The Impact of Leader Dominance on Employees' Zero-Sum Mindset and Helping Behavior

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ABSTRACT

Leaders strive to encourage helping behaviors among employees, as it positively affects both organizational and team effectiveness. However, the manner in which a leader influences others can unintentionally limit this desired behavior. Drawing on social learning theory, we contend that a leader's tendency to influence others via dominance could decrease employees' interpersonal helping. Dominant leaders, who influence others by being assertive and competitive, shape their subordinates' cognitive schema of success based on zero-sum thinking. Employees with a zero-sum mindset are more likely to believe that they can only make progress at the expense of others. We further propose that this zero-sum mindset results in less interpersonal helping among subordinates. We test our hypotheses by employing different operationalizations of our key variables in eight studies of which four are reported in the manuscript and another four in supplementary information (SI) across a combined sample of 147,780 observations. These studies include a large archival study, experiments with both laboratory and online samples, and a time-lagged field study with employees from 50 different teams. Overall, this research highlights the unintended consequences that dominant leaders have on their followers' helping behavior by increasing their zero-sum mindset.

Keywords: Leader influence; social learning; dominance; zero-sum mindset; helping

Leaders use different strategies to influence their subordinates and colleagues (Yukl & Chavez, 2002). Such influence tactics can have important implications for subordinates' psychological experience and resulting behaviors (Falbe & Yukl, 1992). However, influence tactics not only have the intended effect of encouraging desirable or dissuading undesirable behaviors, but can also have unintended side-effect of limiting desirable behaviors. Taking a social learning perspective (Bandura, 1977; Davis & Luthans, 1980), we contend that the manner in which leaders influence their employees – by using dominance or prestige tactics – may alter employees' mindset in terms of how they construe success in the workplace. More specifically, we argue that by influencing employees' cognitive schemas of success, a leader's influence approach can have unintended detrimental consequences for a crucial type of organizational behavior, namely interpersonal helping. Interpersonal helping has clear benefits for organizations and employees (N. P. Podsakoff et al., 2009; Marinova et al., 2012; Rich et al., 2010), and effective leaders strive to develop and encourage this type of behavior (Yaffe & Kark, 2011). However, despite the importance to encourage helping among employees, a leader's more dominant approach to influence may unintentionally limit this behavior.

Dominance and prestige are hierarchical orientations associated with different sets of motivations, cognitions, and behaviors used to achieve and exert influence within groups (Cheng et al., 2013; Henrich & Gil-White, 2001; Maner & Case, 2016). Despite extensive examination of the manner in which dominance and prestige could lead to social influence, there is hardly any work examining the consequences of such an approach—especially in an organizational context. Specifically, the question remains as to how a leader's tendency to influence others using dominance may affect their employees' mindset and behaviors. A dominance approach to influence involves such members taking control of the group by being confident and assertive

about their abilities, forceful regarding their viewpoint, and at times, compelling other group members to recognize their authority. Leaders high on dominance prioritize their own interests as opposed to those of individual members or the group. We therefore suggest that subordinates' mental model of workplace success will represent greater zero-sum calculations when their leader is associated with high versus low dominance.

According to the social learning theory, employees make sense of their workplace by observing other high-status or influential individuals around them (Bandura, 1977; Davis & Luthans, 1980; Wood & Bandura, 1989). Thus, employees working under a dominant leader will interpret their leader's forceful influence tactics as a cue of what is required for success in the workplace. Such notions of workplace success would be reflective of a zero-sum mindset, where progress for some employees could only be achieved at the expense of others (Esses et al., 1998; Różycka-Tran et al., 2015). Therefore, helping others by expending one's time and effort would be seen as advancing others at the cost of one's own progress. Hence, we posit that adopting this zero-sum mindset will negatively influence employees' helping behavior (Sirola & Pitesa, 2017).

In doing so, we make several important contributions. First, our research offers a socio-cognitive lens to understand how employees make sense of their leader's influence displays, which in turn affects their cognitions about success in the workplace and their helping behaviors. This perspective is a novel contribution to the helping literature, which has typically focused on leaders' motivational or relational approaches to influencing employee helping behavior (P. M. Podsakoff et al., 1990; Sparrowe et al., 2006; Wang et al., 2005). Second, our research is the first to expose an unintentional downstream consequence of leader dominance on employee helping behavior. These findings illustrate the subtle ways in which leader's influence displays affects employees behavior via social learning. Third, our work contributes to the dominance and

prestige theoretical framework, which has primarily discussed prestigious leaders as the ones that subordinates emulate (Henrich & Gil-White, 2001). Our work reveals that social learning is not just limited to followers of prestige-oriented leaders but is also prevalent among subordinates of dominant leaders by shaping their mental schemas of success. In this way, we demonstrate the slight or inadvertent manner in which followers of dominant leaders may copy such leaders' behaviors. Finally, our work offers a theoretically grounded and empirically validated lens to capture leaders' downward influence tactics (cf. Falbe & Yukl, 1992; Kipnis, Schmidt, & Wilkinson, 1980). This is a key contribution as the influence tactics literature has been plagued with measurement and construct validity problems, especially in field settings (Hochwarter et al., 2000; Schriesheim & Hinkin, 1990).

THEORY

Two Alternative Ways to Influence

The manner in which leaders influence subordinates plays a central role in encouraging cooperative norms and helping behaviors among employees (Yaffe & Kark, 2011). Clarifying variations in managers' influence styles on subordinates' behavior is a long-standing goal among management scholars. From early work on the subject, such as French and Raven's five bases of power (French & Raven, 1959), to Kipnis et al.'s eight-factor influence tactics model (1980) and Fiedler's contingency model (Fiedler, 1978), all have proposed an array of behavioral responses that managers adopt to influence others. We extend this work by incorporating an evolutionary grounded dual rank framework of achieving social rank or influence in a group that classifies leader influence along two different hierarchical orientations—dominance and prestige—each associated with its own set of cognitions, motivations, and influence strategies (Cheng et al., 2013; Henrich & Gil-White, 2001; Lee et al., 2020).

