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# **Supplemental Material Study S1**

We conducted a supplementary study with a round robin design involving students in project teams. Using polynomial regression analysis, we examined whether receiving task-related help would result in status threat when the help recipient had lower competence, indicated by lower academic performance, than the help giver, and whether status threat in turn would induce envy (Hypotheses 1 and 2). In this study, we used a different operationalization of relative competence (i.e., congruence and incongruence between help recipients’ and givers’ academic performance) and different measure of envy from Study 1 in the main manuscript.

## **Study S1: Method**

### **Sample and Procedure**

We collected data from first or second-year undergraduate business students at a major university in Hong Kong. Working in teams of six to eight members, the students had to complete a team project (i.e., business plan) in one semester as part of the evaluation component in a business-related module. Similar to work teams in organizations where team performance will have a significant impact on individual performance, helping interactions in student project teams are necessary to ensure the progress of the project and the quality of work each team member puts in. We collected data of demographic information, receipt of task-related and person-related help from team members, perceptions of status threat from and feelings of envy toward team members. We measured the focal study variables using a survey during the last week of semester. The instructor provided mid-term examination scores that were used to capture the (in)congruence between the help recipients’ and givers’ academic competence.

Before we collected data, one of the authors introduced the study, assuring students that participation was voluntary and confidential, that the instructor would have no access to the information, and that participation was unrelated to performance evaluations. We distributed paper-and-pencil surveys to 51 students across 16 teams, to be completed in the classroom independently and then returned directly to the researchers. After listwise deletion to remove participants who submitted only one survey and dropping incomplete dyads (e.g., in an A-B dyad, A filled in the survey but B did not), our final sample included 126 dyads (response rate = 64%). Participants averaged 19 years old; 81% were women. Team members had known one another for an average of 4 months.

### **Measures**

All measures used were originally developed in English and translated into Chinese following the translation-back-translation procedure (Brislin, 1980). We invited one bilingual speaker to translate the measures into Chinese and another bilingual speaker to translate the Chinese items back into English. Upon translation and back translation, they discussed and resolved discrepancy in wordings to ensure equivalence. We then sent the translated surveys to several undergraduate research assistants to ensure they could understand the measurement items. Unless otherwise stated, all items were measured on a five-point scale, with response options ranging from “strongly disagree” to “strongly agree.”

***Receiving task-related help.*** To measure task-related help, we used three items from the task-focused dimension of the interpersonal citizenship behavior scale developed by Settoon and Mossholder (2002). This shortened version has been validated and used in previous studies using a round-robin design (e.g., de Jong et al., 2007). We asked each participant to assess each of their team members’ task-related helping behaviors directed toward him/her. A sample item includes “[X] helped me when I was running behind in my work activities.” Cronbach’s alpha was .95.

***Relative competence.*** We operationalized relative competence as the incongruence between help recipients’ and help givers’ mid-term examination scores in each dyad. The mid-term examination was conducted one month before the survey. Students could view their scores online independently and they were encouraged to share their results and answers with one another to foster mutual learning.

***Status threat.*** We measured status threat by adapting two items from Djurdjevic and colleagues (2017). We asked participants to evaluate how they perceived each of their team members based on their interaction. Items include “[X] threatened my status in my team” and “[X] threatened my prominence in my team.” Initially we selected three items based on the highest factor loadings. However, the Chinese translation for “[X] threatened my position of prestige in my team” is very similar to that for “[X] threatened my prominence in my team.” Therefore, this item was not included. Cronbach’s alpha was .87.

***Envy.*** To measure target-specific envy, we asked participants to rate how often they felt jealous, longing, and inferior toward each team member on a five-point scale (1 = *never* to 5 = *always*; Fiske et al., 2002; Lam et al., 2016; Parrott & Smith, 1993).[[1]](#footnote-1) Cronbach’s alpha was .88.

***Control variables.*** We controlled for gender, age, and length of acquaintance because these demographic variables may influence peer helping interactions as well as their perceptions of social status and envy (Flynn, 2003; Lam et al., 2016; Ouyang et al., 2018). To demonstrate the unique effect of receiving task-related help, we controlled for the effect of receiving person-related help, measured with three items from the person-focused dimension of the interpersonal citizenship behavior scale (Settoon & Mossholder, 2002). These three items were adapted by de Jong and colleagues (2007) to reflect the dyadic level of analysis. Participants assessed each team member regarding behaviors intended to show care and concern. A sample item is “[X] listened to me when I had to get something off my chest.” Cronbach’s alpha was .94. Notably, the pattern and interpretation of the results remained virtually unchanged when including or excluding all of the control variables.

### **Analytical Strategy**

The individual data were nested both within dyads and within teams. Following past studies using a similar design (e.g., Liu et al., 2015; Van der Vegt et al., 2006), we tested Hypotheses 1 and 2 using a multilevel social relations modeling (SRM, Kenny, 1994) approach in a R software package (SRM\_R; Kenny & Wong, 2016). The methodology allows us to partition variance of the mediator (status threat) and dependent variable (envy) attributed to the characteristics of the actor (help recipient), the target (help giver), the dyadic relationship, and the team. For example, we are able to partition the total variance in the help recipient’s envy toward the help giver that may be attributed to the help recipient’s characteristics (i.e., A tends to envy other coworkers), the help giver’s characteristics (i.e., B is often envied by other coworkers), the relationship between the help recipient and the help giver (i.e., A always envies B), and the team (i.e., A and B work in a team where envy is prevalent among team members).

