

Running head: THREAT WHEN ANTICIPATING CROSS-CLASS INTERACTIONS

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

People often experience greater threat anticipating or engaging in *cross*-group interactions compared to *same*-group interactions. However, research has typically focused on *cross-race* interactions. Although social class shares some overlap with race, it is distinct from race and uniquely shapes how people cope and interact with the world. To deepen 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 versus same-class interactions but similar levels of threat when anticipating *upward* cross-class versus 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?

People often experience threat when anticipating or engaging in cross-group interactions (e.g., Toosi, Babbitt, Ambady, & Sommers, 2012), which may lead them to avoid these interactions (Plant, 2004). This threat occurs in both directions, meaning members of both high- and low-status groups experience it. However, research on threat in cross-group interactions has predominantly focused on cross-race interactions¹ (Davies, Tropp, Aron, Pettigrew, & Wright, 2011) and not considered experiences specific to different social groups. In particular, although social class is a meaningful social identity (Thomas & Azmitia, 2014), research has not examined people's experiences of threat anticipating or engaging in cross-class interactions. Considering that race and social class both confer status (e.g., Bourdieu, 1977; Pitesa, Thau, & Pilluta, 2017), it is possible that the bi-directional experiences of threat that accompany cross-race interactions also accompany cross-class interactions. However, given differences between social class and race (e.g., social class is perceived to be malleable; Kraus & Tan, 2015), it is also possible that experiences of threat engaging in or anticipating cross-class interactions are not bi-directional.

Thus, we ask: Does the direction of cross-class interactions matter for whether people are more threatened anticipating cross-class compared to same-class interactions? In the following sections, we consider this question by theorizing separately about downward and upward cross-class interactions. We first discuss *downward* cross-class interactions (i.e., the perspective of people from higher social class backgrounds interacting with people from lower social class backgrounds) and, subsequently, *upward* cross-class interactions (i.e., the perspective of people

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

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3 from lower social class backgrounds interacting with people from higher social class
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5 backgrounds).² We then report two studies in which we examine experiences of threat—i.e., the
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7 perception that situational demands exceed one’s personal resources to cope (Blascovich &
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9 Mendes, 2000)—while anticipating interacting with a cross-class or same-class partner.

12 **Anticipating Downward Cross-Class Versus Same-Class Interactions**

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15 We theorize that people will experience greater threat when anticipating downward cross-
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17 class, versus same-class, interactions. Given status differences between people from high and
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19 low social class backgrounds (e.g., Pitesa et al., 2017), those from higher social class
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21 backgrounds may feel uncertain when facing cross-class interactions (e.g., how their partners
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23 will behave or perceive them and how they should behave), which may increase experiences of
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25 threat anticipating such interactions (Stephan & Stephan, 1985). Several lines of research support
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27 our theorizing. First, cross-race interaction research shows that White people experience threat
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29 when anticipating or engaging in interactions with members of lower status racial groups (i.e.,
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31 downward cross-race interactions; Page-Gould, Mendoza-Denton, & Tropp, 2012). Second,
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33 research on cross-class affiliation demonstrates that people from higher social class backgrounds
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35 show less affiliation with cross-class, compared to same-class, partners (Côté et al., 2017).
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37 Finally, research demonstrates that interacting with someone from a very low social class
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39 background is threatening (Blascovich, Mendes, Hunter, Lickel, & Kowai-Bell, 2001, Study 3;
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41 Mendes, Blascovich, Lickel, & Hunter, 2002).³

47 **Anticipating Upward Cross-Class Versus Same-Class Interactions**

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53 ² We focus on interactions between people from high and low social class backgrounds, rather than interactions
54 between people from moderate social class backgrounds and those from higher or lower social class backgrounds.

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56 ³ This research did not examine participants’ social class backgrounds. Given participants were students at a
57 nationally ranked university, most were likely from a higher social class background than the disadvantaged partner
58 who had an absent father, an unemployed mother, and worked over the summer to help his family.
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3 We offer two possibilities for whether people will experience threat when anticipating
4 upward cross-class interactions. First, anticipating upward cross-class, versus same-class,
5 interactions may be threatening. This possibility is consistent with work on interactions across
6 status divides mentioned above, which suggests that members of lower status groups will also
7 experience cross-group interactions as uncertain and, therefore, threatening (e.g., Toosi et al.,
8 2012). Thus, cross-class interactions may lead to bi-directional experiences of threat. Consistent
9 with this, research has demonstrated threat among racial minority individuals anticipating or
10 engaging in interactions with White people (i.e., upward cross-race interactions; e.g., Plant,
11 2004; Sawyer, Major, Casad, Townsend, & Mendes, 2012). Additionally, cross-class affiliation
12 research finds that people from lower social class backgrounds also show less affiliation with
13 cross-class, compared to same-class, partners (Côté et al., 2017).