Dominance-based behavioral patterns entail being assertive, decisive, confident, and sometimes forceful when interacting with others (Maner & Case, 2016). Typically, individuals attempting to influence others via dominance are the first to speak in a group, command attention, and are perceived as agentic and self-assured. Their confident demeanor makes them appear competent, thus granting them greater influence over others (Anderson & Kilduff, 2009). In certain instances, their intimidating and confident manner can lead to compliance based on a sense of psychological threat (Cheng et al., 2013). Such individuals often emerge as leaders when intergroup competition is high (Halevy et al., 2012), when the environment is uncertain or threatening (Kakkar & Sivanathan, 2017), or when the situation demands making risky decisions (van Kleef et al., 2021). Leaders high (as opposed to low) on dominance are known to build instrumental alliances in order to protect their interests and goals (Maner & Case, 2016). In short, leaders associated with high dominance are characterized by competitive or agentic behavioral strategies and driven by a desire to control others and secure their interests. As a result, such leaders employ a number of forceful influence tactics such as pressure, exchange, coalition, and legitimating, rather than any one tactic (cf. Kipnis et al., 1980; Schriesheim & Hinkin, 1990).

Conversely, individuals associated with prestige are perceived as competent and gain influence by sharing their knowledge, skills, and expertise with others in the group (Cheng et al., 2013; Maner & Case, 2016); this helps others to learn and develop their own capabilities in the valued domain. As a consequence, beneficiaries of these helpful actions reciprocate by conferring such individuals with greater respect, deference, and social influence (Henrich & Gil-White, 2001; Maner & Case, 2016). Influencing others via prestige is based on a combination of having relevant skills/knowledge and the readiness to share that knowledge with others. Thus, leaders associated with high (as opposed to low) prestige come across as approachable, likeable,

consultative, and willing to invest their time and knowledge with their followers and group members. They are perceived as more warm, socially acceptable, and empathetic by others (Cheng et al., 2010), granted greater moral credentials, and punished less for ambiguous transgressions than leaders low on prestige (Kakkar et al., 2020). In sum, leaders associated with prestige influence others via a combination of influence tactics such as consultation, inspirational, rational, and personal appeals.

Empirical findings support both dominance and prestige as alternative yet equally viable means of influencing others. In an impressive demonstration among problem-solving workgroups, members associated with high dominance or prestige were more influential in swaying group members' opinions than those who were low on dominance and prestige (Cheng et al., 2013). A follow-up eye tracking study revealed that observers focused their gaze more on group members displaying either dominance or prestige behaviors (Cheng et al., 2013). These findings have been further corroborated among different groups (e.g., athletic teams, forest dwellers, etc.) and using both laboratory- and survey-based measures (Cheng et al., 2010; Kakkar & Sivanathan, 2017; von Rueden et al., 2010). More broadly, high dominance or prestige leads to leadership emergence or key distinctions in the way such leaders lead (Case et al., 2018; Case & Maner, 2014; Halevy et al., 2012; Lee et al., 2020; van Kleef et al., 2021).

Additionally, there is sufficient within-person variability in using these two means of influence over time, as well as situational factors that can either increase or decrease individuals' deployment of these two forms of influence behavior. Researchers studying newly formed groups over a period of 16 weeks observed substantial within-person variability over time in group members' tendency to engage in dominance tactics (Redhead et al., 2019). Likewise, ethnographic studies revealed that certain individual factors (e.g., age, access to mates, skill

acquisition, etc.), can affect individuals' dominant behavior (Apicella, 2014; Barkow, 1989; Boehm, 1999). Situational factors like unstable social rank or position can also increase leaders' dominant behaviors (e.g., exerting more control over subordinates, engaging in divide and conquer strategies, reduced sharing of information among subordinates) (Case & Maner, 2014; Maner & Case, 2016; Maner & Mead, 2010). Conversely, researchers observed a decrease in dominant tendencies among forest dwellers when group members sanctioned those who behaved aggressively (Boehm, 1999; Briggs, 1970). These findings confirm that individuals can strategically change their influence behavior to engage in higher or lower dominance.

It is important to clarify that dominance is not a form of leadership (such as abusive, ethical, directive, and so on). Rather, dominance is best described as a hierarchical orientation with its own set of motivations and cognitions that may guide individuals' related behaviors to attain or maintain social influence with or *without* a formal leadership position (Cheng et al., 2013; Lee et al., 2020). Thus, these behaviors can be employed by anyone seeking to influence others. However, having a formal leadership role or authority position emboldens such individuals to enact these tendencies further, given the discretion afforded by their formal position. For instance, in an organizational context, leaders who feel psychologically empowered and are high (vs. low) on dominance engage in more controlling behavior toward their subordinates by ensuring that they obey their instructions, berating them if they fail to accomplish their tasks, and preventing them from having the final say in meetings or decisions (Lee et al., 2020). Hence, dominance may encapsulate multiple styles of leadership driven by an underlying drive to control others.[1] We next discuss why dominant leaders may increase employee's zero-sum mindset beliefs and reduce interpersonal helping.

[1] To ensure the empirical validity of dominance and prestige as separate constructs, we ran a CFA including other forms of leadership—ethical, abusive, empowering, and directive. The six-factor CFA model showed a good fit,

The Impact of Leader Influence on Employees' Zero-sum Mindset and Helping

People subscribe to lay beliefs or mental schemas about the behaviors that lead to success in a given situation (Molden & Dweck, 2006). In achievement contexts - when competing with others or in a workplace - such beliefs stem from the inherent tension between one's self-interests and those of others. Though self-interest and other-interest are two orthogonal constructs (Gerbasi & Prentice, 2013; Rusbult & Van Lange, 2003), individuals often assume the two to be non-independent. The degree to which they believe their interests are in conflict with others' interests is representative of a zero-sum mindset (Różycka-Tran et al., 2015). For instance, an extreme case of zero-sum thinking is when people believe their own success can only be achieved at the expense of others (i.e., their interest is diametrically opposed to others'). Thus, a zero-sum mindset can be seen as increasing along a continuum, such that those on the furthermost left anchor believe that their success is not in conflict with others' success (thereby allowing everyone to pursue success together) and those on the extreme right anchor believe that their success can only be achieved at others' expense (Sirola & Pitesa, 2017). The origin of the zero-sum construct in an organizational context can be traced to Deutsch's social interdependence theory (1949).

