Two Ways to Stay at the Top: Prestige and Dominance Are Both Viable Strategies for Gaining and Maintaining Social Rank Over Time

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Abstract

The dual-strategies theory of social rank proposes that both dominance and prestige are effective strategies for gaining social rank (i.e., the capacity for influence) in groups. However, the only existing longitudinal investigation of these strategies suggests that, among undergraduate students, only prestige allows people to maintain social rank over time. The current study provides a longitudinal test of dominance and prestige in a context where dominance is more normative: MBA project groups. Among 548 MBA students in 104 groups, peer-rated dominance and prestige predicted gains in social rank over the course of 4 weeks, indicating that both strategies may help people not only gain social rank but also maintain it over time. Furthermore, prestige—but not dominance—led to social rank because of willingly given deference from group members. This confirms a central but thus-far-untested principle of dual-strategies theory: While prestige is based on freely conferred deference, dominance is not.

Keywords

hierarchy, dominance, prestige, social rank, deference

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Humans' attempts to navigate social hierarchies can be distilled into two fundamental strategies: dominance and prestige (Cheng et al., 2013; Garfield & Hagen, 2020; Kracke, 1978; Maner & Case, 2016). A dominance-based approach consists of the use of force or coercion to demand compliance from other group members, whereas a prestige-based approach involves demonstrating valued skills and traits so others follow willingly (Cheng & Tracy, 2014; Henrich & Gil-White, 2001). A growing body of evidence suggests that both dominance and prestige are effective ways to obtain high social rank (i.e., a position in a group that affords a relatively high capacity for social influence; Cheng et al., 2013).

Yet, research on the efficacy of the two strategies has mostly centered on the initial formation of social hierarchies, with a focus on ephemeral interactions in short-term, highly controlled groups, such as laboratory task groups (e.g., Cheng et al., 2013). Left relatively unexplored are the roles of dominance and prestige in longer term interactions. One study of undergraduate students suggests that dominance may be effective in short-term groups but that its effectiveness wanes over time (Redhead et al., 2019). This suggests that in naturalistic long-term contexts, dominance may not be an effective strategy for maintaining high social rank (see also Anderson & Brown, 2010; Gintis et al., 2015; Ridgeway, 2019).

Another open question centers on whether dominance truly leads to social rank at all (regardless of the timeframe of the interaction), with some scholars suggesting that dominance does not contribute to social rank in naturalistic, modern social hierarchies (e.g., Durkee et al., 2020). To bring greater clarity to this debate, we distinguish between a person's social rank (their capacity for influence within a group) and the degree to which others freely defer to them (providing them with social status). Although group members may not freely defer to a dominant individual (and thus the dominant person may not have high social *status*), dominance

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may still be an effective way of achieving and maintaining high *social rank*, insofar as it affords the capacity for influence over others.

In short, we suggest that dominance and prestige may both serve as effective strategies for gaining and maintaining social rank over time. We test the viability of dominanceand prestige-based strategies over time in a sample of 548 adult Master of Business Administration (MBA) students collaborating in project-based teams. This study provides one of the first longitudinal investigations of dominance and prestige and the first longitudinal investigation of these strategies in a non-undergraduate population. This study also advances the literature by testing whether prestige and dominance predict social rank and deference over and above other factors known to impact social rank, including perceived competence, social affinity, and gender.

Dominance and Prestige as "Two Ways to the Top"

The dual-strategies theory of social rank suggests that humans navigate hierarchies by using dominance or prestige-based strategies (Cheng & Tracy, 2014; Maner, 2017).¹ Dominance involves the use of force, intimidation, or coercion to influence others (Cheng & Tracy, 2014; Ketterman & Maner, 2021; Maner, 2017). Dominant individuals often behave in ways that prioritize their own self-interest and power above the interests of fellow group members (Maner & Mead, 2010). Dominant leaders are typically seen as strong and agentic (Chou, 2018; Witkower et al., 2019) and able to coordinate and defend group members during times of uncertainty and threat (Kakkar & Sivanathan, 2017; Laustsen & Petersen, 2017).

Prestige involves garnering respect and admiration by demonstrating valued skills and traits. This strategy does not require force or compulsion rather, group members offer freely conferred deference because they believe the prestigious individual embodies characteristics or knowledge that are worthy of respect and emulation (Henrich & Gil-White, 2001). Although dominance is associated with the pursuit of power (i.e., the asymmetric control of valued resources; Magee & Galinsky, 2008), prestige is associated with the pursuit of status (i.e., respect and admiration; Case et al., 2018).

Dual-strategies theory suggests that both dominance and prestige are effective strategies for obtaining high social rank. In one lab-based study, for instance, participants high on either peer-rated dominance or prestige were seen as more influential by both their group members and outside observers and wielded more objective influence over group decision-making (Cheng et al., 2013). This indicates that both dominance and prestige lead to social rank during initial group formation (at least in short-term groups of strangers who have little opportunity for future interaction).

The Efficacy of Dominance and Prestige Over Time

Because a prestige-based approach involves demonstrating valuable traits like generosity and expertise (Henrich & Gil-White, 2001; Price & van Vugt, 2014), it is plausible that prestige would lead to social rank both initially and after extended interaction (Cheng, 2020). Because many valued traits may not be immediately apparent to other group members (Bunderson, 2003), it is possible that prestige maybe even more effective after extended interaction, once such valued traits have been recognized and appreciated.