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29 Considering that experiences of threat when anticipating cross-class versus cross-race
30 interactions may be distinct, a second possibility is that anticipating upward cross-class
31 interactions may *not* be more threatening than same-class interactions. In particular, because
32 people from lower social class backgrounds believe that individuals' social class is malleable
33 (Kraus & Keltner, 2013), they may not perceive strong boundaries between social class groups.
34 As a result, they may experience upward cross-class interactions similarly to same-class
35 interactions—i.e., as relatively certain, and, hence, nonthreatening. Alternatively, even if people
36 from lower social class backgrounds do experience uncertainty in cross-class interactions, they
37 may not experience them as threatening because they tend to cope adaptively with uncertainty
38 (Townsend, Eliezer, Major, & Mendes, 2014; Young, Griskevicius, Simpson, Waters, & Mittal,
39 2018). Thus, experiences of threat in cross-class interactions may not be bi-directional.
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Consistent with this possibility, upward cross-class affiliation is relatively common (Côté et al., 2017).

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. We operationalized social class backgrounds as a composite of parental educational attainment and income. 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 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 when anticipating downward cross-class interactions.

Study 1

Method

Participants. Over three semesters, we recruited 228 first-year college students based on an available indicator of social class background (i.e., parents' educational attainment). We recruited students whose parents do not hold a 4-year college degree ($n = 117$), then recruited a similar number of students with at least one parent who holds at least a 4-year college degree ($n = 111$). We excluded four participants due to procedural error and five who failed our manipulation check. 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 effect size of $R^2 = .043$.

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. Not only might people's experiences of threat during anticipation color their experiences during these interactions (e.g., Brooks, 2014), but it may deter them from engaging in cross-class interactions altogether. We operationalized participants' social class backgrounds using their parents' (or guardians') educational attainment and income. These two indicators convey one's material and social resources and cultural knowledge (see Krieger, Williams, & Moss, 1997) and are commonly used to operationalize social class background (e.g., Duncan, Featherman, & Duncan, 1972; Sirin, 2005). Accordingly, we manipulated the confederates' social class backgrounds also using their parents' educational attainment and incomes.

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

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3 participants to ostensibly exchanged questionnaires with a cross-class or same-class partner who
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5 was not actually present. Participants in the partner from low social class background condition
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7 read that neither of their partner's parents had a 4-year college degree and their family's income
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9 was less than \$100,000 (the lowest option provided). In contrast, participants in the partner from
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11 high social class background condition read that their partner's parents both had 4-year college
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13 degrees and their family's income was greater than \$300,000 (the highest option provided).
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17 Participants then watched a prerecorded 1-minute video of their partner's introduction,
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19 which reiterated information from the introduction questionnaire. These videos depicted one of
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21 four confederates (2 male and 2 female). Each confederate recorded an introduction video for
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23 each condition (i.e., higher and lower social class background). To bolster our social class
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25 background manipulation, partners mentioned their parents' educational attainment. Specifically,
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27 they said, "...neither of my parents went to college" (partner from low social class background
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29 condition) or "...both of my parents went to college" (partner from high social class background
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31 condition). Participants then introduced themselves over video to their partners for 1 minute.
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33 Experimenters instructed them to elaborate on the introduction questionnaire to "give their
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35 partner a better idea of who you are."
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40 **Individual task.** Subsequently, experimenters told participants that they would complete
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42 a warm-up task individually before the collaborative task with their partner. To increase
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44 engagement, experimenters told participants that performance on the individual task would
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46 impact their overall team score, which determined whether the team would win two \$50 gift
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48 cards. Participants completed the individual task for 5 minutes (i.e., 12 Graduate Record
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50 Examination questions). This task also provided an initial motivated performance situation,
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52 which is necessary to examine participants' cardiovascular responses (see below).
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3 ***Collaborative task anticipation and post-task questionnaires.*** Experimenters then asked
4 participants to wait 5 minutes before the interaction could begin to allow for scoring of the
5 individual task. During this time, while participants were anticipating the interaction,
6 experimenters recorded participants' cardiovascular responses. Participants then completed
7 measures of affect and a manipulation check. We also measured additional aspects of
8 participants' experiences that are tangential to threat. See the Supplemental Materials for
9 descriptions and analyses.

