

Online Supplemental Material

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Pilot Study

Participants, Procedure, and Materials

A total of 141 graduate students from a participant pool at a private university in the northeastern U.S. received extra credits for participation ($M_{\text{age}} = 21.51$ years, $SD_{\text{age}} = 3.87$ years; 49% female, 50% male; 53% White, 43% Asian, 4% African American, 4% others).

We conducted the study using Qualtrics and randomly assigned participants to one of the two between-subject conditions: higher vs. lower power. Participants imagined that they worked in a consumer products company and had eight coworkers at their rank with whom they interacted frequently.

In the *higher (lower)* power condition, participants read:

At the company, you are given control over *a great deal (very little)* of the organization's resources (e.g., budget, decision making power, task allocation, and personnel decisions), compared with your peers. In other words, you hold *a great deal of (little) power* within your organization. Since your area is *so critical (not important)* to the organization's revenue stream, you are *the most (least) powerful* among your co-workers in the company. *Through your connections, you also have access to a great deal of additional resources (You do not have any connections, through which you could gain access to any additional resources).* You *(do not) get to decide* who to hire and fire as well as who works on what tasks. You also *have a significant say (have no say)* on project deliverables and deadlines. You have *a lot of (little) decision-making power* at work. *You control a lot of aspects of your own and others' work lives (Others control a lot of aspects of your work life).* You feel *very powerful (powerless)* in your daily work.

After reading the scenario, participants were instructed to write two to five sentences describing how they would feel and think in this situation. They then completed a manipulation check and reported their choices of competitive behavior in a series of situations (details below). Finally, participants reported their gender, age, education, and ethnicity.

Measures

Covert competition. Participants reported what they would do in each of the nine situations below by choosing between the two tactics provided (adapted from Liu and Morris 2022). The first option of each question captured overt competition whereas the second captured covert competition.¹ We randomized the display order of situations and of tactics. We tallied the total number of covert tactics reported. $M = 5.75$, $SD = 1.53$.

- 1) When you are competing against a particular coworker, what will you do?
 - I openly reject the coworker's request for assistance.
 - I privately decide not to offer some resources that would assist the coworker.
- 2) When you spot a flaw in a coworker's presentation during a group meeting, what will you do?
 - I constructively raise the concern during the meeting.
 - I express the concern to the team leader privately.
- 3) When you want more challenges at work, how will you ask for it?
 - I ask for it at the team meeting.
 - I ask for it in a one-on-one meeting with the team leader.
- 4) When your work has made significant progress, what will you do?
 - I will present the progress during team meetings.
 - I will document the progress in weekly emails to my manager.

¹ A pretest conducted by Liu and Morris (2022) showed that all pairs of overt and covert tactics were matched on ethicality ($p > .10$) and effectiveness ($p > .10$) and differed only in covertness ($p < .05$).

- 5) When you are competing against a particular coworker, what will you do?
 - I criticize the coworker's performance at a meeting.
 - I criticize the coworker's performance to the boss.
- 6) If you flirt with the boss, how will you do it?
 - I flirt with the boss in front of the other coworkers.
 - I flirt with the boss in private.
- 7) When you want to ask your leader about the criteria for leading a project, when will you ask for it?
 - I ask my leader about the criteria in a group meeting.
 - I ask my leader about the criteria in a one-on-one meeting with the team leader.
- 8) When a team member disagrees with my proposal at the team meeting, what will you do?
 - I will start an impassioned debate with the coworker.
 - I will thank the coworker and then email the team leader about the advantages of my plan.
- 9) When you compete against a particular coworker for an opportunity, what will you do?
 - I will try to intimidate the person by insulting him or her directly.
 - I will derogate the person by saying insulting things behind his or her back.

Overt competition. To measure overt competition, we adopted a scale of dominating conflict resolution style (Rahim, 1983). The five items were “I will use my influence in high-key ways to get my ideas accepted,” “I will use my authority in obvious ways to make a decision in my favor,” “I will use my expertise to make a decision in my favor while it draws others’ attention,” “I will be generally firm in pursuing my side of the issue,” and “I will sometimes use my power in a non-subtle way to win a competitive situation” (1 = strongly disagree, 7 = strongly agree). $M = 4.31$, $SD = 1.08$, $\alpha = 0.79$.