The long-term viability of dominance is less clear. Dominance is associated with selfish behaviors that can be costly to other group members and group functioning (Case & Maner, 2014; Maner & Mead, 2010). Over time, group members may detect such behavior and react with "leveling mechanisms" that undermine the social rank of dominant individuals (Boehm, 1993; Gintis et al., 2015; Lukaszewski et al., 2016). Moreoever, if exit is an option, those exploited by dominant leaders may leave the group. Traits related to dominance—including narcissism and extraversion—are also associated with high social rank initially but not over time (Bendersky & Shah, 2013; Leckelt et al., 2015). Such evidence points to the potential fragility of dominance in longer term groups (Cheng, 2020).

Consistent with this, Redhead et al. (2019) reported a 16-week longitudinal investigation of dominance and prestige in undergraduate student project teams. Although peerreported dominance and prestige were associated with higher initial social rank, the efficacy of dominance waned progressively over time, and dominance was unrelated to social rank by the end of the study. In contrast, prestige was increasingly associated with high social rank over the course of the study.

Yet, the Redhead et al. study examined undergraduate psychology students, a sample that might be particularly prone to dislike dominance. Both psychology students and undergraduates more broadly tend to hold more egalitarian ideals than the general population (Ferber & Young, 1997; Inbar & Lammers, 2012). Undergraduates are also at a developmental stage associated with a need for autonomy (Inguglia et al., 2015), which may make them particularly resistant to forceful directives from dominant leaders. This may diminish as adults engage in employment and relationship commitments (Roberts et al., 2005, 2010) and gain experience in workplaces that tend to be hierarchically structured. Thus, while undergraduate psychology students might react poorly to dominant leaders who threaten their autonomy and egalitarian ideals, a similar tendency might not be present in other social contexts. For example, business students are, on average, more competitive and selfassured than others (Bohlmeyer et al., 1985). Consequently,

business students may view dominance as more normative and acceptable, potentially increasing the viability of dominance as a long-term strategy for maintaining social rank in this context.

Beyond different norms, there are other reasons to think that dominance may be a viable strategy for maintaining social rank over time. Investigation of established groups suggests that dominance is associated with high social rank in long-term settings. Studies examining long-term groups who interact regularly outside the lab (e.g., sports teams, chess clubs, and knitting groups) reveal that peer-reported dominance and prestige both predict social rank (Brand & Mesoudi, 2019; Cheng et al., 2010). Anderson et al. (2020) found that among professional adults, peer-rated dominance was positively associated with perceptions of power within their current organization. The relationship between dominance and social rank extends beyond WEIRD (Henrich et al., 2010) populations: among forager-horticulturalists in Ethiopia and small-scale Amerindian societies, both dominance and prestige yield greater community-wide influence (Garfield & Hagen, 2020; von Rueden et al., 2011). The positive relationship between dominance and social rank in established groups suggests that dominance may lead to high social rank over the long term.

Furthermore, hierarchies tend to be established very early on in group interactions and remain relatively stable over time (Anderson et al., 2001; Báles et al., 1951; Berger et al., 1980). Due to the self-reinforcing nature of hierarchy, individuals who achieve positions of high social rank tend to retain those positions over time (Magee & Galinsky, 2008). Thus, if both dominance and prestige result in higher social rank early on in group interactions, this heightened social rank could endure over time by virtue of the self-reinforcing nature of social hierarchies.

Social Rank Versus Deference

Although dominance may lead to *social rank* over time, it is unlikely to do so via *freely conferred deference*. We define social rank as a position within a social hierarchy that affords the capacity to influence others (Blader & Chen, 2014; Cheng et al., 2013; McClanahan, 2020). In contrast, many social hierarchy researchers focus on status (the respect and admiration of others; Anderson et al., 2015). Status-based hierarchies rely on freely conferred deference; people willingly follow the opinions and desires of respected group members (Anderson et al., 2012). While status results in one form of social rank, one can have social rank without status. For example, a ruthless and unhinged drug lord may not be respected by his associates but is nonetheless undoubtedly at the top of his social hierarchy, as he has outsized influence on the group and others do his bidding.

Some investigations seem to assume that human social hierarchies are built solely on status. For example, in one recent investigation, Durkee et al. (2020) reported that people do not believe that status is conferred to individuals who behave dominantly. The authors therefore questioned the viability of dominance as a strategy for ascending social hierarchies. Yet Durkee et al. relied on participants' hypothetical assessments of which behaviors lead to "status and respect." In doing so, they implicitly ruled out the possibility that people can ascend hierarchies through means other than freely conferred deference. Indeed, measures that focus solely on status or freely conferred deference likely obscure the primary means (e.g., intimidation and coercion) by which dominant people attain high social rank.

In short, we suggest that social rank can be granted or claimed. Although the prestige strategy likely works because fellow group members freely defer to prestige-based individuals, the dominance strategy relies on the claiming of social rank: Dominant individuals may obtain positions of social rank without the deference of fellow group members (Waal-Andrews et al., 2015). To highlight this distinction, we investigate the impact of dominance and prestige on both social rank (capacity for influence within the group) and deference (the degree to which group members willingly follow the target). We also test whether the relationships among dominance, prestige, and social rank are mediated by deference. This allows us to demonstrate what we consider to be an important but often-overlooked nuance in hierarchy research: that not all leaders obtain social rank via the freely conferred deference of fellow group members.