19 **Measures.**

20 ***Participant social class background.*** We measured participants' social class
21 backgrounds using their parents' educational attainment and family income. We measured
22 parental educational attainment using six categories: (1) Less than high school, (2) High school
23 diploma, (3) Some college, (4) Two-year college degree (e.g., Associates), (5) 4-year college
24 degree (B.A. or B.S.), (6) Professional degree (MD., Ph.D., J.D., M.B.A., etc.). Family income
25 was measured using four categories: (1) Less than \$100,000 (2) \$100,000-\$200,000 (3)
26 \$200,000-\$300,000, (4) Over \$300,000. We computed participants' social class backgrounds by
27 standardizing and then averaging their parents' educational attainment and family income, $M =$
28 0.02, $SD = 0.88$ (1 SD below the mean corresponds to neither parent having a 4-year degree and
29 an average family income of less than \$100,000, 1 SD above the mean corresponds to at least
30 one parent having a 4-year degree and an average family income of at least \$200,000).
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33 ***Threat-challenge index.*** To measure threat, we followed the biopsychosocial model,
34 which holds that the experience of threat (vs. challenge) reliably leads to specific patterns of
35 cardiovascular responses during motivated performance situations (e.g., Blascovich & Mendes,
36 2000). We recorded cardiovascular responses noninvasively following established guidelines
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3 (e.g., Sherwood et al., 1990; see the Supplemental Materials for details). Specifically, we
4 measured participants' cardiac output (CO), i.e., the amount of blood pumped out of the heart,
5 and total peripheral resistance (TPR), i.e., the overall vasoconstriction in the periphery of the
6 body. Higher TPR and lower CO indicate greater threat relative to challenge (Blascovich &
7 Mendes, 2000).
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15 To support our assumption that the 5-minute interaction anticipation period was a
16 motivated performance situation and adequately engaging for participants, we examined heart
17 rate (HR) and left ventricle contractility (VC) reactivity. We created reactivity scores by
18 subtracting participants' HR and VC during the last minute of baseline from their HR and VC
19 during each of the 5 minutes of the anticipation period. We then created composites across these
20 two sets of five reactivity scores and conducted one-sample t tests to compare the composites to
21 zero to indicate task engagement (Mendes et al., 2003; Obrist, 1981). We found that VC
22 reactivity was significantly greater than zero, $t_{VC}(152) = 3.57, p < .001$. Although HR reactivity
23 was not significantly different from zero, $t_{HR}(178) = 1.53, p = .128$, it was in the right direction
24 (i.e., above zero). We then followed previous research to calculate the threat-challenge index
25 (e.g., Townsend, Major, Sawyer, & Mendes, 2010). First, we created reactivity scores for CO
26 and TPR for each of the 5 minutes of the anticipation period. Then, we standardized these scores,
27 subtracted CO from TPR for each minute, and then averaged across the 5 minutes to create a
28 composite, $M = 0.01, SD = 1.56$.
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47 ***Individual task performance.*** To measure participants' performance, participants
48 completed an individual task made up of twelve Graduate Record Examination (GRE) questions
49 which included five verbal and seven math questions. We measured performance on the
50 individual task as the number of correct responses (Range 0 – 10, $M = 3.15, SD = 1.67$).
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3 **Affect.** To measure affect, participants responded to an 11-item PANAS measure
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5 (Watson, Clark, & Tellegen, 1988) on a scale of 1 (*not at all*) to 7 (*very much*). Although
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7 research often fails to find correspondence between threat as assessed with cardiovascular
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9 measures and self-reported affect (e.g., Mendes et al., 2002; Townsend et al., 2010), we were
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11 interested in whether participants' affect might be influenced by anticipating a cross-class,
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13 compared to same-class, interaction. Following previous research, we measured positive affect
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15 (excited, inspired, in control, confident; $\alpha = .615$, $M = 3.82$, $SD = 0.94$), negative affect (nervous,
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17 distressed, worried, overwhelmed; $\alpha = .793$, $M = 2.49$, $SD = 1.16$), and vigilance (alert, attentive,
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19 hyper; $\alpha = .566$, $M = 3.97$, $SD = 1.00$; Townsend et al., 2010).
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24 **Manipulation check.** To ensure that participants were aware of their partner's social
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26 class background, they reported their partner's parents' highest educational attainment (0 = *less*
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28 *than a 4-year college degree*, 1 = *4-year college degree or higher*).
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31 **Results**

32 **Analysis plan.** In our primary analyses, we included covariates for race, gender, and
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34 body mass index (BMI; for the cardiovascular data only). We controlled for race because for
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36 some participants, this may also be a cross-race interaction given that our confederates were
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38 White. We controlled for gender because there are gender differences in approaches to
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40 interpersonal interactions (Ansell, Kurtz, & Markey, 2008; Carli, 1989). Finally, we controlled
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42 for BMI because it is associated with cardiovascular responses (Steptoe & Wardle, 2005). We
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44 conducted moderated regression analyses. On Step 1, we entered our covariates: race (0 = non-
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46 White, 1 = White), gender (0 = female, 1 = male), and BMI (mean-centered, for the
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48 cardiovascular measure only). We then entered condition (0 = partner from low social class
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50 background, 1 = partner from high social class background) and participants' social class
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3 background (mean-centered) on Step 2, and their interaction on Step 3. The significance and
4 direction of the threat-challenge index and affect results are unchanged when these covariates are
5 not included in the analyses (see the Supplemental Materials for additional information). The
6 degrees of freedom vary between dependent variables because some participants' cardiovascular
7 data were unscorable. We report key statistical results in the text and full statistical results in
8 Table 1. For effect sizes, we report ΔR^2 for interaction effects and b for main effects and simple
9 slopes.
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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>							

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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 = partner from low social class background, 1 = partner from high social class background) 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.