Hypothesis 1 predicts that relative competence would moderate the relationship between receiving task-related help and status threat such that when help recipients are less competent than help givers, they are more likely to perceive that receiving task-related help would threaten their status. Put differently, we expect that the incongruence in the help givers’ and help recipients’ competence (as reflected in academic performance scores) would be positively associated with status threat, such that help recipients with a performance score lower (higher) than that of the help giver would be more (less) likely to experience status threat. This association between performance scores incongruence and status threat would be stronger at higher levels (rather than lower levels) of receiving task-related help.

**Polynomial regression to test Hypothesis 1.** We used multilevel polynomial regressions and response surface modeling (Edwards & Parry, 1993) as this approach has an advantage over other techniques such as difference scores. Specifically, we applied Jansen & Kristof-Brown (2005) multilevel approach by obtaining the estimates following the multilevel social relations modeling and used these estimates to conduct multilevel polynomial regressions to account for non-independence in our round robin data.

Specifically, the dependent variable (i.e., status threat) was regressed on control variables, as well as five polynomial terms: Helper giver’s academic performance score (HS), recipient’s academic performance score (RS), help giver’s performance score squared (HS2), help giver’s score times recipient’s score (HS\*RS), and recipient’s performance score squared (RS2). To reduce multicollinearity and facilitate interpretation, HS and RS were standardized around the grand mean within each sample and the second-order terms were then calculated. After polynomial regressions were conducted, we examined the slopes and curvatures along two critical lines including the congruence line (HS = RS) and the incongruence line (HS = -RS). To estimate the moderating role of receiving help, we integrated procedures for polynomial regression (Edwards & Parry, 1993) and moderation testing (see Vogel et al., 2016 for a similar approach). In particular, we combined procedures from moderation testing and simple slopes analysis, examining the surface slopes and curvatures at high (+1 *SD*; receiving more task-related help) and low (-1 *SD*; receiving less task-related help) values of receiving help.

**Block variable approach to test Hypothesis 2.** To test the mediating effect of status threat on envy (Hypothesis 2), we used the block variable approach (Zhang et al., 2012). We obtained a coefficient to represent the joint effect of the five polynomial terms (HS, RS, HS2, HS\*RS, RS2) by combining the five terms into a block variable when receiving more task-related help. We repeated the same procedure to obtain another coefficient to represent the block variable when receiving less task-related help. After generating these two block variables, we reran the polynomial regression and obtained the standardized regression coefficient of the block variable as the path coefficient for the mediation analysis. We used Monte Carlo method and estimated 95% confidence intervals to test the significance of the indirect effects, based on 20,000 simulated samples (Preacher & Selig, 2012; Selig & Preacher, 2008).

## **Study S1: Results**

### **Confirmatory Factor Analyses**

Before testing our hypotheses, we conducted confirmatory factor analyses (CFA) in order to assess the discriminant validity of the four self-rated variables. Results showed that the four-factor model (i.e., receiving task-related help, receiving person-related help, help recipient’s perceived status threat, and recipient’s envy of the help giver) fit the data significantly better (*χ*2 = 76.66, *p* < .001, *df* =38, CFI = .97, TLI = .95, SRMR = .04, RMSEA = .08) than a three-factor model combining status threat and envy (△*χ*2 = 151.13, △*df* = 3, *p* < .001, CFI = .84, TLI = .79, SRMR = .10, RMSEA = .19), a three-factor model combining receiving task-related help and receiving person-related help (△*χ*2 = 100.64, △*df* = 3, *p* < .001, CFI = .85, TLI = .85, SRMR = .05, RMSEA = .16), and a two-factor model combining receiving task-related help and receiving person-related help as well as combining status threat and envy (△*χ*2 = 251.52, △*df* = 5, *p* < .001, CFI = .76, TLI = .69, SRMR = .11, RMSEA = .23).

### **Test of Hypotheses**

Table S1 presents the means, standard deviations, and correlations among the study variables. Individuals were more likely to envy interaction partners who threatened their status in the work team (*r* = .26, *p* = .003). As shown in Table S2, 49.5% of the total variance in status threat and 32.1% of the variance in envy resided at the dyadic level. These findings indicate that a large portion of the variance in status threat and envy was explained by the characteristics of the dyadic relationship. Thus, it is meaningful and appropriate to use SRM to understand how dyadic interactions influence status threat and envy.