Manipulation check of power. Participants completed a six-item power manipulation check (Lammers et al. 2013) by reporting the extent to which they felt powerful, influential, important, subordinate (R), dependent (R), and powerless (R) from 1 (*not at all*) to 7 (*very much*). $M = 3.98$, $SD = 1.82$, $\alpha = 0.93$.

Results and Discussion

The descriptive statistics and correlations are presented in the table below.

| Variable | <i>M</i> | <i>SD</i> | 1 | 2 | 3 | 4 | 5 |
|----------------------------------|----------|-----------|--------|---------|--------|--------|-------|
| 1. Power (0 = lower, 1 = higher) | 0.50 | 0.50 | | | | | |
| 2. Covert competition | 5.75 | 1.53 | -0.20* | | | | |
| 3. Overt competition | 4.31 | 1.08 | 0.20* | -0.35* | (0.79) | | |
| 4. Power manipulation check | 3.98 | 1.82 | 0.85** | -0.22** | 0.19* | (0.93) | |
| 5. Gender (1 = male, 2 = female) | 1.50 | 0.52 | -0.03 | 0.11 | -0.01 | 0.04 | |
| 6. Age | 21.51 | 3.87 | 0.06 | 0.09 | 0.03 | 0.04 | -0.12 |

Notes. $N = 141$. Alpha reliabilities are reported in parentheses. * $p < .05$. ** $p < .01$ (two-tailed).

Manipulation check. Results revealed that participants in the lower-power condition felt less powerful ($M = 2.44$, $SD = 1.04$) than those in the higher-power condition ($M = 5.53$, $SD = .88$), $t(139) = -18.94$, $p < .001$, $d = 3.19$. Thus, our manipulation was effective.

Hypothesis testing. Supporting Hypothesis 1, participants in the lower-power condition ($M = 6.06$, $SD = 1.47$) were more likely than those in the higher-power condition ($M = 5.44$, $SD = 1.54$) to choose covert competition tactics, $t(141) = 2.42$, $p = .017$; $d = 0.42$, observed power = 0.70. In addition, corroborating previous literature, we found that participants in the higher-power condition ($M = 4.52$, $SD = 1.06$) were more likely to use the overtly competitive style than those in the lower-power condition ($M = 4.09$, $SD = 1.07$), $t(139) = 2.39$, $p = .018$; $d = 0.40$. The results highlight the conceptual distinction between covert and overt competition. They also show that power shaped how people compete:

individuals with higher power were more likely than those with lower power to compete overtly, while the lower-power were more likely to engage in covert competition.

Manipulations in Studies 2 and 3

Manipulation of Power in Study 2

Higher power condition: You have been randomly chosen to serve as the "manager." Taylor has been assigned to be your "worker." You are in charge of assigning the rest of the tasks in Rounds 2, 3, and 4 between you and Taylor. In other words, it is totally up to you to decide who does what tasks.

Lower power condition: You have been randomly chosen to serve as the "worker." Taylor has been assigned to be your "manager." Taylor is in charge of assigning the rest of the tasks in Rounds 2, 3, and 4 between you and him/herself. In other words, it is totally up to Taylor to decide who does what tasks.

Both conditions: Some tasks are interesting and entertaining, whereas other tasks are boring and difficult. Usually, participants prefer to work on the former rather than the latter. Please see the table below for a summary of the tasks.

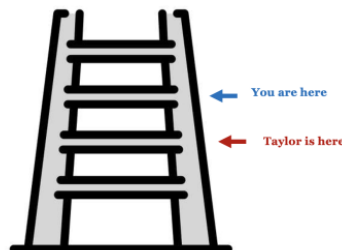
| | Round 2 | Round 3 | Round 4 |
|-----------------------------------|---------------------------------------|--|--|
| Interesting and entertaining task | Reviewing funny videos (2 min) | Evaluating jokes (2 min) | Finding memes online (3 min) |
| Tedious and boring task | Proof-reading legal documents (4 min) | Memorizing and writing down a random string of numbers (4 min) | Solving math problems with given equations (5 min) |

Manipulation of Relative Power and Absolute Power in Study 3

Higher-relative and High-absolute power condition:

Your position at The Ultimate is senior content creator. Your power level is on the 2nd rung. You have control over a great deal of resources (e.g., budget, task allocation, and personnel selection). You have a say in major decisions made in your department. You often control a lot of aspects of your own and others' work lives. In other words, you hold a great deal of power within your organization. You feel powerful in your daily work.