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3 **Manipulation check.** Our manipulation was successful: 98% of participants in the
4 partner from low social class background condition and 97% of participants in the partner from
5 high social class background condition passed. There were no significant differences by
6 condition, $\chi^2(1, N = 228) = 0.33, p = .567$.
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12 **Threat-challenge index.** Despite recruiting participants whose parents do not hold a 4-
13 year college degree over three semesters and stopping data collection only after this pool of
14 participants was exhausted, due to loss of cardiovascular data, our sample for threat-challenge
15 index is $N = 127$. With this smaller sample size, we conducted an additional sensitivity power
16 analysis, which indicated that we had 80% power to detect an effect size of $R^2 = .071$. However,
17 we further conducted a sensitivity analysis for the simple slopes which indicated that we had
18 80% power to detect an effect size of $R^2 = .059$. Our moderated regression analysis revealed no
19 significant main effect of condition, $t(120) = -1.44, b = -0.40, 95\% \text{ CI} [-0.95, 0.15], p = .154$,
20 but a significant main effect of participants' social class background such that participants from
21 higher social class backgrounds exhibited greater threat than those from lower social class
22 backgrounds, $t(120) = 2.09, b = 0.53, 95\% \text{ CI} [0.03, 1.02], p = .038$. Importantly, the condition
23 by participant social class background interaction was significant, $F(1, 119) = 5.29, b = -0.76,$
24 $95\% \text{ CI} [-1.40, -0.11], \Delta R^2 = .041, p = .023$ (see Fig. 1). Consistent with our prediction,
25 participants from higher social class backgrounds experienced greater threat when anticipating
26 an interaction with a partner from a lower social class background (i.e., a downward cross-class
27 interaction) than when anticipating an interaction with a partner from a high social class
28 background (i.e., a same-class interaction), $b = -1.11, 95\% \text{ CI} [-1.92, -0.32], \Delta R^2 = .060, p =$
29 $.007$. However, participants from lower social class backgrounds exhibited similar levels of
30 threat across conditions, $b = 0.19, 95\% \text{ CI} [-0.59, 0.96], \Delta R^2 = .002, p = .635$.
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In addition, participants from higher social class backgrounds experienced significantly greater threat than those from lower social class backgrounds when anticipating interacting with a partner from a lower social class background, $b = 0.53$, 95% 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% CI [-0.65, 0.19], $\Delta R^2 = .009$, $p = .283$.