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Insert Tables S1 & S2 about here

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According to Edwards and Parry (1993), a significant incongruence effect between the help giver’s and recipient’s performance scores exists when the coefficients for the three second-order polynomial terms (i.e., HS2, HS\*RS, and RS2) are jointly significant and the surface slope of the incongruence line is significantly positive. Our results suggested that the three second-order polynomial terms were not jointly significant (*F* = 2.05, *p* = .89), although the slope of incongruence line was significantly positive as shown in Table S3 Model 1(slope = .44, *SE* = 12, *p* = .001). Figure S1 shows that a recipient whose performance score is lower than the help giver perceives higher status threat than those whose performance score is higher than the help giver. The three non-significant second-order polynomial terms, however, suggest that the incongruence effect in performance scores may depend on other factors. We then tested the moderating role of receiving task-related help for this incongruence effect. We first controlled for the direct effect of receiving task-related help before examining the interactive effect (Model 2; Vogel et al., 2016). Next, we included additional interaction terms (Models 3 and 4). As shown in Figures S2a and S2b, the shapes of the surface at the higher versus lower levels of receiving task-related help are not similar, which provide initial evidence for the contingent role of receiving task-related help. Supporting our predictions based on Hypothesis 1, Model 3 reveals that, when the recipient receives more task-related help from the help giver, the surface slope along the line of incongruence is positive and significant (slope = .62, *SE* = .17, *p* < .001) with an non-significant curvature (curvature = .17, *SE* = .20, *p* = .40). In contrast, when receiving less task-related help from the help giver (Model 4), the surface curvature and slope along the incongruence line is non-significant (slope = .18, *SE* = .20, *p* = .37; curvature = -.28, *SE* = .16, *p* = .12). In sum, the incongruence effect appears at the higher level of receiving task-related help (Figure S2a), but there is no evidence for an incongruent effect at the lower level of receiving task-related help (Figure S2b). These results suggest that, when receiving more task-related help from the help giver, recipient with a lower performance score than the help giver perceives higher status threat, whereas recipient with a higher performance score than the help giver perceives lower status threat (See Figure S2a; incongruence line)

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Insert Table S3 & Figures S1, S2a, and S2b about here

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Interestingly, we also found that the surface along the congruence line curved upward (curvature = .54, *SE* = .21, *p* = .01) in the condition of receiving more task-related help (See Model 3). The simple slope tests suggest a u-shape curve along the congruence line (matched performance scores between the recipient and help giver). As shown in Figure S2a (the congruence line), when receiving more help from the help giver, the recipient’s status threat is higher when both recipient’s and help giver’s performance scores are similarly high (simple slope = 1.47, *p* = .01) or low (simple slope = -.08, *p* = .04). It appears that similarity in performance scores between two parties increases status threat perceptions in helping interactions. One possible explanation is that similarity in performance/competence, an important comparison dimension, triggers more competition and contrastive social comparisons, prompting the recipient to view receiving help from a similarly competent/incompetent comparison target in a negative light (Tesser, 1988). Overall, the pattern of results based on polynomial regression suggests that receiving task-related help is more threatening to the recipient (except when the recipient is more competent than the help giver) in the context of social comparison, highlighting the importance for future research to consider social comparisons in understanding helping interactions.

We then used the block approach and Monte Carlos method to test the mediating role of status threat (Hypothesis 2). Specifically, using the estimated coefficients of the five polynomial terms generated in Model 3 in Table S3, we obtained a block variable of a higher level of receiving task-related help (block variable = .40\*HS -.22\*RS + .20\*HS2 +.18\*HS\*RS +.15\*RS2), before we regressed status threat on the block variable. As such, we obtained a single coefficient that represents the joint effect of match/mismatch academic performance scores on status threat when receiving more task-related help (*γ* = .30, *SE* = .08, *p* < .001). We used the same procedure to generate the coefficient of the joint effect of match/mismatch scores on the following variables: status threat under the condition of receiving less task-related help (*γ* = .12, *SE* = .12, *p* = .32), envy under the condition of receiving more task-related help (*γ* = .20, *SE* = .10, *p* = .05) as well as under the condition of receiving less task-related help (*γ* = .14, *SE* = .08, *p* = .08). These coefficients were used to compute the indirect effect of matched/mismatched academic scores on envy via status threat. As shown in Table S4, the indirect effect of matched/mismatched academic scores on envy via status threat was significant (indirect effect = .09, 95% CI = [.028, .161]) among participants who received more task-related help. In contrast, this indirect effect was not significant (indirect effect = .04, 95% CI = [-.36, .125]) among those who received less task-related help. In sum, the results based on polynomial regression provide support for Hypotheses 1 and 2.

