Study 1, and adequate power to detect the simple slopes effect of condition among participants from higher social class backgrounds. Additionally, our pre-registered directional predictions were supported (i.e., the simple effects using parental educational attainment as our measure of social class background). We found no significant

⁷ Given that we did not find an interaction on our proposed mediators: status concerns and concerns about appearing overprivileged, we did not conduct moderated mediation analyses. We find the same results with our preregistered measure of social class background. Given that we preregistered the moderated mediation analyses using this measure, we report the results of these analyses in the Supplemental Materials.

effects predicting individual task performance nor status concerns. We found greater concern about appearing overprivileged among participants from higher, versus lower, social class backgrounds and among participants anticipating interacting with someone from a lower, versus higher, social class background. However, similar to the other potential mediator, status concerns, we found no interactive effects predicting concerns about appearing overprivileged.

General Discussion

In two time-intensive and high-impact laboratory studies, using cardiovascular and self-report measures, we found that experiences of threat when anticipating cross-class, compared to same-class, interactions are not bidirectional (i.e., high-status and low-status groups do not both experience threat). Specifically, people from higher social class backgrounds experienced greater threat when anticipating interacting with someone from a lower, versus similar, social class background. Across our studies, this finding emerged when using both the composite measure and the parental educational attainment measure of social class background. This experience of greater threat suggests one possible reason why people from higher social class backgrounds may avoid cross-class interactions. In turn, this avoidance may limit the frequency of these interactions and the important benefits they can produce (e.g., Carey, Stephens, Townsend, & Hamedani, 2020; Lessard & Juvonen, 2019). This finding mirrors research showing that members of higher status racial groups experience greater threat in cross-race versus same-race interactions (e.g., Trawalter, Richeson, & Shelton, 2009) and suggests that members of many high-status groups may experience downward *cross-group* interactions as threatening.

In contrast, people from lower social class backgrounds experienced similar levels of threat when anticipating interacting with someone from a higher versus similar social class background. Again, we found this result in both studies and when using both measures of social

class background. This finding *differs* from research showing that members of lower status racial groups experience greater threat in cross-race versus same-race interactions (e.g., Page-Gould et al., 2008; Stephan & Stephan, 1985). These results imply that although race and social class both confer status and are meaningful social identities, crossing social class status divides can impact experiences of threat in ways that are distinct from race. Thus, members of lower status groups may vary in the degree to which they are threatened in upward cross-group interactions.

In the present research, we are the first to directly examine experiences of threat when anticipating cross-class interactions and make several contributions. First, we contribute to intergroup relations research by demonstrating that, despite similar status differences, findings from one type of cross-group interaction may not generalize to another type (Allen & Uskul, 2019; Apfelbaum, Stephens, Reagans, 2016). Second, by showing that people experience threat prior to cross-class interactions, our work temporally extends interactions to include the anticipation of them. Given that cross-group interactions can improve intergroup relations, developing strategies to reduce this experience of threat during anticipation may play an important role in increasing cross-class interactions (e.g., Page-Gould et al., 2008). For example, teaching people to reappraise their physiological arousal as positive or adaptive, which benefits performance under stereotype-threat (e.g., Jamieson, Mendes, & Nock, 2012), may reduce experiences of threat when anticipating a cross-class interaction. Finally, we contribute to the literature on the psychology of social class and reveal that being from lower social class backgrounds may buffer people from threat when crossing the class divide. That is, our findings suggest that people from lower social class backgrounds may be relatively resilient in potentially threatening interpersonal contexts (e.g., Townsend et al., 2014).

Limitations and Future Directions

Our work also leaves important questions for future research. For instance: why are people from lower social class backgrounds *not* more threatened when anticipating cross-class versus same-class interactions? As discussed, given the perceived malleability of social class (Kraus & Keltner, 2013), it is possible that people from lower social class backgrounds may not believe that they are likely to be targets of prejudice. Additionally, we also theorize that because people from lower social class backgrounds may be more resilient in potentially stressful interactions (e.g., Townsend et al., 2014), it is possible that they may simply not be threatened by the notion that they will be targets of prejudice. Another possibility is that people from lower social class backgrounds, particularly college students, have frequent experience with cross-class interactions. While this is likely, students who are racial minorities are also likely to have significant cross-race experience, but still show greater threat in cross-race versus same-race interactions (Plant, 2004; Trawalter et al., 2009). Future work is needed to disentangle these possibilities.