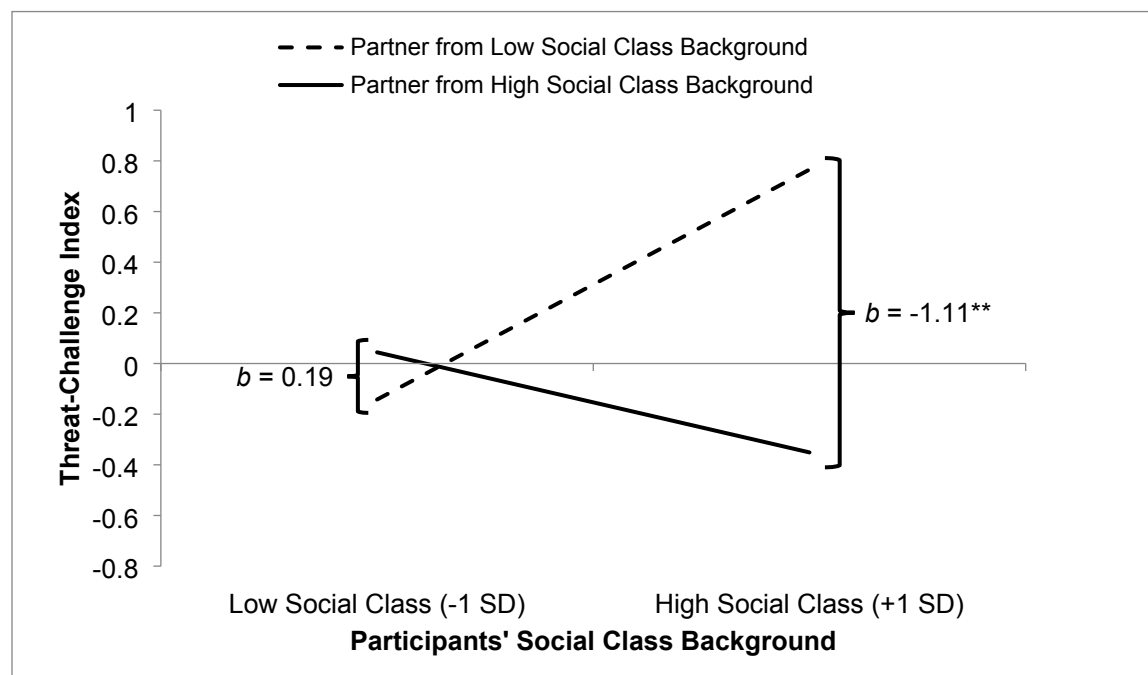


Fig. 1. Threat-challenge index during anticipation period as a function of condition (0 = partner from low social class background, 1 = partner from high social class background) and participant social class background (mean-centered) interaction on the threat-challenge index, controlling for gender (0 = female, 1 = male), race (0 = non-White, 1 = White), and body mass index (mean-centered). Graphed at ± 1 *SD* from participants' social class background mean. 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], $p = .003$,

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3 such that participants from higher social class backgrounds performed better than those from
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5 lower social class backgrounds. We did not find a significant condition by social class
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7 background interaction, $F(1, 208) = 2.39$, $b = -0.40$, 95% CI [-0.90, 0.11], $\Delta R^2 = .010$, $p = .124$.
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10 **Affect.** The only significant effect we found was a main effect of participants' social
11
12 class background on negative affect, $t(209) = -2.58$, $b = -0.34$, 95% CI [-0.61, -0.08], $p = .010$,
13
14 such that participants from higher social class backgrounds reported lower negative affect than
15
16 those from lower social class backgrounds. There were no other significant main or interactive
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18 effects, $F_s < 2.41$, $p_s > .122$.
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21 **Discussion**

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23 Consistent with our theorizing, participants from higher social class backgrounds
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25 exhibited greater threat when anticipating interacting with a partner from a lower versus higher
26
27 social class background. In contrast, participants from lower social class backgrounds showed
28
29 similar levels of threat when anticipating these two interactions. These findings are consistent
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31 with the second of our suggested possibilities and advance our understanding of how experiences
32
33 of threat in cross-class and cross-race interactions may differ.
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38 For individual task performance and negative affect, we found only a main effect of
39
40 social class background. Higher social class background was associated with better performance
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42 and lower negative affect. Although these results do not mirror our threat results, the social class
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44 performance difference is consistent with previous work (e.g., Duncan & Murnane, 2014) and
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46 the lack of correspondence between self-reported affect and cardiovascular measures is relatively
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48 common (Mendes et al., 2002; Townsend et al., 2010).
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52 In Study 2, we seek to build on our threat findings and provide convergent evidence for
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54 our cardiovascular measure of threat, by using a self-report measure of threat that instructs
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Running head: THREAT WHEN ANTICIPATING CROSS-CLASS INTERACTIONS 1

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2
3 participants to think about what it would be like to work with their partner. Additionally, to
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5 understand why anticipating *downward* cross-class interactions are more threatening than same-
6
7 class interactions, we examined potential mediators: “status concerns” and “concerns about
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9 appearing overprivileged,” which we describe below.
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11

12 Study 2

14 Method

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17 **Participants.** We recruited 307 first-year college students over two semesters. Similar to
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19 Study 1, we recruited students based on an available indicator of social class background (i.e.,
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21 parents’ educational attainment). Specifically, we recruited students whose parents do not hold a
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23 4-year college degree ($n = 159$), then recruited a similar number of students with at least one
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25 parent who holds a 4-year college degree ($n = 148$). We excluded two participants who
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27 participated in Study 1, two due to procedural errors, and 13 who failed our manipulation check.
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29 To maintain greater power, we included three participants who left manipulation check items
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31 unanswered. Excluding these participants does not change the significance or direction of our
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33 results. Our final sample was 290 participants. We conducted the same sensitivity power analysis
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35 as in Study 1, which indicated that we had 80% power to detect an effect size of $R^2 = .033$. An
36
37 additional sensitivity analysis for the simple slopes indicated that we had 80% power to detect an
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39 effect size of $R^2 = .027$. This study was pre-registered on Open Science Foundation
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41 (https://osf.io/9f2ws/?view_only=5b8ee52cf69446e7856fee062086a3f5).
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47 **Procedure.** The procedure was largely identical to Study 1 with three exceptions:
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49 participants were not connected to cardiovascular recording equipment because we measured
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51 threat through self-report, introductions were conducted via audio not video, and participants
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53 were given 8 minutes instead of 5 minutes to complete the individual task.
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3 ***Manipulation and audio introductions.*** Participants filled out the introduction
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5 questionnaire and saw their partner's social class background as in Study 1 (condition was
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7 randomly assigned). Then, participants listened to their partner's prerecorded 1-minute
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9 introduction, which used the same script as Study 1. After, participants gave their own 1-minute
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11 audio introduction.
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14 ***Individual task.*** As in Study 1, experimenters told participants that performance on the
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16 individual task would impact their overall team score, which would determine whether the team
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18 would win two \$50 gift cards. Subsequently, participants completed the individual task for 8
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20 minutes. We gave participants 8 minutes to complete the individual task instead of 5 minutes, as
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22 we did in Study 1, in an attempt to increase variance in performance.⁴
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26 ***Collaborative task anticipation.*** Following the task, participants reported their demand
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28 and resource appraisals with respect to working with their partner on the anticipated
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30 collaborative task (e.g., Mendes, Gray, Mendoza-Denton, Major, & Epel, 2007). Finally, to gain
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32 insight into why people from higher social class backgrounds might experience greater threat
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34 when they anticipate a cross-class versus same-class interaction, participants reported their status
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36 concerns and concerns about appearing overprivileged (e.g., Pettit & Lount, Jr., 2010).
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40 **Measures.**