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Insert Table S4 about here

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## Table S1 Study S1: Means, Standard Deviations, and Correlations among Study Variables

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Variables | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1 | R’s gender | .81 | .39 | - |  |  |  |  |  |  |  |  |  |  |  |
| 2 | R’s age | 19.01 | 1.67 | .08 | - |  |  |  |  |  |  |  |  |  |  |
| 3 | H’s gender | .81 | .39 | .18\* | .15 | - |  |  |  |  |  |  |  |  |  |
| 4 | H’s age | 19.01 | 1.67 | .15 | .17 | .08 | - |  |  |  |  |  |  |  |  |
| 5 | Length of acquaintance | 4.08 | 3.24 | -.08 | .23\* | -.07 | .19\* | - |  |  |  |  |  |  |  |
| 6 | Team size | 6.65 | .62 | -.05 | -.38\*\* | -.05 | -.38\*\* | -.45\*\* | - |  |  |  |  |  |  |
| 7 | R receiving person-related help from H | 3.28 | .94 | -.12 | -.11 | -.16 | -.13 | .15 | .06 | **(.94)** |  |  |  |  |  |
| 8 | R receiving task-related help  from H | 3.23 | .92 | -.07 | -.10 | -.15 | -.19\* | .00 | .08 | .77\*\* | **(.95)** |  |  |  |  |
| 9 | R’s midterm exam score | 32.57 | 4.34 | .09 | .19\* | .08 | .22\* | .01 | -.18\* | -.00 | -.00 | - |  |  |  |
| 10 | H’s midterm exam score | 32.57 | 4.34 | .08 | .22\* | .09 | .19\* | .05 | -.18\* | -.08 | .06 | .05 | - |  |  |
| 11 | R’s status threat from H | 2.06 | .93 | .21\* | .20\* | .01 | .23\*\* | -.07 | -.13 | -.10 | -.07 | -.07 | .21\* | **(.87)** |  |
| 12 | R’s envy toward H | 1.35 | .71 | -.15 | .07 | -.03 | .06 | .22 | -.17 | -.05 | -.01 | -.01 | .17 | .26\*\* | **(.88)** |

*Note. N* = 126 dyads from 51 individuals within 16 teams. \* *p* < .05, \*\* *p* < .01.Cronbach’s alpha coefficients are presented on the diagonal in bold. For gender, 1 = woman, 0 = man; R = help recipient, H = help giver.

## Table S2 Study S1: Variance Partitioning for R’s Status Threat from and Envy toward H

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | R’s status threat from H | |  | R’s envy toward H | |
| Source of variance |  | B (%) | SE |  | B (%) | SE |
| Group variance |  | .07 (8%) | .13 |  | .00 (0%) | .00 |
| Actor (R) variance |  | .28 (32.2%) | .13 |  | .35 (66%) | .09 |
| Partner (H) variance |  | .09 (10.3%) | .08 |  | .01 (1.9%) | .02 |
| Dyadic variance |  | .43 (49.5%) | .09 |  | .17 (32.1%) | .03 |
| Deviance |  | 314.23 | |  | 224.09 | |

*Note.* For Study 1: *N* = 126 dyads from 51 individuals within 16 teams; R = help recipient, H = help giver.

## Table S3 Study S1: Results of Polynomial Regression

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Status Threat | | | | | | | |  | Envy | | | |
|  |  | |  | | Receiving more task-related help (RTH high) | | Receiving less task-related help (RTH low) | |  | Receiving more task-related help (RTH high) | | Receiving less task-related help (RTH low) | |
|  | Model 1 | | Model 2 | | Model 3 | | Model 4 | |  | Model 5 | | Model 6 | |
| Predictor | *B* | *SE* | *B* | *SE* | *B* | *SE* | *B* | *SE* |  | *B* | *SE* | *B* | *SE* |
| Constant | -2.03 | 2.87 | -1.94 | 2.90 | -3.15 | 2.88 | -2.84 | 2.86 |  | 2.24 | 1.88 | 1.99 | 1.85 |
| Team size | -.03 | .24 | -.03 | .24 | .03 | .28 | .03 | .24 |  | -.04 | .15 | -.04 | .15 |
| R’s gender | .38 | .27 | .36 | .27 | .41 | .26 | .41 | .26 |  | -.31 | .22 | -.31 | .22 |
| R’s age | .10 | .07 | .10 | .07 | .13 | .07 | .13 | .07 |  | .02 | .06 | -.01 | .06 |
| H’s gender | -.01 | .21 | .00 | .21 | -.11\* | .21 | -.11 | .21 |  | .09 | .15 | .09 | .14 |
| H’s age | .11\* | .05 | .11\* | .05 | .12 | .05 | .12 | .05 |  | -.05 | .03 | -.05 | .03 |
| Length of acquaintance | -.04 | .03 | -.03 | .04 | -.03 | .03 | -.03 | .04 |  | .05 | .02 | .05 | .02 |
| R receiving person-related help from H | -.01 | .08 | -.10 | .12 | -.08 | .12 | -.08 | .11 |  | -.04 | .08 | -.04 | .03 |
| H’s midterm exam score (HS) | .22\* | .09 | .22\* | .09 | .40\*\* | .11 | -.02 | .12 |  | .02 | .08 | .10 | .08 |
| R’s midterm exam score (RS) | -.22 | .12 | -.22 | .12 | -.22 | .15 | -.20 | .15 |  | -.10 | .13 | .11 | .12 |
| HS2 | .12 | .08 | .12 | .08 | .20 | .11 | -.07 | .11 |  | .02 | .07 | .08 | .07 |
| HS\*RS | .09 | .08 | -.09 | .09 | .18 | .12 | .05 | .11 |  | -.06 | .07 | .03 | .06 |
| RS2 | -.03 | .10 | -.04 | .10 | .15 | .15 | -.17 | .13 |  | .01 | .12 | .13 | .10 |
| R receiving task-related help from H (RTH) |  |  | .11 | .12 |  |  |  |  |  |  |  |  |  |
| RTH high/low |  |  |  |  | -.15 | .15 | -.15 | .16 |  | .12 | .11 | .12 | .11 |
| HS\* RTH high/low |  |  |  |  | .21\*\* | .08 | .21\*\* | .08 |  | -.04 | .06 | -.04 | .06 |
| RS\* RTH high/low |  |  |  |  | -.01 | .09 | -.01 | .10 |  | -.10 | .07 | -.10 | .07 |
| HS2\* RTH high/low |  |  |  |  | .13 | .08 | .13 | .08 |  | -.03 | .05 | -.03 | .05 |
| RS2\* RTH high/low |  |  |  |  | .16 | .09 | .16 | .09 |  | -.06 | .07 | -.06 | .07 |
| HS2\*RS2\* RTH high/low |  |  |  |  | .07 | .08 | .07 | .08 |  | -.04 | .05 | -.04 | .05 |
| Status Threat |  |  |  |  |  |  |  |  |  | .20\* | .05 | .20\* | .05 |
| *χ2* | 328.23 | | 329.95 | | 332.23 | | 332.23 | |  | 268.31 | | 268.31 | |
| Congruence (HS = RS) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Slope | .01 | .17 | -.01 | .17 | .18 | .20 | -.21 | .23 |  | -.08 | .07 | .21 | .14 |
| Curvature | .17 | .15 | .17 | .15 | .54\* | .21 | -.18 | .22 |  | -.02 | .14 | .24 | .13 |
| Incongruence (HS = -RS) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Slope | .44\*\* | .12 | .43\*\* | .12 | .62\*\*\* | .17 | .18 | .20 |  | .11 | .12 | -.01 | .16 |
| Curvature | -.01 | .13 | -.02 | .13 | .17 | .20 | -.28 | .16 |  | .09 | .15 | .18 | .14 |