Additionally, our participants were undergraduates who anticipated interacting with another student while working on a collaborative task (i.e., a task that requires working with others towards a shared goal). Collaborative and competitive tasks require different behaviors and are experienced differently (e.g., Dittmann et al., 2020; Kraus & Mendes, 2014). Importantly, these tasks are not class-neutral. For instance, new research suggests that, compared to people from higher social class backgrounds, people from lower social class backgrounds may be more practiced at and feel more comfortable when working with others toward a shared goal (Dittmann et al., 2020). Future research should examine how the level of collaboration versus

competition required by the interaction might affect experiences of threat. Future work might also fruitfully examine cross-class interactions among non-student samples and in dyads in which a power difference exists (e.g., supervisor-employee interactions). Finally, our studies examined experiences of threat when people are anticipating face-to-face cross-class interactions and not when people are engaging in them. Although we expect that experiences of threat during anticipation and participation will be highly correlated (Bijleveld, Scheepers, & Ellemers, 2012), future research should extend this work to examine these experiences when people are participating in face-to-face cross-class interactions.

Conclusion

Social class plays an important role in people's lives (e.g., Bourdieu, 1977; Stephens, Markus, & Townsend, 2007) and confers status differences among groups (e.g., Pitesa et al., 2017). Across two studies, we find that whether an anticipated cross-class interaction is directed up or down the social class status hierarchy shapes people's experiences of threat. People from higher social class backgrounds experience greater threat in cross-class, compared to same-class, interactions. However, people from lower social class backgrounds experience similar levels of threat in cross-class and same-class interactions. These results suggest that experiences of threat in cross-class interactions are distinct from cross-*race* interactions and emphasize the necessity of examining various social groups in order to fully understand cross-group interactions. Additionally, despite their lower status, people from lower social class backgrounds may be undaunted by the prospect of cross-group interactions and undeterred as they reach across the class divide.

References

- Allen, C. K., & Uskul, A. K. (2019). Preference for dating out-group members: Not the same for all out-groups and cultural backgrounds. *International Journal of Intercultural Relations, 68*, 55-66.
- Ansell, E. B., Kurtz, J. E., & Markey, P. M. (2008). Gender differences in interpersonal complementarity within roommate dyads. *Personality and Social Psychology Bulletin, 34*(4), 502-512.
- Apfelbaum, E. P., Stephens, N. M., & Reagans, R. E. (2016). Beyond one-size-fits-all: Tailoring diversity approaches to the representation of social groups. *Journal of Personality and Social Psychology, 111*(4), 547.
- Bijleveld, E., Scheepers, D., & Ellemers, N. (2012). The cortisol response to anticipated intergroup interactions predicts self-reported prejudice. *PloS One, 7*, e33681. <http://dx.doi.org/10.1371/journal.pone.0033681>.
- Blascovich, J., & Mendes, W. B. (2000). Challenge and threat appraisals: The role of affective cues. In J. P. Forgas (Ed.), *Feeling and thinking: The role of affect in social cognition* (pp. 59-82). New York, NY: Cambridge University Press.
- Blascovich, J., Mendes, W. B., Hunter, S. B., Lickel, B., & Kowai-Bell, N. (2001). Perceiver threat in social interactions with stigmatized others. *Journal of Personality and Social Psychology, 80*, 253.
- Bourdieu, P. (1977). Cultural reproduction and social reproduction. In J. Karabel & A. H. Halsey (Eds.), *Power and ideology in education*. New York, NY: Oxford University Press.
- Brooks, A. W. (2014). Get excited: Reappraising pre-performance anxiety as excitement. *Journal of Experimental Psychology: General, 143*(3), 1144.