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42 ***Participant social class background.*** We measured participants' social class
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44 backgrounds as in Study 1, $M = 0.00$, $SD = 0.86$ (1 SD below the mean corresponds to neither
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46 parent having a 4-year degree and an average family income of less than \$100,000, 1 SD above
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48 the mean corresponds to at least one parent having a 4-year degree and an average family income
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50 of at least \$200,000). We deviated from our pre-registration by using a composite of parental
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55 ⁴ Study 1 analyses without covariates revealed a marginal interaction on individual task performance (see
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57 Supplemental Materials). Therefore, in Study 2, we preregistered hypotheses for this dependent variable.
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Running head: THREAT WHEN ANTICIPATING CROSS-CLASS INTERACTIONS

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3 educational attainment and income instead of solely parental educational attainment. We made
4 this decision post hoc because we manipulated the partner's social class background using both
5 dimensions. We find a similar pattern of results using parental educational attainment. See the
6 Supplemental Materials for these results.
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12 **Manipulation check.** Participants completed the same manipulation check as Study 1.
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15 **Threat.** To measure threat regarding the upcoming interaction, participants answered
16 questions “regarding your expectations of what it will be like to interact with your partner as you
17 two work on the collaborative task.” Then, participants reported their demand and resource
18 appraisals of “the upcoming task of working together with [their] partner.” Specifically,
19 participants completed 10 items adapted from Mendes and colleagues (2007) on a scale of 1
20 (*strongly disagree*) to 7 (*strongly agree*). Five items assessed demand appraisals (e.g., “This task
21 is threatening”), $\alpha = .746$, $M = 3.56$, $SD = 1.08$. Five items assessed resource appraisals (e.g.,
22 “This task is a positive challenge”), $\alpha = .750$, $M = 4.48$, $SD = 0.98$. Following Mendes and
23 colleagues (2007), we created a threat ratio by dividing demand appraisals by resource
24 appraisals. Larger values on this ratio indicate greater threat, $M = 0.84$, $SD = 0.35$.
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38 **Individual task performance.** To examine performance effects, participants completed
39 the same individual task consisting of the twelve GRE questions from Study 1. We measured
40 performance on the individual task as the number of correct responses (Range 0 – 8, $M = 2.82$,
41 $SD = 1.68$). To maintain power, we included 5 participants who had 5 minutes instead of 8
42 minutes to complete the individual task. Excluding these participants does not change the
43 significance or direction of results.
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52 **Status concerns.** We were interested in whether people from higher social class
53 backgrounds experience threat anticipating downward cross-class interactions due to “status
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concerns,” because they may worry that their higher status is not secure given their partner from a lower social class background appears to be competent. Indeed, people from higher status groups are threatened at the prospect of being outperformed by members of lower status groups due to concerns over status loss (Pettit & Lount Jr., 2010). Thus, we measured participants’ status concerns using 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. We were also interested in whether people from higher social class backgrounds experience threat when anticipating cross-class interactions due to “concerns about appearing overprivileged” (i.e., worry that their partners will perceive them as being overprivileged). Research suggests that people from higher status groups (e.g., White people) are threatened in cross-group interactions due to concerns related to their privilege (e.g., Trawalter, Adam, Lansdale, & Richeson, 2012). 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 and with our standard covariates (i.e., race and gender). Additionally, we planned to conduct mediated moderation analyses for status concerns and concerns about appearing overprivileged (Hayes, 2013; PROCESS macro for SPSS 23, model 8, 10,000 bootstrapped samples). Specifically, we predicted that these outcomes might partially explain experiences of threat among participants from *higher* social class backgrounds (i.e., when people

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3 anticipate *downward* cross-class interactions). We report key statistical results in the text and full
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5 statistical results in Table 2.
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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 = partner from low social class background, 1 = partner from high social class background) and participants' social class background (mean-centered), and Step 3 included their interaction.