*Note.* *N* = 126 dyads from 51 individuals within 16 teams; \* *p* < .05, \*\* *p* < .01. DV = dependent variable, R = help recipient, H = help giver

## Table S4 Study S1: Results of Indirect Effects predicting Envy

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Receiving more task-related help | |  | Receiving less task-related help | |
| Variables | Status threat | Envy |  | Status threat | Envy |
| Coefficient of the block variable  (i.e., direct effect of matched/mismatched of help giver’s midterm exam score and recipient’s score) | .30\*\*\* (.08) | .20\* (.10) |  | .12 (.12) | .14 (.08) |
| Coefficient of status threat (γstatus threat) | — | .28\*\*\* (.08) |  |  | .32 \*\*\*(.08) |
| Indirect effect via status threat when receiving more task-related help (= .30 \* γstatus threat in more help condition) | — | .09\* |  |  | . |
| Indirect effect via status threat when receiving less task-related help (= .12 \* γstatus threat in less help condition) |  |  |  |  | .04 |
| 95% Monte Carlo confidence interval for the indirect effect | — | [.028, .161] |  |  | [-.036, .125] |

*Note.* Standardized regression coefficients are reported. Standard errors are presented in parentheses. \* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001

## Figure S1. Incongruence effect of recipient’s and help giver’s performance scores on status threat.

Note: The long-dashed line represents the incongruence line, along which help giver’s score is increasing from the left corner to the right corner, that is, in the left corner, help giver’s score is lower than the recipient’s; in the right corner, help giver’s score is higher than the recipient’s. The round-dotted line represents the congruence line, along with the matched scores increases from the front corner to the rear corner.

## Figure S2a. Incongruence effect of recipient’s and help giver’s performance scores on status threat *under the condition of receiving more task-related help*.

Note: The long-dashed line represents the incongruence line, along which help giver’s score is increasing from the left corner to the right corner, that is, in the left corner, help giver’s score is lower than the recipient’s; in the right corner, help giver’s score is higher than the recipient’s. The round-dotted line represents the congruence line, along with the matched scores increases from the front corner to the rear corner.

## Figure S2b. Incongruence effect of recipient’s and help giver’s performance scores on status threat *under the condition of receiving less task-related help*.

Note: The long-dashed line represents the incongruence line, along which help giver’s score is increasing from the left corner to the right corner, that is, in the left corner, help giver’s score is lower than the recipient’s; in the right corner, help giver’s score is higher than the recipient’s. The round-dotted line represents the congruence line, along with the matched scores increases from the front corner to the rear corner.

# **Supplemental Material Study S2: Separate Manipulation Check Study**

## **Study S2: Method**

To further verify if our manipulations of type of help received and relative competence are independent, we conducted a separate manipulation check study. We recruited 299 British citizens via Prolific Academic who participated in this experiment in exchange for financial compensation of £0.3 (US$0.4). After excluding 6 participants who failed an attention check, we had a final sample of 293 participants (144 women; *M*age = 36.53, *SD*age = 11.18; 92.2% White).