Accounting for Potential Confounding Variables

A major limitation of the extant work on dual-strategies theory is that dominance and prestige have—for the most part not been differentiated from other related (and potentially confounding) constructs (McClanahan, 2020). This makes it difficult to determine the unique impact of dominance and prestige on social rank: Previously established effects of dominance and prestige could reflect effects of other unmeasured correlates of dominance and prestige.

For example, considerable evidence suggests that social rank is granted to those who are seen as competent (DeRue et al., 2015; Judge et al., 2004), leading some to argue that dominance and prestige merely reflect domain-specific competence (Anderson & Kilduff, 2009; Chapais, 2015). Indeed, the only study (to our knowledge) that considered dominance and prestige above and beyond competence concluded that dominance and prestige did not predict group leader selection after controlling for task-specific competence (Brand & Mesoudi, 2019). Another study found that dominance predicted power beyond competence but did not distinguish competence from prestige (Anderson et al., 2020).

Hierarchies are also determined in part by social affinity: People tend to defer to those they enjoy socially (Casciaro & Lobo, 2015; Joshi & Knight, 2014). Despite some evidence that dominance and prestige are distinct from social affinity, prestige is positively associated with likability (Brand & Mesoudi, 2019; Cheng et al., 2013). We therefore control for social affinity when examining the effects of dominance and prestige.

Finally, we consider dominance, prestige, and social rank while controlling for gender. Although there has unfortunately been little explicit theorizing around gender in dual-strategies theory (McClanahan, 2020), empirical work in this area tends to find that the relationships between dominance, prestige, and social rank are not moderated by gender (Cheng et al., 2013). This is somewhat surprising, given previous work suggesting that dominant or agentic women experience backlash (Rudman & Glick, 1999; Williams & Tiedens, 2016), an effect that may be particularly pronounced in predominately male spaces (Rudman & Phelan, 2008), such as MBA programs (Wallen et al., 2017).

There are boundary conditions, however, that may ameliorate backlash against dominant women in MBA contexts. For example, while agentic women are sometimes seen as unlikable, they are also rated as competent and capable of leadership, especially in contexts where group goals are not overtly communal (Rudman & Phelan, 2008). The backlash against dominant women is also suspended when women are seen as being assertive in the service of others (Amanatullah & Tinsley, 2013). Thus, in MBA contexts, dominant women may be disliked but still seen as competent leaders who use their assertiveness to accomplish group goals. Supporting this, dominant women appear just as likely as dominant men to obtain high social rank in their post-MBA careers (Anderson et al., 2020; O'Neill & O'Reilly, 2011). Thus, in ancillary analyses, we also examine whether the impact of dominance and prestige on social rank and deference is moderated by gender.

The Present Research

To address open questions about the viability of dominance and prestige over time, we conducted a longitudinal investigation of the relationships among dominance, prestige, deference, and social rank in MBA project groups. To capture group hierarchies both as they are first established and after they have been solidified, we investigated the links between dominance, prestige, and social rank after the first hour or two of group interaction and then again after the groups had many subsequent interactions. To provide a rigorous test of our hypotheses, we tested the efficacy of dominance and prestige above and beyond other known determinants of social rank (competence, social affinity, and gender). We also tested the hypothesis that the effects of prestige (but not dominance) would be explained by the freely conferred deference of group members.

Our work constitutes one of the first longitudinal investigations of dominance and prestige and therefore provides important insight into one of dual-strategies theory's most important questions. Beyond that, we also provide the first empirical investigation into dominance and prestige in an MBA context. This is an important step forward, as MBA students may be more accepting of dominance (or may be more dominant themselves) compared with the undergraduate students who have been the focus of most prior work on dominance and prestige. Confirming this, a pilot study of 74 MBA and 223 undergraduate students confirmed that MBA students viewed dominance as more normative and acceptable than undergraduate students did (full details of the pilot study are available in the Supplemental Materials).

Method

Participants and Procedure

Participants were recruited from eight sections of a required leadership course in an MBA program at a private university.² This course is taken by MBA students immediately upon matriculation; the structure and content of the course are virtually identical across all sections. Students took an expedited version of the course in which they attended two weeks of intensive lectures and then completed a group project in the month following the lecture period. The group project consisted of collecting data and compiling it into a 10-page report, which required the students to work together extensively. Participants were randomly assigned to project groups by their professor.

Data collection took place at two time points that capture social hierarchy dynamics at initial group formation and then after subsequent interactions. The first time point was at the beginning of the group project. At this point, participants had worked together as a group for approximately one to two hours (having collaborated on a 45minute in-class exercise and a 1-page out-of-class assignment), so group members were familiar with each other but had limited experience working as a group. The second wave of data collection took place at the completion of the group project four weeks later. Participants received a US\$25 Amazon gift card and a personalized leadership report upon completion of the study.