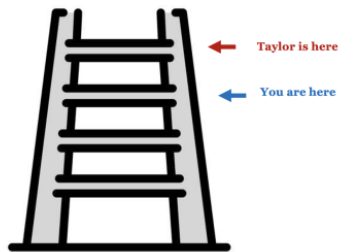
You have a coworker named Taylor. Taylor is a junior content creator. Taylor's power level is at the 3rd rung, one rung below you. You have more autonomy and control over important department resources than Taylor. In other words, you have more power than Taylor. The decisions you make at work may have an impact on Taylor's work. For example, you decide Taylor's project deliverables, timelines, and deadlines. You also evaluate Taylor's performance on some projects and give Taylor feedback. You have more company contacts than Taylor, thus you have more unique and important insider information. You can decide whether to share the information with Taylor. You feel more powerful than Taylor at work.



Lower-relative and High-absolute power condition:

Your position at The Ultimate is senior content creator. Your power level is on the 2nd rung. You have control over a great deal of resources (e.g., budget, task allocation, and personnel selection). You have a say in major decisions made in your department. You often control a lot of aspects of your own and others' work lives. In other words, you hold a great deal of power within your organization. You feel powerful in your daily work.

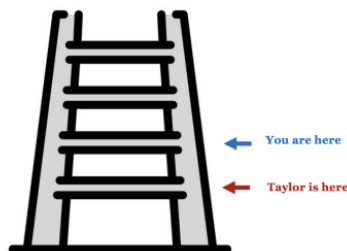
You have a coworker named Taylor. Taylor is also a senior content creator. Taylor's power level is at the 1st rung, one rung above you. Taylor has even more autonomy and control over important department resources than you. In other words, Taylor has more power than you. The decisions Taylor makes at work may have an impact on your work. For example, Taylor decides your project deliverables, timelines, and deadlines. He/she also evaluates your performance on some projects and gives you feedback. Taylor has even more company contacts than you, thus he/she has more unique and important information. He/she can decide whether to share the information with you. You feel less powerful than Taylor at work.



Higher-relative and Low-absolute power condition:

Your position at The Ultimate is junior content creator. Your power level is on the 3rd rung. You have only very limited control over valuable resources (e.g., budget, task allocation, and personnel selection). You do not have much say in major decisions made in your department. You do not control aspects of your own and others' work lives that often. In other words, you hold low power within your organization. You do not feel powerful in your daily work.

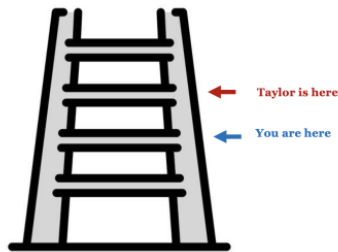
You have a coworker named Taylor. Taylor is also a junior content creator. Taylor's power level is at the 4th rung, one rung below you. Although you have very limited power at work, you still have more autonomy and control over department resources than Taylor. In other words, you have more power than Taylor. The decisions you make at work may have an impact on Taylor's work. For example, sometimes you get to decide Taylor's project deliverables, timelines, and deadlines. You may also evaluate Taylor's performance on projects and give Taylor feedback. You have more company contacts than Taylor, thus you have more unique and important insider information. You can decide whether to share the information with Taylor. You feel more powerful than Taylor at work.



Lower-relative and Low-absolute power condition:

Your position at The Ultimate is junior content creator. Your power level is on the 3rd rung. You have only very limited control over valuable resources (e.g., budget, task allocation, and personnel selection). You do not have much in major decisions made in your department. You do not control aspects of your own and others' work lives that often. In other words, you hold low power within your organization. You do not feel powerful in your daily work.