We randomly assigned participants to one of the six conditions: 3 (type of help received: task-related help, person-related help, no help received) x 2 (relative competence: high vs. low). After participants read their assigned scenario (see Appendix C in the manuscript), they filled in the manipulation check items (used in Study 3A) presented in a random order which we counterbalanced. That is, half of the participants filled in the manipulation check items for the type of help received first and those for relative competence later, and vice versa.

## **Study S2: Results**

Overall, our manipulations are effective. Table S5 summarizes the results of the post hoc comparisons. First, two-way analyses of variance (ANOVA) on the manipulation check for the relative competence manipulation showed a significant main effect of the manipulation in the expected direction, *F*(1, 287) = 288.22, *p* < .001, η*p*2 = .50. We did not find a main effect of the type of help received manipulation, *F*(2, 287) = 1.60, *p* = .21, η*p*2 = .01, or an interaction between the two manipulations, *F*(2, 287) = 0.69, *p* = .51, η*p*2 = .01.

Second, we conducted a two-way ANOVA on the manipulation check items for the type of help received. In predicting the item indicating the receipt of task-related help, we found a main effect of the type of help received manipulation in the expected direction, *F*(2, 286) = 133.37, *p* < .001, η*p*2 = .48, as well as a significant main effect of the relative competence manipulation, *F*(1, 286) = 4.22, *p* = .04, η*p*2 = .02. Although we did not expect to find a significant main effect of the relative competence manipulation, this is not a major concern because there were no significant differences between the high and low relative competence conditions under the received task-related help and the received no help groups (that is, the conditions for our main hypothesis testing). The interaction between the two manipulations was non-significant, *F*(2, 286) = 0.16, *p* = .85, η*p*2 = .001.

In predicting the item for the receipt of person-related help, results from a two-way ANOVA showed a significant main effect of the type of help received manipulation in the expected direction, *F*(2, 286) = 195.35, *p* < .001, η*p*2 = .58. We did not find a main effect of the relative competence manipulation, *F*(1, 286) = 0.90, *p* = .34, η*p*2 = .003, or an interaction between the two manipulations, *F*(2, 286) = 1.76, *p* = .17, η*p*2 = .01.

In predicting the item for the receipt of no help, results from a two-way ANOVA showed similar results, including a significant main effect of the type of help received manipulation in the expected direction, *F*(2, 287) = 287.90, *p* < .001, η*p*2 = .67, a non-significant effect of the relative competence manipulation, *F*(1, 287) = 0.77, *p* = .38, η*p*2 = .003, and a non-significant interaction between the two manipulations, *F*(2, 287) = 0.98, *p* = .38, η*p*2 = .01.

Taken together, this manipulation check study provided evidence to support that our manipulations are orthogonal.

## Table S5 Study S2: Mean Scores for Manipulation Checks across Experimental Conditions

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dependent variables |  |  | |  | Manipulation check:  Relative competence | |  | Manipulation check:  Received task-related help | |  | Manipulation check:  Received person-related help | |  | Manipulation check:  Received no help | |
| Manipulations |  | More  competent coworker | Less  competent  coworker |  | More  competent coworker | Less  competent  coworker |  | More  competent coworker | Less  competent  coworker |  | More  competent coworker | Less  competent  coworker |  | More  competent coworker | Less  competent  coworker |
| Received task-related help |  | Condition 1 | Condition 2 |  | 3.71246  (0.48) | 2.23135  (0.65) |  | 4.493456  (0.51) | 4.263456  (0.61) |  | 2.733456  (1.30) | 2.34345  (1.05) |  | 2.16456  (1.20) | 2.15456  (1.12) |
| Received person-related help |  | Condition 3 | Condition 4 |  | 3.71246  (0.70) | 2.42135  (0.58) |  | 2.59126  (1.34) | 2.2712  (1.06) |  | 4.691256  (0.51) | 4.611256  (0.61) |  | 2.0856  (1.12) | 1.781256  (0.92) |
| Received no help |  | Condition 5 | Condition 6 |  | 3.53246  (0.83) | 2.26135  (0.76) |  | 2.3312  (1.13) | 2.16123  (1.11) |  | 1.901234  (1.03) | 2.04134  (1.24) |  | 4.761234  (0.43) | 4.801234  (0.46) |

*Note.* Superscripts indicate which conditions are significantly different (*p* < .05) from the focal condition in post hoc comparisons. Condition 1 (N = 49) refers to “received task-related help from a more competent coworker;” Condition 2 (N = 47) refers to “received task-related help from a less competent coworker;” Condition 3 (N = 49) refers to “received person-related help from a more competent coworker;” Condition 4 (N = 49) refers to “received person-related help from a less competent coworker;” Condition 5 (N = 49) refers to “received no help from a more competent coworker;” Condition 6 (N = 49) refers to “received no help from a less competent coworker.”

# **Supplemental Material Study S3: Causal Effect of Status Threat on Envy**

In this study, we manipulated status threat and examined its effect on envy. We pre-registered the research design and analytical procedure (https://aspredicted.org/blind.php?x=hw85jm).