The sample size was determined by the size of the MBA classes; we invited all 548 students in these classes to participate. Of these, 362 participants completed the survey at Time 1 (hereafter termed T1; for a participation rate of 66.06%) and 276 participants completed the survey at Time 2 (hereafter termed T2; for a final participation rate of 50.36% and a retention rate of 76.24%).³ Participants were embedded in 104 mixed-gender groups of five to six students. The sample of respondents was 43.37% female (157 women and 205 men). The average age was 27.86 years (SD = 2.13). Due to the round-robin nature of the data (in which participants answered questions about every member of their group), our study provides peer-reported data about all 548 students in these classes. Due to targets receiving ratings

from multiple group members, there were a total of 1,438 observations at T1 and 1,228 observations at T2. 4,5,6

Measures

Peer-reported dominance and prestige. At both T1 and T2, participants reported their perceptions of group members' dominance and prestige strategies (Cheng et al., 2010, 2013) Group members rated how much each statement described their group members on a scale from 1 (Not at All) to 7 (Very Much). Prestige items were "Others seek his/her advice on a variety of matters," "His unique talents/abilities are recognized by other members of the group," and "He/she is considered an expert on some matters by others" (T1 α = .87; T2 α = .89).⁷ Dominance items were "He/she often tries to get his/her own way regardless of what others in the group may want," "He/she enjoys having control over other members of the group," "He/she is willing to use aggressive tactics to get his/her way," and "He/she tries to control others rather than permit them to control him/her" (T1 α = .93; T2 $\alpha = .93$).

Peer-reported social rank. T1 and T2 peer-rated social ranks were measured as continuous variables for each group member. Participants reported the extent to which they agreed with each of the following statements on a scale from 1 (Very Strongly Disagree) to 7 (Very Strongly Agree): "This person has a relatively strong influence within the group" and "This person leads the group" (T1 r = .77, p < .001; T2 r = .82, p < .001).⁸

Peer-reported deference. To assess freely conferred deference, participants used a scale from 1 (*Very Strongly Disagree*) to 7 (*Very Strongly Agree*) report the extent to which they agreed with "I defer to this person's work-related opinions and inputs in the group" (Joshi & Knight, 2014). This measure was designed to tap into individuals' personal tendency to defer to the target group members, rather than the target's influence on the group as a whole.

Control variables. Participants rated each group member on their perceived competence ("This person makes valuable work-related contributions to the group") and social affinity ("I think I would enjoy spending time with this person socially") at both time points (Joshi & Knight, 2014). Questions were answered on a scale from 1 (*Very Strongly Disagree*) to 7 (*Very Strongly Agree*).

Other measures. In addition to the variables mentioned earlier, participants reported on their demographic characteristics (including gender, age, and industry/field of work prior to their MBA) and completed self-reported measures of dominance and prestige at T1 and group identification and subjective group performance at T2. We focus on peer reports rather than self-reports of dominance and prestige because peer reports are a more valid method of measuring dominance and prestige (Cheng et al., 2010). Results with self-report measures (reported in the Supplemental Materials) show that self-reported prestige and dominance do not consistently relate to peer-reported social rank.⁹

Analysis strategy. The round-robin nature of our study yielded a nested data structure. To account for non-independence within raters and targets, we used multilevel modeling with a random intercept term for both the rater and the target, per the recommendation of Judd et al. (2012). This accounts for the nested structure of the data by allowing the intercept of the model to be estimated separately for each rater and target.¹⁰

Targets and raters were also nested within project groups. However, intraclass correlations indicated that very little variance in social rank was due to clustering at the group level,¹¹ so we did not model clustering at the group level to maintain statistical power. However, we were interested in participants' *relative* position within their groups, so we group-mean centered all peer-rated variables (social rank, dominance, prestige, social affinity, and competence; Snijders & Bosker, 1999).

Because significance testing is not appropriate for random effects in multilevel modeling (Bates et al., 2015), we do not report p values on variance estimates. We estimated random intercepts, but not random slopes, because our main research questions did not involve the variability of effects across groups.

Our main analyses focus on peer-reported dominance and prestige as they predict social rank at T1, T2, and changes in social rank over time as well as changes in deference over time (all while controlling for perceived competence, social affinity, and gender). We also test whether social affinity and competence mediate changes in social rank and deference over time. In the Supplemental Materials, we report exploratory analyses addressing curvilinear effects of dominance and moderation by gender.

Results

Predicting T1 Social Rank Cross-Sectionally

Descriptive statistics and correlations among study variables are shown in Table 1. We first modeled T1 social rank as a function of T1 perceptions of dominance and prestige, while controlling for peer-rated social affinity and competence, as well as target and rater gender. Random and fixed effects from all non-mediational models are in shown in Table 2.

Peer-rated dominance and prestige were both positively related to peer-rated social rank at T1, above and beyond the positive effects of social affinity and competence. Rater gender was marginally associated with social rank, with female raters ascribing targets higher social rank than male raters.

Table I. Means, Standard Deviations, and Correlations.