According to Deutsch (1949), negative interdependence is formed among workers if they believe that achieving their goals is possible only when others fail to attain their objectives. Such forms of interdependence can lead to lack of cooperation and greater competitive interactions among workers. Further, social interdependence theory argues that, beyond objective realities like performance reviews, contextual and psychological factors in the workplace (e.g., work norms, organizational culture, market competition, economic factors, etc.) can drive zero-sum

despite low to moderate correlations among the various constructs ($\chi^2(1312) = 2889.44$, $p < .001$, RMSEA = .063, CFI = .94, TLI = .94, see Table S6 in SI for comparison with other models).

perceptions (Deutsch, 1949; Johnson & Norem-Hebeisen, 1979). In line with this argument, recent findings suggest that zero-sum beliefs transcend objective situations to contexts that are inherently not zero-sum (Różycka-Tran et al., 2015). For instance, even when both parties at a negotiation table share compatible interests, negotiators often construe others' priorities in conflict with their own, thus treating overall negotiation as a zero-sum game (Bazerman & Neale, 1983; de Dreu et al., 2000). Similarly, learning of women's progress increases male employees' zero-sum beliefs, resulting in greater gender bias and reduced support for fair practices at work (Kuchynka et al., 2018). Moreover, contextual factors such as cultural norms of individualism and economic cues of an impending recession can also induce greater zero-sum thinking (Różycka-Tran et al., 2015; Sirola & Pitesa, 2017). Consistent with the perceptual and situational perspective, we contend that leaders' influence tactics serve as an additional situational factor that can impact subordinates' construal of success in the workplace.

Employees make sense of a situation by asking themselves what would be the right response in a particular context, and often look at their immediate leader or other prototypical high-status members for socially appropriate behavioral clues (Harris, 1994; Wood & Bandura, 1989). Consistent with this, social learning theory contends that employees learn of normative practices at work via observational learning (Wood & Bandura, 1989). Observational learning at a cognitive level consists of two sequential processes: attentional and representational. Employees pay selective attention to their leaders and other high-status workers' demeanor, behaviors, and accomplishments to extract information about acceptable conduct in the workplace. That information is then transformed and encoded cognitively to represent rules, norms, and appropriate and tolerable work practices. Thus, selective cognitive retention of others' behavior serves as a guide for employees' own future actions. In line with the principles

of social learning (Bandura, 1977; Davis & Luthans, 1980), we suggest that employees' attention to the manner in which their leader exerts influence may shape their cognitive representation of success.

As noted, leaders associated with higher dominance are assertive and at times forceful in getting their way. As a result, they are seen to employ competitive influence tactics. Highly dominant leaders are more decisive in their approach, do not hesitate to speak their mind, and are willing to pressure others to follow their lead (e.g., they may segregate group members who appear to challenge their authority) (Case & Maner, 2014). When the group's goals are in conflict with the leader's goals, leaders associated with dominance do not vacillate to prioritize their own goals over the group's (Maner & Mead, 2010). As a consequence, subordinates of leaders associated with dominance will also internalize the view that the path to success requires competitive and assertive behaviors that prioritize one's own interests and goals over those of others. In other words, dominance-based influence shapes the impression of a negative interdependence among employees. Therefore, employees construe their success as being in competition with that of others, such that no team member could achieve success without hurting the prospects of other members. In short, employees supervised by a leader higher on dominance (as opposed to low) will develop greater zero-sum beliefs. Thus, we predict:

Hypothesis 1: Leaders associated with higher dominance will foster zero-sum mindset among their subordinates.

Additionally, both social learning and implicit leadership theories posit that subordinates' cognitive representation of their leader constrains their own behaviors at work (Brown & Lord, 2001; Wood & Bandura, 1989). In support of this theoretical assertion, empirical findings reveal that individuals' behavior is a manifestation of their perceptual representation of the environment

(Dijksterhuis & van Knippenberg, 1998). These perceptual representations represent the observed behaviors transformed into mental models of appropriate rules and actions. These cognitive rules not only aid in retention of modeled information but also direct individuals' behavior as per the mental conceptions (Wood & Bandura, 1989). We therefore contend that dominant leaders' reliance on assertive, decisive, and competitive tactics makes them appear self-serving and less likely to help others. Since interpersonal helping behaviors are discretionary (i.e., often beyond the role requirements), employees participate in such behaviors when they have internalized such behaviors based on their cognitive schemas and mental routines (Grodal et al., 2015). However, employees supervised by a dominant leader, who they perceive as unlikely to help others and under whose supervision they tend to just comply with their job requirements, would not consider helping as part of their role and thus will be less likely to engage in interpersonal helping.

Furthermore, research examining leaders' non-verbal expressions has shown that dominance is associated with unique facial expressions and non-verbal displays. Dominant individuals typically have a stern gaze and tilt their head slightly downwards in order to intimidate others and to comply with their wishes (Witkower et al., 2020). Individuals automatically encode such non-verbal displays in terms of leaders' trait categorization that influences their behavior at work (Brown & Lord, 2001; Uleman et al., 1996). Thus, intimidating non-verbal displays convey dominant tendencies (Knutson, 1996), and subordinates exposed to the emotional displays of such leaders engage in less interpersonal helping (Koning & Van Kleef, 2015). In line with these findings, additional research confirms that leadership forms that encourage compliance among followers negatively predict helping behaviors (Goodwin et al., 2001). Since dominant influence tactics result in greater compliance among employees, we

predict that employees supervised by a leader associated with dominance will participate in less interpersonal helping behaviors. Overall, we propose:

Hypothesis 2: Subordinates reporting to a leader associated with higher dominance will engage in less interpersonal helping.

Social learning theory posits that employees' expectations of acceptable workplace behaviors are shaped by observing and interpreting leaders' actions (rather than relying solely on written rules and directives) (Wood & Bandura, 1989). Accordingly, it has been argued that "the main focus of social learning theory is to investigate the mediating effects that covert cognitive processes may have on an otherwise observable sequence of events" (Davis & Luthans, 1980, p. 285). In other words, learning vicariously from others' behaviors and actions may influence employees' mental cognitive schemas, which might explain their resulting behavior. We therefore contend that greater zero-sum thinking among employees with dominant leaders is a reflection of their underlying cognitive process. Once such zero-sum expectations are formed, helping other group members and thereby advancing their interests would be construed as a cost to one's own time and in conflict with one's progress. Consequently, this negative construal of interdependencies due to zero-sum beliefs would reduce employees' helping behavior.

Moreover, a zero-sum mindset can lead to a whole host of negative interpersonal outcomes. For instance, a zero-sum mindset is positively related to group conflict (Esses et al., 1998), low-quality relationships (Crocker et al., 2017), greater perception of racism (Norton & Sommers, 2011), lower joint outcomes in negotiations (de Dreu et al., 2000), expecting lower grades when others receive higher grades for an assignment (Meegan, 2010), and reduced helping behavior among employees (Sirola & Pitesa, 2017). Hence, we predict a zero-sum mindset would mediate the negative effect of leaders' dominance on employee interpersonal

helping. It is important to note that, given the myriad positive outcomes associated with helping behaviors (N. P. Podsakoff et al., 2009), it is unlikely that any effective leader would intentionally discourage these behaviors among employees. Thus, dominant leaders may inadvertently reduce interpersonal helping behavior among employees by fostering a zero-sum mindset. In proposing this hypothesis based on employees' cognitions, our work goes beyond typical explanations of employee helping behavior at work based on leader influence via motivational or relational pathways (Bolino & Grant, 2016). In sum, we propose:

Hypothesis 3: A zero-sum mindset will mediate the negative effect of leader dominance on subordinates' interpersonal helping behaviors.