## **Study S3: Method**

***Participants***

We recruited 252 British citizens via Prolific Academic who participated in our experiment in exchange for financial compensation of £0.4 (US$0.55). After excluding four participants who failed the attention check and twenty-seven participants who nominated a non-peer coworker, we had a final sample of 221 participants (153 women; *M*age = 33.24, *SD*age = 10.20). Majority (72.9%) of the participants were working full-time in several industries, including health care, education, retail, and government and public administration.

***Materials and Procedure***

We randomly assigned participants to one of the two conditions (status threat: high vs. low). Participants were asked to choose a peer coworker in their organization whom they worked frequently with and this coworker should be someone who poses (does not pose) a threat to their status, prominence, and position of prestige in their work team. Next, participants were asked to describe in a few sentences about how and why this coworker poses (does not pose) a threat to their status in the work team. Participants then rated the extent to which they envy the nominated coworker using the same episodic envy scale in Studies 1-3A (α = .78). In addition, participants completed the same status threat scale used in Study 2 as a manipulation check (α = .96).

## **Study S3: Results**

***Manipulation Check***

Participants in the high status threat condition (*M* = 3.58, *SD* = 0.53) reported that the nominated peer coworker posed a greater status threat to them as compared to those in the low status threat condition (*M* = 1.52, *SD* = 0.80), *t*(219) = 22.76, *p* < .001, Cohen’s *d* = 3.04. Therefore, our manipulation is successful.

***Main Analysis***

Results from an independent samples t-test showed that participants in the high status threat condition (*M* = 2.54, *SD* = 0.48) reported feeling more envious toward the nominated coworker than those in the low status threat condition (*M* = 1.86, *SD* = 0.70), *t*(219) = 8.41, *p* < .001, Cohen’s *d* = 1.14. Thus, our results provided support for the causal linkage between status threat and envy.

## **Study S3: Appendix: Instructions for the status threat manipulation**

**High status threat condition**

*“Choose a peer coworker in your organization whom you work frequently with and this coworker is someone who poses a threat to your status, prominence, and position of prestige in your work team. Please describe in a few sentences or more about how and why the coworker poses a threat to your status within your work team (at least 30 words).”*

**Low status threat condition**

*“Choose a peer coworker in your organization with whom you work frequently with and this coworker is someone who does not pose a threat to your status, prominence, and position of prestige in your work team. Please describe in a few sentences or more about how and why the coworker does not pose a threat to your status within your work team (at least 30 words).”*

# **Supplemental Material Study S4: Study 3B with a Different Design**

In this study, we manipulated envy and tested whether it affected participants’ intention of social undermining (Hypothesis 3). We also manipulated status striving motivation and examined whether it moderated the effect of envy on intention of social undermining (Hypothesis 4).

## **Study S4: Method**

***Participants***

We recruited 501 British citizens via Prolific Academic who participated in our experiment in exchange for financial compensation of £0.4 (US$0.55). After excluding four participants who failed the attention check and twenty-eight participants who failed the comprehension check, we had a final sample of 469 participants (296 women; *M*age = 35.72, *SD*age = 10.65). Majority (75.3%) of the participants were working full-time in several industries, including health care, education, retail, and government and public administration.

***Materials and Procedure***

We had a 2 (envy: high vs. low) x 2 (status striving motivation: high vs. low) between-participant factorial design. Participants were randomly assigned to read one of four scenarios which we modified from a workplace situation developed by Montal-Rosenberg and Moran (2020). All participants read a scenario (see Appendix D in the manuscript) that asked them to assume the role of an employee working in an IT company, “S. K. Franklins”, as a sales executive responsible for generating net new business as well as maintaining and growing relationships with existing accounts. In addition, they read that they had a coworker, Chris, who was working on the same team and both of them were on the same career track with similar interests and opportunities.

**Status Striving Motivation Manipulation.** In the high (low) status striving motivation condition, participants read that they have a strong (weak) desire to get ahead and (do not) aspire to gain respect and influence at this company. Participants were then informed that there was a new attractive position that opened up in the company. This position was aligned with their long-term goals and would increase their annual salary significantly. Three months later, the division head announced the decision regarding the promotion to this new position and participants learnt that they, together with Chris, and three other candidates were considered for the promotion.

**Envy Manipulation.** In the high envy condition, the division head decided to give the promotion to Chris whereas the participant came in second. In the low envy condition, the division head decided to give the promotion to one of the other three candidates, whereas the participant came in second and Chris came in third.

After reading the scenario, participants rated the extent to which they would engage in social undermining behaviors toward Chris, measured by the same scale of social undermining (Duffy et al., 2002; α = .93) used in Study 3B. As manipulation checks, participants also completed the same envy scale used in Studies 1-3A (α = .92), and three items for status striving motivation which were adapted from Barrick and colleagues (2002) to fit our study context (α = .96).