Variable	М	SD	I	2	3	4	5	6	7	8	9	10
I. TI Social Rank	4.21	1.28										
2. TI Dominance	2.90	1.39	.34***									
3. TI Prestige	4.36	1.08	.58***	.08***								
4. TI Social Affinity	5.02	1.44	.38***	21***	.41***							
5. TI Competence	5.18	1.19	.61***	02	.59***	.44***						
6. T2 Social Rank	4.32	1.43	.64***	.21***	.47***	.32***	.49***					
7. T2 Dominance	2.71	1.42	.30***	.66***	.06*	15***	.04	.30***				
8. T2 Prestige	4.45	1.19	.46***	.05†	.58***	.35***	.44***	.66***	.10**			
9. T2 Social Affinity	5.08	1.52	.30***	18***	.36***	.69***	.38***	.45***	21***	.48***		
10. T2 Competence	5.26	1.32	.41***	02	.39***	.34***	.53***	.72***	.03	.62***	.53***	
II. Target Gender	0.64	0.48	10***	02	04	05†	13***	15***	06*	08***	02	 4 ***

Note. Gender was coded 0 = female, I = male. TI = Time I; T2 = Time 2. $^{\dagger}p < .10$. $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

We also tested whether the relationship between prestige and social rank at Time 1 was significantly stronger than the relationship between dominance and social rank at Time 1. We did this by testing whether constraining the dominance and prestige parameters to be equal significantly reduced model fit (per a chi-square difference test; Bentler & Satorra, 2010). Forcing these parameters to be equal did not significantly reduce model fit, indicating that prestige was not a significantly stronger (or weaker) predictor of social rank at T1 than was dominance ($\Delta \chi^2 = 1.52$, p = .218).

Predicting T2 Social Rank Cross-Sectionally

We next predicted T2 social rank from T2 peer reports of dominance, prestige, social affinity, and competence (again controlling for target and rater gender and including random effects for the intercept at target and rater levels).

Similar to the T1 results, T2 dominance and prestige were both positively associated with T2 social rank, even when controlling for T2 social affinity and T2 competence (both of which were also positively related to T2 social rank). Rater gender was not associated with T2 perceived social rank, but male targets had marginally lower social rank than female targets. Thus, even after extended interaction across a 4-week period, individuals who were regarded as higher in dominance or prestige were seen as having significantly higher social rank than those who were lower on dominance and prestige.

We again used a nested model comparison to test whether dominance or prestige was a significantly stronger predictor of social rank at T2. Prestige was a marginally stronger predictor of social rank at T2 than was dominance ($\Delta \chi^2 = 3.04$, p = .081)

Predicting Changes in Social Rank Longitudinally

In our third model, we predicted T2 social rank as a function of T1 dominance and prestige while controlling for T1 social rank. This model tests changes in social rank over the course of the project (cf. Bendersky & Shah, 2012; DeRue et al., 2015). This model included the same controls and random intercepts as prior models. As can be seen in Table 2, T1 social rank significantly predicted T2 social rank, consistent with prior work demonstrating stability in social rank (e.g., Redhead et al., 2019; Savin-Williams, 1976). Furthermore, we found that both T1 prestige and T1 dominance positively predicted increases in social rank over time. Thus, individuals regarded as high in dominance or prestige tended to experience increases in social rank over the course of the study, compared with less dominant or prestige-based peers.

Although not hypothesized, we also found an effect of target gender over time: Men, relative to women, were significantly less likely to gain social rank over the course of the study. We found no significant effect of rater gender on changes in social rank.

In the Supplemental Materials, we report analyses testing whether the effects mentioned earlier were moderated by gender. Some (but not all) models indicated that the effects of prestige and dominance on social rank were somewhat stronger for men (compared with women). This may be because women who were low on prestige (and/or dominance) tended to have higher social rank than men who were low on prestige (and/or dominance). Nonetheless, the key effects reported earlier were not unique to either gender: Dominance and prestige had a positive effect on social rank for *both* men and women.

Predicting Changes in Deference Longitudinally

As a contrast to our social rank measure, we tested whether dominance and prestige at T1 predicted gains in *deference* over time. The full results for this model are in Table 2. Prestige significantly predicted gains in deference over time. In contrast, and as predicted, dominance did not significantly predict gains in deference over time. Thus, prestige led to gains in both social rank and deference over time, whereas

Table 2. Multilevel Modeling Results.