You have a coworker named Taylor. Taylor is a senior content creator. Taylor's power level is at the 2nd rung, one rung above you. Taylor has more autonomy and control over important department resources than you. In other words, Taylor has more power than you. The decisions Taylor makes at work may have an impact on your work. For example, Taylor decides your project deliverables, timelines, and deadlines. He/she also evaluates your performance on some projects and gives you feedback. Taylor has more company contacts than you, thus he/she has more unique and important information. He/she can decide whether to share the information with you. You feel less powerful than Taylor at work.



Measures of Key Variables

1. Measures of Covert Competition

1.1 Incidents in the Open-Ended Questions of Covert Competition in Studies 1a and 1b

Incident 1: Sales performance is one of the criteria in selecting the award recipient. However, you do not know Taylor's sales records for this quarter because they are kept on his/her shelf in your shared office. The general manager also has a digital copy of everyone's sales records. You are curious about Taylor's sales record. What will you do?

Filler question: Taylor has a Rolex watch that he/she wears every day. One day, he/she cannot find it. Luckily, you find it on the showroom floor. What will you do?

Incident 2: One day at work, the office phone rings. You answer the phone. The caller tells you he saw Taylor's sales ads online and wants to know more information about a car model that you are also familiar with. It is Taylor's day off, so he/she is not in the office. What will you do?

Incident 3: One day you go to the printer room to pick up some printed copies of receipts, you accidentally see Taylor's order confirmation for purchasing two \$200 gift cards from a large department store in town. According to the order confirmation, the names of the gift recipients look familiar. You wonder if Taylor is using the gift cards to bribe clients. What will you do?

Incident 4: It is employee peer review day. You are asked to provide appraisals for your colleagues' performance, skills, and competencies. The appraisals will be submitted to the general manager, who might consider the appraisals in deciding who gets the award. How will you assess Taylor in the review?

1.2 Covert Competition in Studies 3 and 4

- 1) I privately decided not to offer some resources that would assist [coworker name] at work.
- 2) I secretly sabotaged [coworker name]'s work.
- 3) I failed to correct information that [coworker name] got wrong.
- 4) I worked extra hours to complete my work faster/better than [coworker name].
- 5) I procrastinated deliberately to block [coworker name]'s work progress.
- 6) I commented negatively on [coworker name] behind his/her back.
- 7) I did not defend [coworker name]'s decision even if I knew it was good.
- 8) I did not defend [coworker name] when others spread rumors about him/her.

2. Measures of Fear of Repercussions and Alternative Explanations

The scale anchors were 1 = strongly disagree to 7 = strongly agree unless otherwise noted.

2.1 Fear of Repercussions in Studies 1a through 4

- 1) I fear that there will be repercussions from Taylor/[coworker name] if they know I am competing with them.
- 2) I fear that I will experience negative consequences if Taylor/[coworker name] finds out my competitive motive.
- 3) I fear that bad things may happen to me at work if Taylor/[coworker name] knows my competitive motive.

2.2 Relational Concerns in Studies 1a and 1b

- 1) I care about Taylor's opinion of me.
- 2) It is important to me to get along well with Taylor.
- 3) I will pay attention to what Taylor is thinking and feeling.

- 4) I care tremendously about maintaining a good relationship with Taylor.
- 5) I would go out of my way to build a good relationship with Taylor.
- 6) I would be worried if my relationship with Taylor is worsened.
- 7) Having a good relationship with Taylor is very important to me.

2.3 Attachment Anxiety in Study 3

- 1) I worry that my coworkers in The Ultimate won't care about me as much as I care about them.
- 2) I'm afraid that my colleagues in my company may avoid me.
- 3) I worry that other people in The Ultimate do not really care for me.

2.4 Attachment Avoidance in Study 3

- 1) I think it would help to turn to coworkers in The Ultimate in times of need. (R)
- 2) I would discuss my problems and concerns with others at work. (R)
- 3) I would talk things over with people in The Ultimate. (R)
- 4) I would find it easy to depend on others in The Ultimate. (R)
- 5) I wouldn't feel comfortable opening up to others in The Ultimate.
- 6) I would prefer not to show my colleagues how I feel deep down.