- Carey, R. M., Stephens, N. M., Townsend, S. S. M., & Hamedani, M. G. (2020). Cross-race and cross-class interactions in higher education settings. *Manuscript in preparation*.
- Carli, L. L. (1989). Gender differences in interaction style and influence. *Journal of Personality and Social Psychology*, *56*(4), 565.
- Concordance. (2018, July 10). Retrieved from <https://collegereadiness.collegeboard.org/educators/higher-ed/scoring/concordance>
- Côté, S., Kraus, M. W., Carpenter, N. C., Piff, P. K., Beermann, U., & Keltner, D. (2017). Social affiliation in same-class and cross-class interactions. *Journal of Experimental Psychology: General*, *146*(2), 269-285.
- Davies, K., Tropp, L. R., Aron, A., Pettigrew, T. F., & Wright, S. C. (2011). Cross-group friendships and intergroup attitudes: A meta-analytic review. *Personality and Social Psychology Review*, *15*(4), 332-351.
- Dittmann, A. G., Stephens, N. M., & Townsend, S. S. M. (2020). When people from working-class contexts outperform people from middle-class contexts. *Journal of Personality and Social Psychology*.
- Duncan, O. D., Featherman, D. L., & Duncan, B. (1972). *Socio-economic background and achievement*. New York, NY: Seminar Press.
- Duncan, G.J., & Murnane, R.J. (2014). Growing Income Inequality Threatens American Education. *Phi Delta Kappan*, *95*, 8-14.
- Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior research methods*, *39*(2), 175-191.

- Jamieson, J., Nock, M.K., & Mendes, W.B. (2012). Mind over matter: reappraising arousal improves cardiovascular and cognitive responses to stress. *Journal of experimental psychology. General*, 141 3, 417-22.
- Kraus, M. W., & Keltner, D. (2013). Social class rank, essentialism, and punitive judgment. *Journal of Personality and Social Psychology*, 105(2), 247.
- Kraus, M. W., & Mendes, W. B. (2014). Sartorial symbols of social class elicit class-consistent behavioral and physiological responses: A dyadic approach. *Journal of Experimental Psychology: General*, 143(6), 2330–2340.
- Kraus, M. W., & Tan, J. J. (2015). Americans overestimate social class mobility. *Journal of Experimental Social Psychology*, 58, 101-111.
- Kraus, M. W., Piff, P. K., Mendoza-Denton, R., Rheinschmidt, M. L., & Keltner, D. (2012). Social class, solipsism, and contextualism: How the rich are different from the poor. *Psychological Review*, 119(3), 546–572.
- Krieger, N., Williams, D. R., & Moss, N. (1997). Measuring Social Class in U.S. Public Health Research: Concepts, Methodologies, and Guidelines. *Annual Review of Public Health*, 18, 341-378.
- Krieger, N., Williams, D. R., & Moss, N. E. (1997). Measuring Social Class in US Public Health Research: Concepts, Methodologies, and Guidelines. *Annual Review of Public Health*, 18(1), 341–378.
- Lessard, L. M., & Juvonen, J. (2019). Cross-class friendship and academic achievement in middle school. *Developmental Psychology*.
- Mendes, W. B., Blascovich, J., Lickel, B., & Hunter, S. (2002). Challenge and threat during social interactions with white and black men. *Personality and Social Psychology Bulletin*, 26(7), 939-952.