Model 1: Predicting T1 social rank cross-sectionally (DV = T1 social rank)									
Term	Estimate	95% CI	Std . β	Þ					
Random Effects									
Target Intercept	0.09								
Rater Intercept	0.08								
Fixed Effects									
TI Prestige	0.32	[0.26, 0.37]	.25	< .001					
TI Dominance	0.36	[0.32, 0.40]	.37	< .001					
TI Social Affinity	0.16	[0.13, 0.20]	.18	< .001					
TI Competence	0.41	[0.36, 0.45]	.36	< .001					
Target Gender ($I = Men$)	-0.08	[-0.18, 0.02]	03	.109					
Rater Gender $(I = Men)$	-0.09	[-0.18, 0.01]	03	.093					
Model 2: Predicting T2 social rank cr	oss-sectionally (DV = T2 s	ocial rank)							
Random Effects									
Target Intercept	0.07								
Rater Intercept	0.08								
Fixed Effects									
T2 Prestige	0.38	[0.33, 0.43]	.30	< .001					
T2 Dominance	0.32	[0.28, 0.35]	.30	< .001					
T2 Social Affinity	0.12	[0.08, 0.15]	.12	< .001					
T2 Competence	0.47	[0.42, 0.52]	.43	< .001					
Target Gender ($I = Men$)	-0.09	[-0.19, 0.0]]	03	.079					
Rater Gender $(I = Men)$	-0.01	[-0.11, 0.10]	00	.917					
Model 3: Predicting changes in social	rank (DV = T2 social rank	;)							
Random Effects									
Target Intercept	0.28								
Rater Intercept	0.12								
Fixed Effects									
TI Social Rank	0.44	[0.37, 0.51]	.42	< .001					
TI Prestige	0.15	[0.08, 0.22]	.11	< .00 I					
TI Dominance	0.07	[0.02, 0.13]	.07	.006					
TI Social Affinity	0.04	[-0.01, 0.08]	.04	.124					
TI Competence	0.18	[0.11, 0.25]	.15	< .00 I					
Target Gender (I = Men)	-0.22	[-0.36, -0.08]	08	.003					
Rater Gender ($I = Men$)	-0.01	[-0.15, 0.12]	00	.836					
Model 4: Predicting changes in defere	ence (DV = T2 deference)								
Random Effects									
Target Intercept	0.13								
Rater intercept	0.18								
Fixed Effects									
TI Deference	0.27	[0.20, 0.34]	.26	< .00 I					
TI Prestige	0.14	[0.06, 0.22]	.10	.001					
TI Dominance	0.02	[-0.04, 0.07]	.01	.566					
TI Social Affinity	0.11	[0.06, 0.16]	.12	< .001					
TI Competence	0.24	[0.16, 0.31]	.20	< .001					
Target Gender (I = Men)	-0.14	[-0.27, 0.00]	05	.054					
Rater Gender ($I = Men$)	-0.07	[-0.22, 0.09]	03	.392					

Note. Estimates are the variance (for random effects) and unstandardized regression coefficients (for fixed effects). CI = confidence interval; TI = Time I;T2 = Time 2. dominance led to gains in social rank but not deference over time. We also found that social affinity was a significant predictor of gains in deference over time, whereas it was not a significant predictor of social rank over time. This is consistent with our theorizing that social rank and deference are two distinct constructs with distinct predictors and correlates.

Mediation

We tested whether the impact of dominance and prestige on gains in social rank was mediated by deference. We completed these analyses using a Bayesian MCMC framework in Mplus. We tested the indirect effects of both T1 prestige on T2 social rank through T2 deference and T1 dominance on T2 social rank through T2 deference. We retained the same control variables as in prior analyses.

There was a significant *positive* indirect effect of T1 prestige on social rank through deference (b = .07, 95% CI [0.02, 0.11]). This is consistent with our expectation that prestige led to gains in social rank over time in part because group members deferred more to individuals who adopted a prestige-based strategy.

In contrast, there was a significant *negative* indirect effect of T1 dominance on social rank through deference such that T1 dominance was associated with decreases in deference over time, and lower deference was associated with decrements in social rank over time (b = -.04, 95% CI [-0.07, -0.01]). Thus, T1 dominance led to gains in social rank despite T1 dominance being associated with lower deference at T2.

Discussion

In a sample of 548 MBA students, peer-rated dominance and prestige were associated with higher peer-rated social rank both initially and after extended group interactions over a four-week period. The associations were observed even after controlling for social affinity, perceived competence, and gender. In addition, both strategies predicted gains in social rank over time: Individuals who were seen as employing prestige or dominance during initial interactions were more likely to increase in social rank over the course of the group project. Our data support the idea that dominance and prestige are two ways to the top and—in at least some contexts they may also represent two ways to *stay* at the top.

Crucially, we found that dominance led to gains in *social* rank over time but did not lead to gains in *deference* over time, indicating that dominant leaders may achieve and maintain high social rank despite failing to receive deference from their peers. In contrast, prestige led to gains in both social rank and deference over time. Furthermore, mediation analyses suggest that prestige-oriented individuals gained social rank over time because group members deferred to them, but dominant individuals gained social rank over time despite group members deferring to them

less. This reinforces a central component of dual-strategies theory: While social rank accrued via prestige is based on freely conferred deference, social rank accrued via dominance typically is not.

This article makes several important contributions to the field's understanding of dual-strategies theory and hierarchy more broadly. Perhaps most importantly, our work sheds new light on the role of dominance in human social hierarchies. There has been much discussion and little consensus on the effectiveness of dominance in modern social hierarchies. There are at least three explanations as to why dominance was a viable strategy for gaining or maintaining social rank over time in this setting.

One potential explanation revolves around the empirical setting of our work. A growing literature suggests that the efficacy of dominance depends on social context (e.g., Cheng, 2020; Kakkar & Sivanathan, 2017; Laustsen & Petersen, 2017; Petersen & Laustsen, 2020). Consistent with this literature, our pilot data indicate that, compared with undergraduates, MBA students see dominance as more normative and acceptable. This may be why dominance was effective over time among MBA students but not among the undergraduate psychology students who were the subject of past work. Indeed, there are likely multiple ways in which these samples and empirical contexts differed. This literature would benefit from a systematic investigation of the contextual factors that lead dominance and prestige to be more or less effective, ideally using validated scales that measure contextual factors (e.g., Parrigon et al., 2017; Rauthmann et al., 2014).