OVERVIEW OF STUDIES

We test the above hypotheses across eight studies (four in SI) using different contexts—archival, laboratory, and organizational—and operationalizations of our key constructs. We also demonstrate the presence of our proposed cognitive mechanism of zero-sum over and above motivational variables (e.g., job autonomy and in-role perceptions), relational constructs (e.g., leader-member exchange (LMX)) and other leadership styles (e.g., ethical, participative and directive leadership). Study 1 examines the effect of a dominant leader on subordinates' zero-sum mindset and their tendency to help using a large-scale archival dataset. Study 2 manipulates leader dominance to demonstrate its causal effect on followers' zero-sum mindset and interpersonal helping compared to control and prestige conditions. Study 3 further replicates the prior findings by employing a behavioral measure of helping. Finally, Study 4, tests our proposed model with organizational data collected in two phases and also accounts for important alternate explanations such as LMX, job performance, and ethical leadership, thereby increasing the robustness and generalizability of our findings. Table 1 presents an overview of all our

studies, highlighting each study's type, study design, and intended contribution. All analysis were performed using STATA16.

----------Insert Table 1 here----------

STUDY 1

Study 1 tested our proposed theoretical model using a large-scale field study. We used data collected by World Values Survey (WVS)[2]—an organization that conducts rigorous worldwide research to better understand people's social, political, and cultural beliefs (Inglehart et al., 2014)—to capture zero-sum mindset and helping. The data consists of individual-level responses with non-repeat observations from more than 100 countries across multiple waves from 1981 to 2014. The independent variable was collected at the country level and obtained from a different political database (Cheibub et al., 2010). We merged the two datasets (WVS and the political database) using country name and year to test our hypotheses (see the appendix for further details on the two datasets). The final sample ranged from 144,998 to 32,076 observations from 70 to 35 countries contingent on the availability of key variables in the archival datasets and inclusion of control variables (M_{Age} = 40.73, *SD* = 16.05, 51.13% females).

Dependent Variables

Zero-sum mindset. Following past research (Sirola & Pitesa, 2017), we operationalized a zero-sum mindset using a single item that asked participants to indicate on a 10-point scale their views on how people might attain wealth and get ahead of others (1 = "people can only get rich at the expense of others" to 10 = "wealth can grow so there is enough for everyone"). We reverse-coded the item, such that a higher value indicated greater zero-sum thinking.

[2] The authors have used WVS data in their other research (Kakkar & Sivanathan, 2017) but both the mediator and dependent variables were not part of their previous work.

Helping. Helping was measured using a single item capturing individuals' response to how important it was for them "to help people living nearby; to care for their well-being" on a six-point scale (1 = *very much* to 6 = *not at all*). We again reverse-scored this item such that higher values suggested a greater intention to help.

Independent Variable

Dominance. Leader dominance was operationalized indirectly by coding whether a particular country in a given year was ruled by a dictator or by a democratically elected leader. The key assumption, in line with past research (Colgan & Weeks, 2015; Ezrow & Frantz, 2011), is that countries with dictatorial regimes are governed by a leader who is more assertive, dominant, and forceful compared to countries with a democratically elected leader. This is a conservative measure of leader dominance as democratically elected leaders can also be high on dominance. We utilized an academic database (Cheibub et al., 2010) that classified a country based on democracy or dictatorship in any given year. A country was deemed a dictatorship if it was governed by a military leader, a monarch, or a government that was not elected or responsible to the legislative assembly. The independent variable was categorical, with 1 representing dictatorships and indicative of a highly dominant leader and 0 otherwise.

Control Variables

We controlled for several factors that could potentially influence individuals' inclination to help others. For instance, unemployment can affect both zero-sum mindset and helping behavior (Sirola & Pitesa, 2017). Hence, we merged the data on unemployment from the World Bank database (The World Bank, 2017) for a particular country in a given year and included that as a covariate. Likewise, we also controlled for social class, as members of lower social class have been shown to exhibit greater prosocial behavior (Piff et al., 2010). We also accounted for

demographic factors (e.g., gender, age, income, and political ideology) and included year fixed effects to partial out variance that might be specific to a given year.

Results

----------Insert Tables 2 and 3 here----------

Table 2 reports descriptive statistics and inter-item correlation among the variables. We performed a multilevel mixed effect regression analysis with country as the higher-order factor. Year fixed effects and standard errors were clustered within each country to provide a more conservative test of our hypotheses. Table 3 reports the results of the regression analysis. We found a significant positive effect of leader dominance on zero-sum mindset, with (b = .43, SE = .20, p = .029, *Model 3*) or without the control variables (b = 1.03, SE = .26, p < .001, *Model 1*) in support of Hypothesis 1. Consistent with Hypothesis 2, we observed a negative effect of leader dominance on helping behavior, with (b = -.33, SE = .14, p = .019, *Model 8*) or without (b = -.25, SE = .12, p = .036, *Model 4*) the control variables. Additionally, a zero-sum mindset was negatively associated with helping behavior, both with (b = -.026, SE = .005, p < .001, *Model 9*) and without (b = -.026, SE = .004, p < .001, *Model 6*) the control variables. Table S1 in SI reports results after controlling for Hofstede's cultural dimensions (Hofstede et al., 2010). Hofstede's cultural dimensions were unavailable for all countries in our dataset, hence we report results for a subset of countries for which we had this data. The results remained significant.

Mediation analysis. To account for non-independence in data, we performed a multilevel mediation analysis using a bootstrap procedure with 5,000 iterations (Preacher et al., 2010). A significant indirect effect of leader dominance on helping via zero-sum mindset (b = -.026, z = 34.26, p < .001, *95%CI* [-.028, -.025]) was observed. The direct effect after accounting for the

indirect effect was also significant (b=-.247, z = 21.46, p < .001, *95%CI* [-.27, -.22]), indicating partial mediation. Overall, Hypothesis 3 was supported.