## **Study S4: Results**

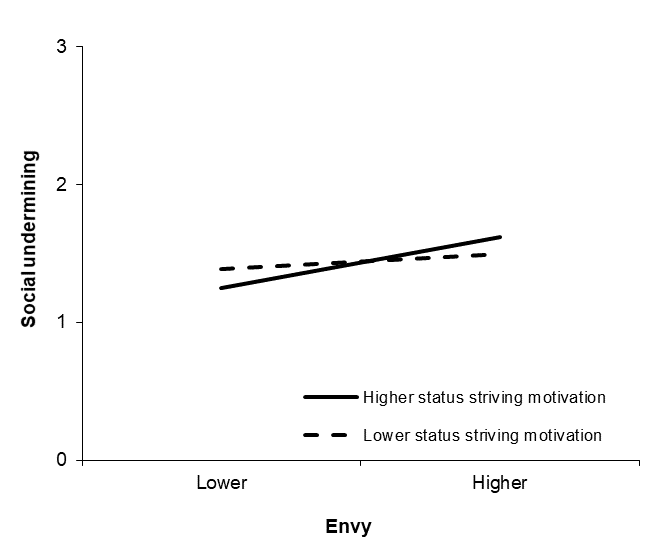
***Manipulation Check***

Overall, our manipulations are effective. First, two-way analyses of variance (ANOVA) on envy ratings for the envy manipulation showed a significant main effect of the manipulation in the expected direction, *F*(1, 465) = 252.38, *p* < .001, η*p*2 = .35. Participants in the high envy condition (*M* = 2.81, *SD* = 0.74) reported feeling more envious as compared to those in the low envy condition (*M* = 1.83, *SD* = 0.58), *t*(467) = 15.80, *p* < .001. There is also a main effect of the status striving motivation manipulation on perceived envy, *F*(1, 465) = 4.71, *p* = .03, η*p*2 = .01. Specifically, participants in the high status striving motivation condition (*M* = 2.43, *SD* = 0.86) reported feeling more envious as compared to those in the low status striving motivation condition (*M* = 2.27, *SD* = 0.79), *t*(467) = 2.02, *p* < .001. The interaction effect between the two manipulations on envy ratings was non-significant, *F*(1, 465) = 2.48, *p* = .12, η*p*2 = .005.

Second, we also conducted ANOVA to test the effects of the manipulations on perceived status striving motivation. There was a significant main effect of the status striving manipulation in the expected direction, *F*(1, 465) = 390.71, *p* < .001, η*p*2 = .46. Participants in the high status striving motivation condition (*M* = 4.31, *SD* = 0.67) reported greater motivation to seek status than those in the low status striving motivation condition (*M* = 2.74, *SD* = 1.02), *t*(467) = 19.69, *p* < .001. We did not find a significant main effect of the envy manipulation, *F*(1, 465) = 0.18, *p* = .67, η*p*2 = .00, or an interaction effect between the two manipulations, *F*(1, 465) = 3.03, *p* = .08, η*p*2 = .01.

***Main Analyses***

To test Hypotheses 3 and 4, we conducted a two-way ANOVA on social undermining. There was a main effect of envy, *F*(1, 465) = 25.12, *p* < .001, η2 = .05. Participants in the high envy condition (*M* = 1.56, *SD* = 0.62) reported a greater intention to undermine Chris than participants in the low envy condition (*M* = 1.32, *SD* = 0.41), *t*(467) = 4.92, *p* < .001. Thus, Hypothesis 3 was supported. There was no main effect of status striving motivation, *F*(1, 465) = 0.04, *p* = .85, η2 = .00. Importantly, there was a significant interaction between envy and status striving motivation, *F*(1, 465) = 7.19, *p* = .01, η2 = .02 (see Figure S3 below). Simple effects analysis showed that participants in the high envy-high status striving motivation condition (*M* = 1.62, *SD* = 0.68) reported a greater intention to undermine Chris than participants in the low envy-high status striving motivation condition (*M* = 1.25, *SD* = 0.30), *t*(227) = 5.33, *p* < .001, Cohen’s *d* = 0.72. In contrast, there was no significant difference in the intention to undermine Chris between participants in the high envy-low status striving motivation condition (*M* = 1.50, *SD* = 0.57) and participants in the low envy-low status striving motivation condition (*M* = 1.39, *SD* = 0.48), *t*(238) = 1.68, *p* = .09, Cohen’s *d* = 0.22. Therefore, Hypothesis 4 was supported.

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## Figure S3. *Interaction between Envy and Status Striving Motivation on Social Undermining*

1. To address the potential concern of the type of envy (i.e. benign envy vs. malicious envy), we recruited 298 employees from Prolific Academic for an online survey asking them to imagine desiring but lacking superior achievements of a coworker, and then to answer questions about how they felt about the coworker. We included our measure of envy, Cohen-Charash’s (2009) measure of episodic envy, and Van de Ven and colleagues’ (2009) measure of benign and malicious envy. Our measure was highly correlated with episodic envy (*r* = .69, *p* < .001), and more correlated with malicious envy (*r* = .42, *p* < .001) than with benign envy (*r* = .17, *p* < .001). [↑](#footnote-ref-1)