Second, dominance may be efficacious over time because of the relatively stable nature of hierarchies. Confirming past work, the hierarchies in our sample appeared to be established early in group interactions and tended to have a high degree of continuity over time (Anderson et al., 2001). Furthermore, social rank tends to beget more social rank (Magee & Galinsky, 2008), so establishing social rank initially (whether via dominance or prestige) can lead to gains in social rank over time. This highlights the primacy of early moments in determining social hierarchies.

Third, some scholars question how dominance can lead to social rank when dominant leaders fail to possess many of the qualities that group members respect and desire in a leader (e.g., generosity and competence; DeRue et al., 2015; Flynn et al., 2006; Willer, 2009). The current work takes a step forward by distinguishing between deference and social rank. In our work, dominant individuals were able to claim social rank over time without receiving freely given deference from their group. This suggests that focusing exclusively on patterns of deference or status in a group provides an incomplete portrait of social hierarchies. Rather, some individuals may claim rank and exert influence despite or even against the wishes of fellow group members. This could explain how dominant individuals are able to obtain social rank despite not having qualities—such as social affinity and perceived competence-that are important precursors to

freely conferred deference. It also suggests that the efficacy of dominance is likely moderated by group members' ability and willingness to challenge a dominant person's attempts to claim authority (Pfeffer, 2011). Given that prestige-oriented individuals may be particularly averse to conflict (Case et al., 2018, 2021), dominance may—ironically—be relatively uncontested and thus especially effective in groups typified by prestige hierarchies.

Relatedly, our work raises questions about whether dominance is mistakenly perceived as competence. Anderson and Kilduff (2009a) suggested that dominant individuals obtain high social rank because others erroneously perceive them to be more competent. In the current study, dominance and perceptions of competence were not significantly correlated, even during initial group interactions (r = -.02 at T1; see Table 1). However, it should be noted that our perceived competence measure focused on group members' contributions to the group task; this may or may not tap into participants' perceptions of competence or intelligence more broadly (e.g., a dense-but-hard-working group member might be seen as competent according to this measure but might not be seen as competent when considering competence more broadly). As a result, it is not completely clear how dominance might be related to perceptions of global competence.

Although we found that dominance led to gains in social rank, this should not take away from prestige, social affinity, and perceived competence as important routes to social rank. We consistently found that prestige was a strong predictor of both social rank and deference. Our work is also some of the first to demonstrate that dominance and prestige impact social rank beyond perceived competence and social affinity.

Finally, although not a main focus of our study, we found effects of gender over time—men in our sample were significantly more likely than women to decrease in social rank over the course of the study. Men in our sample were also seen as less competent than the women in the sample on average ($M_{\rm men} = 5.13$; $M_{\rm women} = 5.48$; t = 6.83, p < .001).¹² One possible interpretation is that despite women's higher perceived competence, there was a (perhaps unwarranted) tendency to defer to men and women to a relatively equal degree early on but that this tendency was "corrected" over time, as women increasingly gained the rank warranted by their competence. Of course, this pattern was exploratory and warrants further investigation.

Furthermore, although dominance and prestige led to higher social rank for both men and women, we found some evidence that these effects may have been stronger for men (see Supplemental Materials). Indeed, men and women who were high on prestige (and/or dominance) did not differ in their social rank, whereas some models suggested that women who were low on prestige (and/or dominance) had higher social rank than did men who were low on prestige (and/or dominance). These findings suggest backlash against "modest men" (Moss-Racusin et al., 2010), but we fail to find evidence of the previously demonstrated backlash against dominant women (Williams & Tiedens, 2016). Perhaps this is due to different conceptions and measures of dominance and backlash or greater acceptance of dominance in the MBA context. Alternatively, our study may have lacked the statistical power to detect subtle moderating effects of gender. Additional exploration of gender moderation would be beneficial in future research.

Limitations and Future Directions

Although this article speaks to multiple questions at the heart of dual-strategies theory, it is not without limitations. One methodological limitation is that our longitudinal investigation was comprised of only two time points; models examining change over time should ideally consist of at least three time points. A related limitation is that our time points were only 4 weeks apart. Although this is a significant improvement over cross-sectional lab-based interactions, it may fail to capture how social rank unfolds over months or years. Indeed, one critique of our work might be that dominant participants would have lost their social rank had the timeframe of the study been longer. Yet, the dominant individuals in our study gained social rank over the course of our study, a trajectory that suggests that they may have continued to gain even more influence had the study persisted. Nonetheless, additional research involving more time points and a longer timeframe would strengthen the conclusions of the current work.

Another methodological limitation is the abbreviated nature of some of our measures; our competence and social affinity control variables, for example, relied on single-item measures. These brief measures were selected with the aim of keeping the survey length as short as possible to maximize our total sample size. This was important given that participants were asked to complete each peer-report measure 4 to 5 times (once for each of their group members). The representativeness of the current sample is also worth considering. This sample represents an important population—MBA students—that to our knowledge has never been studied in the context of dual-strategies theory. Upon graduation, these students are likely to occupy higher-thanaverage positions in their organizations, making the current findings particularly important for the field's understanding of real-world hierarchies in professional workplaces. Our participants likely deviate from the general population in traits, such as competitiveness and ambition, as they have self-selected into a prestigious MBA program. Their attention to and desire for rank or professional acclaim—as well as their approaches to navigating social hierarchies—may differ from the average adult. Indeed, our pilot data suggest that dominant individuals may be particularly prevalent in MBA programs. This fits with work suggesting that people who endorse social dominance may self-select into professions such as management and law and that participation in these fields can further heighten their endorsement of dominance (Zubielevitch et al., 2021). In addition, while about one-third of the students in the program were international students, the majority were WEIRD (Henrich et al., 2010), reflecting an important though common limitation in psychology. Nonetheless, this study represents the first longitudinal investigation of dual-strategies theory in a sample of non-undergraduate adults in a setting with professional norms. One conclusion from our work and the work of others is that relationships among dominance, prestige, and social rank may be context dependent. We therefore urge hierarchy researchers to continue to sample more diverse contexts.