Discussion

Using worldwide archival field data that spanned a 33-year temporal window, Study 1 offered globally representative support in favor of our proposed model. Yet, despite the benefits associated with a large and diverse sample, this study was not without limitations. First, the study measured leader dominance using a proxy based on the way a country was governed. Second, this study only offered correlational support to our model. To overcome these limitations, we performed Study 2.

STUDY 2

Study 2 was an experiment designed to examine the causal effect of leader dominance on followers' zero-sum mindset and helping behavior, in comparison to both control and prestige conditions. We manipulated our experimental conditions via a video stimulus using both male and female professional actors. We pre-registered our study design, sample size, exclusion criteria, hypotheses, and planned analysis in advance of data collection (https://aspredicted.org/ta54a.pdf). Data, analysis file and other information about the study are available at OSF (https://osf.io/9tqyf/).

Method

Sample. We posted 600 slots on prolific for U.S. and U.K. participants with full-time job experience in exchange of $1.25. Assuming equal distribution of participants across the three conditions, this sample size allowed us to detect an effect size of d = .28 with 80% power. A total of 597 participants completed our study, of which two were dropped for having an IP address

outside of both the U.S. and U.K.[3] and another one for using automatic form fillers (Buchanan & Scofield, 2018). The final sample consisted of 594 participants with 205 in the dominance condition, 192 in the control condition, and 197 in the prestige condition (M_{Age} = 34.63, *SD* = 13.7, 68.18% females, .34% non-binary, M_{JobExp} = 7.15 years).[4] The IRB approval for this study was provided by the review board of the London Business School (Protocol Number: REC 475; Title: Leader motivation and development over time).

Design and procedure. Participants were randomly assigned to either a dominance, prestige, or control condition, where they watched a video of a leader displaying both auditory and visual cues of dominance, prestige, or neither, respectively.[5] We also varied the leader's gender within each condition. Hence, this was a 3 (leader influence: dominance, prestige, control) X 2 (leader gender: male, female) between-subjects design. However, in line with our hypotheses, our analyses remained specific to leader influence based on dominance in comparison to the other two conditions. After consenting, participants learned that they would be working as part of a group headed by the team leader, Taylor. They then watched a video, where Taylor introduced himself/herself and mentioned what he/she expected from the team members. The short introductory video was similar to a typical session welcoming newcomers to an organization or team.

We recruited professional actors who were active in the local theater district of a large metropolitan European city. During the first meeting, actors learned they would be playing the role of a team leader and introducing themselves to new team members, emphasizing their

[3] In this and other experimental studies, our results remained directionally consistent and statistically significant when we did not drop any participants.
[4] Despite restricting the study to participants with full-time job experience, there were 20 participants without one. Our results remained directionally consistent and statistically significant when these participants were excluded.
[5] All our experiments were conducted using English as the medium of language.

working style and expectations. Actors were given materials and scripts for each condition, which they practiced before arriving on the day of recording. The script for each condition was characterized by typical influence cues associated with dominance or prestige, as reported by Cheng et al. (2010, 2013, 2016). For example, when roleplaying a dominant leader, actors indicated that in case of a conflict, team members would have to listen to them and go with their decision. The actor also mentioned that team members would be punished or rewarded at his/her discretion, and the success of the team would be a reflection of his/her ability and leadership. This statement portrayed Taylor, the leader, as assertive, agentic, and forceful—behaviors synonymous with leaders associated with dominance.

In the prestige condition, Taylor mentioned that team members could approach him/her if they had doubts or needed advice on a task-related issue. Taylor stated that it was important that team members learn and grow as part of this task and, in case of a conflict, reach a decision jointly. Taylor suggested that the success of the team would be a reflection of team members' ability to work and learn together. This statement portrayed Taylor as approachable, likeable, and ready to help others—behaviors synonymous with leaders associated with prestige. Additionally, in both the dominance and prestige conditions, the actors were instructed to display visual cues associated with dominance or prestige (e.g., speaking in a lower pitch or taking expansive postures in the dominance condition). In the control condition, Taylor introduced himself/herself and discussed his/her job experience. On the day of video recording, the actors dressed in business casual attire to reflect the image of a corporate team leader. Actors recorded the video with two other members present in the audience, to give the visual impression that participants would be working with other team members as part of this exercise. The recorded videos were then professionally edited to further increase their appeal and authenticity.

After watching the video, participants learned that they would be working with other participants who had been linked with them virtually. However, before starting the team exercise, participants responded to a set of measures including zero-sum, interpersonal helping, and manipulation checks, and also reported their demographics. In actuality, there was no team exercise; participants were debriefed and thanked for their involvement.

Measures

Zero-sum mindset. Participants rated an eight-item scale of zero-sum mindset (Różycka-Tran et al., 2015) on a seven point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). A sample item was "If someone gets richer, it means that somebody else gets poorer" (α = .91).

Interpersonal helping. Interpersonal helping was measured using a two-factor validated scale that estimates individuals' interpersonal helping behavior at both personal and task levels each using eight items (Settoon & Mossholder, 2002). Participants responded to the prompt "How likely would you participate in the following activities if you worked under a under a boss like Taylor?" (1 = extremely unlikely, 7 = extremely likely). The sample item for person-focused helping was "take time to listen to coworkers' problems and worries" (α = .97); and for task-focused helping: "help coworkers who are running behind in their work activities" (α = .96).

Dominance and prestige. Participants rated the leader on a 17-item validated scale of dominance (eight items) and prestige (nine items) (Cheng et al., 2010) as manipulation check. A sample dominance item was "Taylor is the type of leader who often tries to get his/her own way regardless of what others may want" (α = .98); a sample prestige item was "Taylor is the type of leader who is held in high esteem by other members" (α = .95).

Results[6]

Manipulation check. A 3 (leader influence: dominance, prestige, control) X 2 (leader gender: male, female) ANOVA on prestige yielded a significant main effect of both conditions, leader influence, $F(2, 588) = 163.99$, $p < .001$, $\eta^2 = .36$, and leader gender, $F(1, 588) = 35.47$, $p < .001$, $\eta^2 = .06$, but no interaction, $F(2, 588) = 1.83$, $p = .22$. The leader was rated higher on prestige in the prestige condition ($M = 4.97$, $SD = 1.23$) than in the dominance condition ($M = 3.27$, $SD = 1.26$), $F(1, 591) = 225.33$, $p < .001$, $d = 1.36$. The control ($M = 5.02$, $SD = .85$) and prestige conditions did not differ significantly, $F(1, 591) = .20$, $p = .66$, $d = .05$, but the control condition was significantly different from dominance, $F(1, 591) = 236.01$, $p < .001$, $d = 1.62$. Additionally, the female leader was rated higher on prestige ($M = 4.68$, $SD = 1.33$) than the male leader ($M = 4.12$, $SD = 1.42$), $d = .41$.