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Manipulation check. Our manipulation was successful: 97% of participants in the partner from low social class background condition and 95% of participants in the partner from high social class background condition passed. 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 those 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 analysis for the simple slopes, which were the more exact tests of our hypotheses, Study 2 was only slightly underpowered. Consistent with Study 1 and our predictions, participants from higher social class backgrounds reported greater threat when anticipating interacting with a cross-class compared to same-class partner, $b = -0.16, 95\% \text{ CI } [-0.27, -0.05], \Delta R^2 = .026, p = .005$. In contrast, but also consistent with our predictions, participants from lower social class backgrounds reported similar levels of threat anticipating cross-class and same-class interactions, $b = 0.04, 95\% \text{ CI } [-0.08, 0.15], \Delta R^2 = .001, p = .505$.

In addition, participants from higher social class backgrounds reported greater threat than those from lower social class backgrounds when anticipating interacting with a partner from a lower social class background, $b = 0.08, 95\% \text{ CI } [0.01, 0.14], \Delta R^2 = .015, p = .033$. 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], $\Delta R^2 = .007$, $p = .209$.

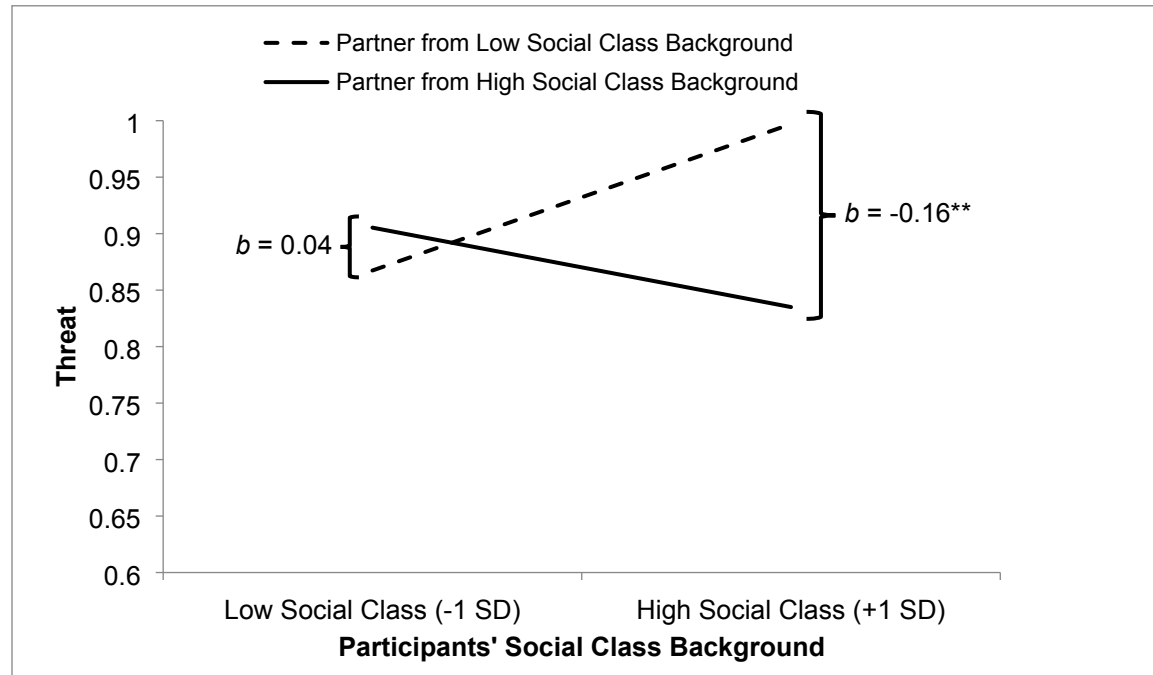


Fig. 2. Reported threat regarding the anticipated interaction as a function of condition (0 = partner from low social class background, 1 = partner from high social class background) and participant social class background (mean-centered) controlling for gender (0 = female, 1 = male) and race (0 = non-White, 1 = White). Graphed at ± 1 SD from participants' social class background mean. 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, $t(285) = -0.06$, $b = -0.01$, 95% CI [-0.39, 0.37], $p = .951$, main effect of participants' social class background, $t(285) = 1.27$, $b = 0.21$, 95% CI [-0.12, 0.54], $p = .205$, or interaction, $F(1, 284) = 1.63$, $b = 0.29$, 95% CI [-0.16, 0.74], $\Delta R^2 = .006$, $p = .202$.

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 [-

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0.10, 0.60], $p = .167$, significant interaction, $F(1, 282) = 0.48$, $b = -0.17$, 95% CI [-0.64, 0.31], $\Delta R^2 = .002$, $p = .489$. We conducted the mediated moderation analyses as stated in our pre-registration and described above. Unsurprisingly, we did not find evidence for mediation (see the Supplemental Materials for results of this analysis).