2.5 General ([Competitor-Specific]) Paranoia in Study 4

- 1) I feel like my colleagues/[coworker name] have/has it in for me.
- 2) If my colleagues/[coworker name] are/is nice to me, they/s(he) must have hidden reasons.
- 3) I feel like my colleagues/[coworker name] may use unfair means to get advantages.
- 4) I am sure people in my company/[coworker name] are/is talking about me behind my back.
- 5) People around me/[coworker name] will be friendly to me only when they/s(he) need something from me.
- 6) People in my company/[coworker name] don't/doesn't really care much what happens to be at work.
- 7) It is safer not to trust the people around me/[coworker name].
- 8) I feel like my colleagues/[coworker name] look(s) at me critically.

3. Measure of Escapability in Study 4

- 1) It is easy for me to find a new job (with another employer) with approximately the same or better income and fringe benefits I currently have.
- 2) It is feasible for me to leave my current job for a job similar to or better than my current one.
- 3) It is easy for me to switch to a job that provides comparable or better pay and perks than I now have.
- 4) There are plenty of attractive and attainable alternative jobs available to me in the labor market.
- 5) If I try, it will be easy for me to move to a job or an organization that I prefer over my current ones.

4. Manipulation Check of Power

4.1 Manipulation Check of Relative Power in Studies 1a through 4

(1 = I have a lot less to 7 = I have a lot more)

- 1) To what extent do you control valuable resources compared to Taylor/[coworker name]?
- 2) How much authority do you have compared to Taylor/[coworker name]?
- 3) How much decision-making power do you have compared to Taylor/[coworker name]?

4.2 Manipulation Check of Absolute Power in Study 3

- 1) I have a great deal of power (i.e., control over valuable resources) at work.
- 2) My designated role allows me to control a lot of resources (e.g., decision-making power, information, etc.).

- 3) I have a say in important decisions (e.g., project deliverables, deadlines, budgets, etc.) made in the department.

5. Measures of Social Undermining, Interpersonal Deviance, and Ostracism in Study 3

5.1 Social Undermining

- 1) I will insult Taylor at work.
- 2) I will belittle Taylor or his/her ideas.
- 3) I will criticize the way Taylor handles things on the job in a way that is not helpful.
- 4) I will let Taylor know I do not like him/her or do not like something about him/her.

5.2 Interpersonal Deviance

- 1) I will make fun of Taylor.
- 2) I will say something hurtful to Taylor.
- 3) I will make an ethnic, religious, or racial remark about Taylor.
- 4) I will curse at Taylor.
- 5) I will play a mean prank on Taylor.
- 6) I will act rudely toward Taylor.
- 7) I will publicly embarrass Taylor.

5.3 Ostracism

- 1) I will leave the area when Taylor enters.
- 2) I will not answer Taylor's greetings at work.
- 3) I will avoid Taylor at work.
- 4) I will not look at Taylor at work.
- 5) I will refuse to talk to Taylor at work.
- 6) I will treat Taylor as if he/she wasn't there.

Factorial ANOVAs in Studies 2 and 3 and Regression in Study 4 on Manipulation Checks

Study 2

We performed a two-way ANOVA to analyze the interactive effects of the *manipulations* of power and escapability on the *manipulation check* of power. Results did not reveal a significant interaction, $F(1, 432) = 0.09, p = 0.764, \eta_p^2 = 0.002$. We also did not find a significant “cross-over” main effect of the manipulation of escapability on the manipulation check of power, $t(434) = -0.11, p = 0.910$. These results showed that our manipulations were orthogonal.

Study 3

We performed a two-way ANOVA to analyze the interactive effects of the *manipulations* of relative power and absolute power on the *manipulation checks* of relative power and absolute power. Results did not reveal any significant interactions on the manipulation check of relative power, $F(1, 348) = 0.91, p = 0.342$, or on the manipulation check of absolute power, $F(1, 348) = 0.09, p = 0.771$. Whereas the main effect of the manipulation of relative power on the manipulation check of absolute power was significant, $t(351) = -33.90, p < 0.001$, the main effect of the manipulation of absolute power on the manipulation check of relative power was not significant, $t(351) = 0.68, p = 0.499$.

Study 4

We performed a regression to analyze the interactive effects of relative power condition (0 = lower versus 1 = higher) and self-reported escapability on the *manipulation check* of relative power at T1. Results did not reveal a significant interaction, $B = -0.04, p = 0.586$. The main effect of perceived escapability on the manipulation check of relative power was also not significant, $B = 0.12, p = 0.104$.