We performed a similar analysis on dominance ratings. A main effect of leader influence emerged, $F(2, 588) = 444.06$, $p < .001$, $\eta^2 = .61$, with the leaders rated higher on dominance in the dominance condition ($M = 6.60$, $SD = .73$) compared to the prestige ($M = 4.16$, $SD = 1.76$), $F(1, 591) = 359.46$, $p < .001$, $d = 1.82$, and control conditions ($M = 2.86$, $SD = 1.19$), $F(1, 591) = 830.46$, $p < .001$, $d = 3.82$. The prestige and control conditions also differed significantly, $F(1, 591) = 97.75$, $p < .001$, $d = .86$. We observed a main effect of gender such that the male leader was rated higher on dominance ($M = 4.80$, $SD = 1.95$) than the female leader ($M = 4.36$, $SD = 2.07$), $F(1, 588) = 16.84$, $p < .001$, $\eta^2 = .03$, $d = 22$. There was no significant interaction of leader influence and leader gender, $F(2, 588) = 2.35$, $p = .10$. Overall, our manipulation was successful.

[6] We pre-registered one-tailed tests for directional hypotheses, but report results using a more conservative approach based on two-tailed tests. Our results remained significant with one-tailed tests. Additionally, the pre-registration erroneously discusses running a 2X2 ANOVA analysis, when it should have been a 3X2 ANOVA analysis.

Since we observed a main effect of gender for both dominance and prestige ratings, we report all analysis based on two-way ANOVAs, to ensure that we took into account any variance that might be explained by gender effects. However, our hypotheses are supported based on the *main* effect of leader dominance in comparison to the control and prestige conditions.

Zero-sum mindset. A similar 3 X 2 ANOVA revealed a significant main effect of leader influence, $F(2, 588) = 41.62$, $p < .001$, $\eta^2 = .12$, no main effect of leader gender, $F(1, 588) = 2.68$, $p = .10$, and no interaction of the two, $F(2, 588) = 1.19$, $p = .30$. Participants reported higher zero-sum mindset in the dominance condition ($M = 4.68$, $SD = 1.21$) than in the prestige ($M = 4.05$, $SD = 1.26$), $F(1, 591) = 27.38$, $p < .001$, $d = .51$, or control conditions ($M = 3.58$, $SD = 1.15$), $F(1, 588) = 82.09$, $p < .001$, $d = .93$. The prestige and control conditions also differed significantly $F(1, 588) = 14.63$, $p < .001$, $d = .39$. Overall, Hypothesis 1 was supported.

Interpersonal helping. Leader influence had a significant main effect on person-focused helping, $F(2, 588) = 26.35$, $p < .001$, $\eta^2 = .10$. Participants in the dominance condition reported the least helping ($M = 4.59$, $SD = 1.74$) in comparison to both the prestige ($M = 5.33$, $SD = 1.22$), $F(1, 591) = 29.66$, $p < .001$, $d = .49$, and control conditions ($M = 5.51$, $SD = .96$), $F(1, 591) = 46.06$, $p < .001$, $d = .65$. The prestige and control conditions did not differ significantly, $F(1, 591) = 1.86$, $p = .17$, $d = .16$. There was no main effect of leader gender, $F(1, 588) = 2.14$, $p = .14$, but the interaction between leader gender and leader influence was significant, $F(2, 588) = 4.19$, $p = .016$, $\eta^2 = .01$, such that tendency to help was lowest in the dominance condition when the leader was female (see Table S2 in SI for means and SD of each cell). A similar analysis for task-focused helping yielded a main effect of leader influence condition, $F(2, 588) = 23.88$, $p < .001$, $\eta^2 = .08$, no main effect of leader gender, $F(1, 588) = .8$, $p = .37$, and a significant interaction, $F(2, 588) = 3.15$, $p = .044$, $\eta^2 = .01$. Consistent with our hypothesis, task-focused

helping was significantly lower in the dominance condition (M = 4.36, SD = 1.66) than in the prestige (M = 5.02, SD = 1.21), $F(1, 591) = 24.90$, $p < .001$, $d = .46$ or control conditions (M = 5.23, SD = .99), $F(1, 591) = 43.23$, $p < .001$, $d = .63$. The prestige and control conditions were not significantly different, $F(1, 591) = 2.56$, $p = .11$, $d = .19$. Similar to the results for person-focused helping, task-focused helping was lowest in the dominance condition with a female leader (see Table S2 in SI). Overall, Hypothesis 2 was supported.

Mediation analysis. We next performed a mediation analysis using generalized structural equation modeling (SEM) with person- and task-focused helping as the two dependent variables, zero-sum mindset as the mediator, and leader influence as the independent variable. We allowed the two forms of helping to covary while controlling for leader gender. We created two dummy-coded variable one each for dominance and prestige respectively with control as the baseline variable. A bootstrap analysis with 5,000 iterations resulted in a significant negative indirect effect of leader dominance on both person- (b = -.64, $p < .001$, *95%CI* [-.99, -.34]) and task-focused helping (b = -.62, $p < .001$, *95%CI* [-.95, -.35]) via zero-sum mindset. The indirect effect of prestige was not significant for either of the two forms of helping ($p > .10$). Additionally, the difference in the indirect effect via dominance from the indirect effect via prestige was also significant (person-focused help: b = -.62, $p < .001$, *95%CI* [-.96, -.34]; task-focused help: b = -.58, $p < .001$, *95%CI* [-.91, -.33]). In short, Hypothesis 3 was supported.

Discussion

By experimentally manipulating leader dominance, this study offered causal support in favor of our theoretical model. Further, contrasting dominance to both control and prestige conditions provides greater confidence in our findings. Finally, having both male and female leaders discuss their working style with new team members provided ecological validity to these

results. Having said that, the study had a few limitations. While ecologically valid, leaders introducing themselves via a video could be interpreted as a strong stimulus, thus raising demand effect concern. To address this possibility, we manipulated the three conditions using a text-based stimulus and replicated the above results (see Study S1 in SI). We also wanted to examine whether dominance accounts for unique variance in predicting interpersonal helping beyond directive leadership—a leadership style that has been shown to reduce employee helping behaviors (Euwema et al., 2007; Martin et al., 2012; Tremblay et al., 2019). We therefore manipulated directive and participative leadership in addition to dominance and prestige and found that dominance uniquely explained employees' reduced tendency to help via zero-sum mindset (see Study S2 in SI).