This work points to several avenues for future research. One area for further investigation involves the specific mechanisms through which dominance and prestige lead to high social rank. Although our data suggest that dominant individuals are able to claim social rank without deference from others, we cannot speak to the specific behaviors or social dynamics through which dominant individuals increase their social rank. Our theory suggests that dominant individuals may claim positions of influence by acting assertively or coercing, intimidating, or debasing others (Ketterman & Maner, 2021). Future work would benefit from a closer examination of the specific behaviors and social processes through which dominance begets high social rank.

Another area worthy of investigation involves the implications of dominance and prestige for group-level processes and outcomes (McClanahan, 2020). We examined the effectiveness of dominance and prestige as strategies for gaining social rank within hierarchical groups, but an equally important (and, thus far, essentially unexplored) question revolves around whether these strategies impact "effectiveness" for *groups* in terms of performance, identification, relationship quality, and group member satisfaction.

Conclusion

Findings from the current study suggest that both dominance and prestige are effective ways to obtain and maintain high social rank over time in a naturalistic context: Among MBA students, who are professionally experienced and tolerant of dominance-based hierarchical relations, both dominance and prestige led to gains in social rank over time. Furthermore, both dominance and prestige predicted social rank above and beyond the effects of gender, perceived competence, and social affinity. This work provides evidence for a cornerstone of dual-strategies theory in a naturalistic setting. Findings highlight the fact that, while prestige may result in social rank through freely conferred deference, dominance allows people to claim high social rank despite failing to receive the willing deference of fellow group members.

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Supplemental Material

Supplemental material is available online with this article.

Notes

- 1. By strategy, we mean a set of behaviors and psychological processes that reflect a coherent approach to navigating one's place in social hierarchies. Although some might intentionally employ a dominance or prestige strategy to fulfill a social rank goal, others may engage in a dominance or prestige strategy without intentional, strategic forethought or even conscious awareness (McClanahan, 2020).
- 2. Students admitted to this program have an average of five years of work experience.
- 3. A post hoc power sensitivity analysis suggested that after accounting for the random intercepts at the rater and target levels, our T1 sample could detect a fixed effect of $\beta = .06$ with 81.30% power (95% CI: [78.72, 83.67]) or a fixed effect of $\beta = .06$ with 92.40% power (95% CI: [90.58, 93.97]).
- 4. See Supplemental Materials for attrition analyses and comparisons of respondents versus non-respondents.
- We do not have consent to publicly share participants' data. All materials and the code used to conduct all analyses are available at https://osf.io/2nb6x/.
- 6. An additional 185 students participated in a version of our study that included the deference (but not the social rank) as dependent variable. When predicting deference in this larger sample, results were virtually identical to those reported here.
- 7. Participants responded to an additional item ("Members of your group respect and admire him or her"), but we were concerned that this item was too conceptually similar to our social rank dependent variable and there was some evidence of crossloading, so we omitted it from the scale. See the Supplemental Materials for factor analyses.
- 8. Participants were asked four additional items about group members' rank within the group, but we were concerned that these items conceptually overlapped with dominance or prestige strategies. Thus, we chose to focus on the two items from the scale that have been previously used to measure social rank (e.g., Brand & Mesoudi, 2019; Cheng et al., 2013; Redhead et al., 2019) and that are most agnostic to the type of social rank. Factor analyses confirmed that this trimmed social rank measure was empirically distinct from the dominance and prestige measures. Results with all six items are consistent with our two-item scale (see Supplemental Materials for these results, factor analyses, and full materials).
- Participants reported group identification and subjective group performance (which were outside the scope of this study) and Big Five personality measures at T2. Results were held after controlling for the Big Five (see Supplemental Materials).

- 10. The social relations model (SRM) would be the typical analytical approach for round-robin data (Kenny & La Voie, 1984), but its lack of flexibility with missing data makes it a suboptimal analytic option for our data. SRM can only be estimated in groups with four or more respondents (Kenny et al., 2006), so the use of this approach would reduce our sample size at T2 from 1,228 observations to 394 observations (eliminating 67.92% of our data). Despite this, we report SRM analyses in the Supplemental Materials. Results are largely similar to those in the main text, with the caveat that prestige—but not dominance—predicts significant changes in social rank over time using this method. This may be attributable to the substantially smaller sample size in these SRM results.
- 11. In all, 8.55% of the variance in T1 social rank was at the group level, versus 22.53% and 22.82% at the target and rater levels, respectively.
- 12. We tested for gender differences in all key variables of interest. These results are in Table S1 of the Supplemental Materials.

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