- Mendes, W. B., Gray, H. M., Mendoza-Denton, R., Major, B., & Epel, E. S. (2007). Why egalitarianism might be good for your health: Physiological thriving during stressful intergroup encounters. *Psychological Science, 18*(11), 991–998
- Mendoza-Denton, R., Page-Gould, E., & Pietrzak, J. (2006). In S. Levin & C. Van Laar (Eds.), *Stigma and Group Inequality: Social Psychological Perspectives. Mechanisms for Coping with Status-based Rejection Expectations*, pp. 151-169.
- Obrist, P. A. (1981). *Cardiovascular psychophysiology*. New York, NY: Plenum Press.
- Page-Gould, E., Mendoza-Denton, R., & Tropp, L. R. (2008). With a little help from my cross-group friend: Reducing anxiety in intergroup contexts through cross-group friendship. *Journal of Personality and Social Psychology, 95*(5), 1080–1094.
- Pettit, N. C., & Lount, R. B., Jr. (2010). Looking down and ramping up: The impact of status differences on effort in intergroup contexts. *Journal of Experimental Social Psychology, 46*, 9-20.
- Pitesa, M., Thau, S., & Pillutla, M. M. (2017). Workplace trust as a mechanism of employee (dis) advantage: The case of employee socioeconomic status. *Research in Organizational Behavior, 37*, 83-101.
- Plant, E. A. (2004). Responses to interracial interactions over time. *Personality and Social Psychology Bulletin, 30*(11), 1458-1471.
- Plant, E. A., & Devine, P. G. (2003). The Antecedents and Implications of Interracial Anxiety. *Personality and Social Psychology Bulletin, 29*(6), 790–801.
- Richeson, J. A., & Shelton, J. N. (2003). When Prejudice Does Not Pay: Effects of Interracial Contact on Executive Function. *Psychological Science, 14*(3), 287–290.

Sawyer, P., Major, B., Casad, B. J., Townsend, S. S. M., & Mendes, W. B. (2012).

Discrimination and the stress response: Psychological and physiological consequences of anticipating prejudice in interracial interaction. *American Journal of Public Health, 102*, 1020-1026.

Shelton, J. N., Richeson, J. A., & Salvatore, J. (2005). Expecting To Be the Target of Prejudice: Implications for Interethnic Interactions. *Personality and Social Psychology Bulletin, 31*(9), 1189–1202.

Sherwood, A., Allen, M.T., Fahrenberg, J., Kelsey, R.M., Lovallo, W.R., & Doornen, L.J.P. (1990). Methodological Guidelines for Impedance Cardiography. *Psychophysiology, 27*, 1-23.

Schultz, J. R., Gaither, S. E., Urry, H. L., & Maddox, K. B. (2015). Reframing anxiety to encourage interracial interactions. *Translational Issues in Psychological Science, 1*(4), 392–400.

Sidanius, J., & Pratto, F. (1993). *The inevitability of oppression and the dynamics of social dominance*. In P. M. Sniderman, P. E. Tetlock, & E. G. Carmines (Eds.), *Prejudice, politics, and the American dilemma* (p. 173–211). Stanford University Press.

Sirin, S. R. (2005). Socioeconomic status and academic achievement: A meta-analytic review of research. *Review of Educational Research, 75*(3), 417-453.

Snibbe, A. C., & Markus, H. R. (2005). You Can't Always Get What You Want: Educational Attainment, Agency, and Choice. *Journal of Personality and Social Psychology, 88*(4), 703–720.

Stephan, W. G., & Stephan, C. W. (1985). Intergroup anxiety. *Journal of Social Issues, 41*, 157–175.

- Stephens, N. M., Hamedani, M. G., & Destin, M. (2014). Closing the Social-Class Achievement Gap: A Difference-Education Intervention Improves First-Generation Students' Academic Performance and All Students' College Transition. *Psychological Science, 25*(4), 943–953.
- Stephens, N. M., Markus, H. R., & Townsend, S. S. (2007). Choice as an act of meaning: the case of social class. *Journal of Personality and Social Psychology, 93*(5), 814.
- Steptoe, A., & Wardle, J. (2005). Positive affect and biological function in everyday life. *Neurobiology of Aging, 26*(1), 108-112.
- Thomas, V., & Azmitia, M. (2014). Does class matter? The centrality and meaning of social class identity in emerging adulthood. *Identity: An International Journal of Theory and Research, 14*(3), 195-213.
- Townsend, S. S. M., Eliezer, D., Major, B., & Mendes, W. B. (2014). Influencing the world versus adjusting to constraints: Social class moderates responses to discrimination. *Social Psychological and Personality Science, 5*(2), 226–234.
- Townsend, S. S. M., Major, B., Sawyer, P. J., & Mendes, W. B. (2010). Can the absence of prejudice be more threatening than its presence? It depends on one's worldview. *Journal of Personality and Social Psychology, 99*, 933-947.
- Trachtman, R. (1999). The money taboo: Its effects in everyday life and in the practice of psychotherapy. *Clinical Social Work Journal, 27*(3), 275-288.
- Trawalter, S., Adam, E. K., Chase-Lansdale, P. L., & Richeson, J. A. (2012). Concerns about appearing prejudiced get under the skin: Stress responses to interracial contact in the moment and across time. *Journal of Experimental Social Psychology, 48*(3), 682-693.