Finally, we sought to rule out role perception and autonomy as alternative explanations of our effects. Study S1 (in SI) found that zero-sum mindset explained the negative relationship between leader dominance and subordinates' helping behaviors over and above these well-known alternative explanations. Taken together, Study 2 and others in the SI go beyond the correlational nature of Study 1 to provide causal support in favor of our theoretical model, highlighting how leaders' displays of dominance may affect their followers' zero-sum perceptions and, in turn, helping behaviors. In addition, they rule out a set of plausible alternative explanations, including other leadership theories/behaviors. Yet, despite the convincing support they offer, all of these studies measured participants' tendency to help rather than their actual helping behavior. We performed Study 3 to overcome this limitation.

STUDY 3

This study was intended to demonstrate the effect of leader dominance on followers' actual helping behaviors. We pre-registered our study design, hypotheses, sample size, and

exclusion criteria in advance of the data collection (https://aspredicted.org/jt6vg.pdf). All study materials including the data, analysis file, and study verbatim can be found here: https://osf.io/9tqyf/.

Method

Sample. We used CloudResearch online panels to recruit participants who were currently employed and working in teams or did so in their past employment. We posted 500 slots for the study in exchange for $2.51 as payment, allowing us to detect a minimum size of d = .25 with 80% power. A total of 501 participants completed the study. In line with pre-registration, we dropped eight participants who were identified as having suspicious Internet service provider or GPS coordinates (Prims et al., 2018), three participants for having a non-U.S. IP address, 16 for using automatic form fillers (Buchanan & Scofield, 2018), and 60 who were not able to chat or suspected that our work environment was not real.[7] Of the remaining 413 participants, 212 were randomly assigned to the dominance condition and 201 to the prestige condition (M_{Age} = 39.25y, SD = 12.45, 50.85% males, 48.91% females, .24% non-binary). Among them, 80.15% were employed in a full-time or part-time job, 10.9% were self-employed, 2.66% were retired, 1.69% were recently furloughed, and 4.6% were unemployed ($M_{Work\text{-}exp}$ 17.07 y, SD = 11.78). The IRB approval for this study was provided by the review board of the London Business School (Protocol Number: REC 475; Title: Leader motivation and development over time).

Design and procedure. After consenting to the study, participants learned that they would be participating in an interactive study with an opportunity to work with others virtually. Participants were then connected with others in groups of four via an online chat platform, chatplat.com, where they introduced themselves to the other group members and interacted for a

[7] The results remained unchanged when these 60 people were included. Since we pre-registered this exclusion criteria in advance, we excluded those participants in our analyses.

few minutes. This step was designed to ensure that participants were aware that other members were simultaneously taking the study. After this interaction, participants were assigned a unique ID by which they would be known to others for the duration of the study. They learned that the study involved three group members and a leader, and that each participant would first complete "a standard Becker and Klein leadership influence classification paradigm"—ostensibly to allow the researchers to learn about participants' leadership style. In reality, there is no such classification and participants were actually responding to filler items. Participants also provided four words that might describe their leadership style. We further asked them about MTurk and their experience of working on the platform (e.g., how many times they had visited an online discussion forum, such as Reddit; how many times they had answered questions on such forums by fellow "MTurkers" or shared good studies with others, etc.). All these steps were taken to improve the credibility of the leadership manipulation delivered later in the study.

After submitting their above-mentioned responses, participants waited for a few seconds as others were still "working" on the questionnaire and their scores were not yet tabulated. Participants then saw a graphic that ostensibly calculated each participant's leadership score and assigned "Participant 103" as the group leader. At this juncture, participants were randomly assigned to either a dominance or prestige condition. Since control and prestige conditions did not differ in Study 2 and Study S1, we used prestige as a comparison condition for this study. Participants learned that the Becker and Klein classification would describe their leader (Participant 103) as follows. In the dominance condition, participants read:

> Participant 103 would be assertive and direct in conveying his/her opinions and thoughts with other group members. Such leaders are known to take initiative and seize every opportunity to take control of the situation. It is extremely important for such leaders to be individually successful and known for their own accomplishments. Participant 103 also possesses a good working knowledge of the MTurk platform. He/She has visited online MTurk forums on more than 20 days in the last 30 days and taken more than 10

> group studies in the past. Thus, Participant 103 seems competent and confident. In short, Participant 103 would be perceived as influencing those he/she supervises by being dominant, assertive, and taking control of the team members.

Those in the prestige condition read:

> Participant 103 cares about being respected and admired when conveying his/her opinions and thoughts with other group members. Such leaders are often granted deference by the team members they supervise. It is extremely important for such leaders to be loved, admired, and held in high esteem. Participant 103 also possesses a good working knowledge of the MTurk platform. He/She has answered fellow "MTurkers'" questions on the online forums more than 20 times in the last 10 days and has shared more than 10 quality Human Intelligence Tasks (HITs) in the past. Thus, Participant 103 seems competent and confident. In short, Participant 103 would be perceived as influencing those he/she supervises by engaging in actions that ensure he/she is respected, admired, and held in deference.

In both conditions, the leader was described as competent and confident; the only difference was the manner in which the leader influenced others. Additionally, we also described their behavior on MTurk to further reflect their dominance or prestige tendencies. For instance, in the dominance condition we highlighted the confident nature of this individual by discussing their participation on other online forums whereas in the prestige condition it highlighted the tendency of such an individual to share their thoughts with others by responding to their queries. Next, participants responded to the same 17-item measure of leader dominance and prestige ($\alpha_{Dominance}$ = .97, $\alpha_{Prestige}$ = .94), and zero-sum mindset as used in Study 2 (α=.94). Participants then learned about their group task. They had to transcribe five text images with multiple lines of text. Additionally, they were only able to advance once they had transcribed the images correctly, including full stops, commas, and other prepositions. In this way, the task was low on competence but required effort and attention. After transcribing five such images, participants learned that their task was over, but another group member had asked for help with the transcription of images. They indicated on a binary variable if they would be willing to help (yes/no). Those who said yes were then shown 10 text images and were free to transcribe as

many as they liked. We counted the total number of characters transcribed, as our measure of actual helping behavior. For those who selected not to help as their binary choice, the character count was accordingly adjusted to zero. Thus, regression analysis for this count measure was performed on the full sample. Participants then reported their demographics and were debriefed.