Development and Validation of (a) Covert Competition and (b) Fear of Repercussions Scales

We developed the items to capture covert competition and fear of potential repercussions. First, the authors independently developed the items based on the conceptualizations of the two constructs. Based on the discussion among the authors, the final items were selected for their high face validity. We consulted five experts in the field, who agreed that the final items represented the constructs.

Next, we performed confirmatory factor analyses to evaluate the factor structures of the items. For each of the constructs, all items loaded strongly onto one factor in all studies. See table below for item factor loadings and scale Cronbach's reliabilities.

| Items | Factor Loadings | | | | |
|--|-----------------|----------|---------|---------|---------|
| | Study 1a | Study 1b | Study 2 | Study 3 | Study 4 |
| <i>Fear of repercussions</i> | | | | | |
| 1. I fear that there will be repercussions from Taylor if Taylor knows that I am competing with him/her. | 0.96 | 0.92 | 0.96 | 0.96 | 0.89 |
| 2. I fear that I will experience negative consequences if Taylor finds out my competitive motive. | 0.97 | 0.95 | 0.97 | 0.97 | 0.93 |
| 3. I fear that bad things may happen to me at work if Taylor knows my competitive motive. | 0.97 | 0.91 | 0.95 | 0.95 | 0.91 |
| Sample size | 209 | 240 | 436 | 353 | 396 |
| Cronbach's α | 0.98 | 0.92 | 0.95 | 0.96 | 0.95 |
| | | | Study 3 | | Study 4 |
| <i>Covert competition</i> | | | | | |
| 1. I privately decided not to offer some resources that would assist [coworker name] at work. | | 0.75 | | 0.72 | |
| 2. I secretly sabotaged [coworker name]'s work. | | 0.79 | | 0.84 | |
| 3. I failed to correct information that [coworker name] got wrong. | | 0.77 | | 0.77 | |
| 4. I worked extra hours to complete my work faster/better than [coworker name]. | | 0.65 | | 0.61 | |
| 5. I procrastinated deliberately to block [coworker name]'s work progress. | | 0.85 | | 0.87 | |
| 6. I commented negatively on [coworker name] behind his/her back. | | 0.83 | | 0.79 | |
| 7. I did not defend [coworker name]'s decision even if I knew it was good. | | 0.81 | | 0.78 | |
| 8. I did not defend [coworker name] when others spread rumors about him/her. | | 0.84 | | 0.80 | |
| Sample size | | 353 | | 396 | |
| Cronbach's α | | 0.87 | | 0.86 | |

Confirmatory Factor Analysis of Covert Competition and Other Constructs in Study 3

| Measurement Models | χ^2 | df | CFI | SRMR | RMSEA | $\Delta\chi^2$ |
|---|------------|----|------|------|-------|----------------|
| Covert Competition and Social Undermining | | | | | | |
| 2 Factors | 473.74*** | 53 | 0.88 | 0.07 | 0.15 | |
| 1 Factor | 1007.32*** | 54 | 0.73 | 0.11 | 0.22 | 533.58*** |
| Covert Competition and Interpersonal Deviance | | | | | | |
| 2 Factors | 935.33*** | 89 | 0.85 | 0.08 | 0.16 | |
| 1 Factor | 1746.04*** | 90 | 0.70 | 0.14 | 0.23 | 810.71*** |
| Covert Competition and Ostracism | | | | | | |
| 2 Factors | 604.33*** | 76 | 0.89 | 0.06 | 0.14 | |
| 1 Factor | 1297.87*** | 77 | 0.75 | 0.12 | 0.21 | 693.54*** |

Notes. $N = 352$. We used Anderson and Gerbing's (1988) method. CFI = comparative fit index; SRMR = standardized root mean square residual; RMSEA = root mean square error of approximation. $\Delta\chi^2$ = change in chi square between the one-factor models and the two-factor models. *** $p < 0.001$ (two-tailed).

References

This list includes references that are not cited in the manuscript.

Liu S, Morris M (2022) Covert competition in collectivistic cultures: The role of relational mobility. Unpublished manuscript, Columbia University, New York.

Rahim MA (1983) A measure of styles of handling interpersonal conflict. *Acad. Management J.* 26(2):368–376.