- Trawalter, S., Richeson, J. A., & Shelton, J. N. (2009). Predicting behavior during interracial interactions: A stress and coping approach. *Personality and Social Psychology Review, 13*(4), 243-268.
- Tropp, L. R. (2003). The psychological impact of prejudice: Implications for intergroup contact. *Group Processes & Intergroup Relations, 6*(2), 131–149.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*(6), 1063–1070.
- Young, E. S., Griskevicius, V., Simpson, J. A., Waters, T. E., & Mittal, C. (2018). Can an unpredictable childhood environment enhance working memory? Testing the sensitized-specialization hypothesis. *Journal of Personality and Social Psychology, 114*(6), 891.

Appendix

Table A1.
 Summary of Simple Slopes: Effect of Condition within Participant Social Class Background (Study 1)

<i>Dependent Variable</i>	Participants from Lower Social Class Background (-1 SD)					Participants from Higher Social Class Background (+1 SD)				
	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Threat-Challenge Index	.067	.392	0.48	.635	[-0.59, 0.96]	-.358	.403	-2.77	.007	[-1.92, -0.32]
CO	-.035	.094	-0.38	.705	[-0.22, 0.15]	.248	.097	2.55	.012	[0.06, 0.44]
TPR	-.015	73.61	-0.11	.910	[-154.12, 137.40]	-0.22	74.47	-1.69	.094	[-273.11, 21.81]
Individual Task Performance	.028	.314	0.30	.764	[-0.52, 0.71]	-.180	.317	-1.89	.060	[-1.22, 0.03]
Positive Affect	-.158	.180	-1.63	.104	[-0.65, 0.06]	.057	.182	0.58	.562	[-0.25, 0.47]
Negative Affect	-.081	.223	-0.84	.400	[-0.63, 0.25]	.111	.225	1.14	.254	[-0.19, 0.70]
Vigilance	-.074	.197	-0.75	.454	[-0.54, 0.24]	.049	.199	0.50	.621	[-0.29, 0.49]

Note: Study 1 results of simple slopes analyses. Participants from higher social class backgrounds are those 1 SD above the mean of our social class background composite. Participants from lower social class backgrounds are those 1 SD below the mean of our social class background composite.

Table A2.
 Summary of Simple Slopes: Effect of Condition within Participant Social Class Background (Study 2)

<i>Dependent Variable</i>	Participants from Lower Social Class Backgrounds (-1 <i>SD</i>)					Participants from Higher Social Class Backgrounds (+1 <i>SD</i>)				
	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Threat	.054	.058	0.67	.505	[-0.07, 0.15]	-.230	.058	-2.81	.005	[-0.27, -0.05]
Resources Appraisal	-.034	.160	-0.42	.679	[-0.38, 0.25]	.144	.160	1.75	.081	[-0.04, 0.60]
Demands Appraisal	-.026	.179	-0.32	.753	[-0.41, 0.30]	-.108	.179	-1.30	.195	[-0.59, 0.12]
Individual Task Performance	-.078	.276	-0.95	.344	[-0.80, 0.28]	.071	.276	0.86	.390	[-0.31, 0.78]
Status Concerns	.136	.293	1.64	.102	[-0.10, 1.06]	.055	.292	0.66	.508	[-0.38, 0.77]
Concerns About Appearing Privileged	-.172	.255	-2.34	.020	[-1.10, -0.09]	-.295	.249	-4.12	<.001	[-1.51, -0.53]

Note. Study 2 results of simple slopes analyses. Participants from higher social class backgrounds are those 1 *SD* above the mean of our social class background composite. Participants from lower social class backgrounds are those 1 *SD* below the mean of our social class background composite.