Concerns about appearing overprivileged. We found a significant main effect of condition such that participants in the partner from a low social class background condition reported greater concerns about appearing overprivileged than those in the partner from a high social class background 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 those 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], $\Delta R^2 = .003$, $p = .231$. Again, we conducted the mediated moderation analyses as stated in our pre-registration and described above. Given that we did not find an interaction on our proposed mediator, concerns about appearing overprivileged, the results were not significant (see the Supplemental Materials for results of this analysis).

Discussion

Consistent with our predictions and Study 1, participants from higher social class backgrounds reported greater threat anticipating a cross-class versus same-class interaction, and participants from lower social class backgrounds reported similar threat levels anticipating these two interactions. Although Study 2 was still underpowered to detect the interaction effect on threat, our high-impact study design, the preregistration of our predictions, the consistency with Study 1, and adequate power to detect the simple effect among participants from higher social

class backgrounds all support our findings' robustness. We found no significant 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 those anticipating interacting with someone from a lower, versus higher, social class background. However, neither concern mediated the effect of anticipating downward cross-class versus same-class interactions on threat.

General Discussion

Using cardiovascular and self-report measures, we found that people's experiences of threat when anticipating cross-class interactions are not bi-directional. Specifically, people from higher social class backgrounds experienced greater threat when anticipating interacting with someone from a lower, versus similar, social class background. This mirrors work demonstrating that members of higher status racial groups experience greater threat in cross-race versus same-race interactions (e.g., Toosi et al., 2012). These results suggest that people from higher social class backgrounds may avoid cross-class interactions, which may limit the frequency of cross-class interactions and the important benefits those interactions can produce (Carey, Stephens, Townsend, & Hamedani, 2019; Lessard & Juvonen, 2019).

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. This finding differs from research showing that members of low-status racial groups experience greater threat in cross-race versus same-race interactions (e.g., Trawalter, Richeson, & Shelton, 2009). These results imply that although race and social class both confer status, crossing racial versus social class status divides can impact threat in distinct ways.

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3 In two time-intensive and high impact laboratory studies, we are the first to directly
4 examine experiences of threat when anticipating cross-class interactions and make several
5 contributions. First, we contribute to intergroup relations research by demonstrating that, despite
6 similar status differences, findings from one type of cross-group interaction may not generalize
7 to another type (Allen & Uskul, 2019; Apfelbaum, Stephens, Reagans, 2016). Second, by
8 showing that people experience threat prior to cross-class interactions, our work temporally
9 extends interactions to include the anticipation of them. Finally, we reveal a potential benefit of
10 being from lower social class backgrounds: no increased threat when crossing the class divide.
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21 **Limitations and Future Directions**

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24 Our work also leaves important questions for future research. For instance: *why* are
25 people from lower social class backgrounds not more threatened when anticipating cross-class
26 versus same-class interactions? As discussed, it is possible that people from lower social class
27 backgrounds may not perceive cross-class interactions as cross-group and/or may be able to cope
28 adaptively with uncertainty. Another possibility is that people from lower social class
29 backgrounds, particularly college students, have frequent experience with cross-class
30 interactions. While this is likely, students from minority racial backgrounds also likely have
31 significant cross-race experience, but still show greater threat in cross-race versus same-race
32 interactions (Trawalter et al., 2009). Future work is needed to disentangle these possibilities.
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45 Additionally, our participants were undergraduates who anticipated interacting with
46 another student during a collaborative task. It is unclear how the context, content, and stage of
47 the interaction might affect experiences of threat. Research should examine cross-class
48 interactions among non-student samples, particularly those in which a power difference exists
49 (e.g., supervisor-employee interaction). Future work might also fruitfully examine social
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3 interactions, given social class differences in comfort working collaboratively (Dittmann,
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5 Stephens, & Townsend, 2019) and competency concerns (e.g., Croizet & Claire, 1998). Finally,
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7 although experiences during anticipated and actual interactions are highly correlated (Bijleveld,
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9 Scheepers, & Ellemers, 2012), future research should examine how actual cross-class versus
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11 same-class interactions affect threat.
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14 15 **Conclusion**

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17 Social class plays an important role in people's lives (e.g., Bourdieu, 1977; Stephens et
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19 al., 2007) and confers status differences among groups (e.g., Pitesa et al., 2017). Across two
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21 studies, we found that the direction of an anticipated cross-class interaction mattered for people's
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23 experiences of threat. These results suggest that people from higher social class backgrounds
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25 may avoid cross-class interactions, which might curtail benefits that come from engaging in
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27 these interactions. Our work also indicates that experiences of threat in cross-class interactions
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29 are distinct from cross-race interactions and highlights the importance of considering the
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31 characteristics and experiences specific to different social groups to fully understand cross-group
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33 interactions.
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Author Contributions

All authors developed the study concept and design. M. Truong, S. S. M. Townsend, and S. Smallets collected and analyzed the data and interpreted the results. M. Truong and S. S. M. Townsend drafted the manuscript, and S. Smallets and N. Stephens provided critical revisions. All authors approved the final version of the manuscript for submission.

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