Results[6]

Manipulation check. A one-way ANOVA on dominance rating as the dependent variable and manipulation as the independent variable was significant, $F(1, 411) = 157.41$, $p < .001$, $d = 1.24$, such that participants reported the group leader to be more dominant in the dominance condition ($M = 5.62$, $SD = 1.14$) than in the prestige condition ($M = 3.98$, $SD = 1.49$). There was also a significant main effect on the prestige ratings, $F(1, 411) = 37.23$, $p < .001$, $d = .60$, such that the leader was perceived as higher on prestige in the prestige condition ($M = 5.56$, $SD = .93$) than in the dominance condition ($M = 4.94$, $SD = 1.09$). Thus, our manipulation was successful.

Zero-sum mindset. Supporting Hypothesis 1, a one-way ANOVA revealed a significant main effect of our manipulation on participants' zero-sum mindset, $F(1, 411) = 20.12$, $p < .001$, $d = .44$, such that zero-sum thinking was higher in the dominance condition ($M = 4.13$, $SD = 1.49$) than in the prestige condition ($M = 3.49$, $SD = 1.42$).

Interpersonal helping. Interpersonal helping was measured using two indicators: a binary variable where participants indicated if they would like to help, and a count variable consisting of the number of characters transcribed. We ran a logit regression for the binary variable and a Poisson regression for the count variable, in line with the pre-registered protocol. The binary variable was coded as 1 for agreeing to help and 0 otherwise. Of the 413 participants, 72.7% agreed to help (n = 259) and 37.3% did not (n = 154). Likewise, we coded dominance manipulation as 1 and prestige as 0. The logit regression revealed a significant effect of our

manipulation on participants' decision to help other group members, with (*b*=-.53, *SE* = .21, *p* = .011, Model 4, Table S3 in SI) or without the inclusion of control variables (*b*=-.54, *SE* = .21, *p* = .009, Model 1, Table S3), supporting Hypothesis 2. Zero-sum mindset, however, did not predict participants' categorical choice to help (*p* > .10). Hence, we did not find support for mediation by zero-sum mindset (Hypothesis 3). In short, with a categorical variable as the measure of helping, we found only partial support of our theoretical model.

We then ran a Poisson regression to examine the main effect of our manipulation on the behavioral measure of helping (i.e., the total number of characters transcribed). Dominance had a significant negative effect on the number of characters transcribed, with (*b*=-.35, *SE* = .005, *p* < .001, Model 5, Table 4) or without (*b*=-.35, *SE* = .005, *p* < .001, Model 1, Table 4) the control variables, again supporting Hypothesis 2. In addition, zero-sum mindset negatively predicted helping behavior, with (*b*=-.12, *SE* = .002, *p* < .001, Model 6, Table 4) or without (*b*=-.13, *SE* = .002, *p* < .001, Model 1, Table 4) the inclusion of the control variables.

----------Insert Table 4 here----------

Mediation analysis. We ran a parametric regression mediation model using Stata's med4way statistical package to compute the indirect effect by simultaneously running a linear regression for the continuous mediator (zero-sum mindset) and a Poisson regression for the count dependent variable (helping) while controlling for participants' gender, age, and work experience. A bootstrap analysis with 5,000 replications revealed a significant indirect effect of dominance (in comparison to prestige) on helping behavior via zero-sum mindset (*b* = -.11, *p* = .025, *95% bias corrected CI* [-.22, -.03]). Thus, Hypothesis 3 was supported.

Study 3b

To further establish the robustness of our findings, we ran a replication of the above study using a different online sample and an additional measure of zero-sum mindset. This four-item measure of zero-sum mindset was taken from a scale developed by Esses et al. (1998) and is another established operationalization of the zero-sum mindset in the management literature (He et al., 2020; Sirola & Pitesa, 2017). This step allowed us to generalize our findings beyond a single measure of zero-sum mindset. Sample items in the measure include "When some workers make economic gains, others lose out economically" and "The more employees a company employs, the harder it is for existing employees to advance" (α = .88). The design and procedure of the study remained identical to Study 3 except for the inclusion of this additional measure. Among a sample of 328 participants, we replicated all our findings, except finding the main effect of our manipulation on the binary help measure. More importantly, the correlation between the two measures of zero-sum mindset was very high (b = .79, p < .001), suggesting that they are essentially identical. Additionally, this four-item measure of zero-sum mindset mediated the negative relationship between dominance and helping. Further details of this study are available in the online supplement (see Study 3b in SI).

Discussion

Study 3 and its replication further demonstrated that leader dominance can lower individuals' helping behavior by promoting a zero-sum mindset. Importantly, we went beyond intentions of helping to a behavioral measure of helping. However, we did not find a consistent effect with respect to the binary measure of helping. There could be two reasons for this result. First, a categorical variable does not offer enough variance to capture sufficient variations in helping behavior; rather, it only offers a choice between helping and not helping at all. The second (and perhaps more intriguing) possible reason for not finding a consistent effect could be

that group members under a dominant leader's influence may agree to help but, in reality, provide far less help than those under a prestigious leader (i.e., their agreement to help is nothing more than cheap talk; Farrell & Rabin, 1996).

Although we document consistent effects of dominance on zero-sum thinking and helping behavior, all of our studies are void of actual employees' helping behaviors supervised by dominant leaders. Moreover, participants' helping behaviors in experimental studies could be representative of their implicit beliefs about such leaders rather than capturing their actual attitudes after working under these leaders. Despite research showing that implicit responses to a fictional leader prototype and ratings of real supervisors with similar traits result in comparable factor structures (Eden & Leviatan, 1975; Rush et al., 1977), there is a possibility that these effects could be a result of our manipulation. Further, participants might have been skeptical of our leadership manipulation given the online medium of our experiments. To overcome some of these organizationally relevant limitations and to ensure that our results generalize to the workplace, we tested our model using data obtained from full-time employees and their supervisors in Study 4.

STUDY 4

The main goal of this study was to test our hypotheses with full-time employees working as part of intact teams. We also wanted to demonstrate support for our hypotheses after accounting for employees' relational ties with their leader (LMX) and their perceptions of leaders' ethicality as both of these variables have been demonstrated to predict employee helping behaviors (Kacmar et al., 2011; P. M. Podsakoff et al., 1990; Wang et al., 2005). Second, we aimed to control for employee job performance as task and contextual performance can be correlated (Motowidlo & Van Scotter, 1994). Third, we wanted to test our hypotheses in a

different cultural context since our experimental studies predominantly consisted of a Western, educated, industrialized, rich, and democratic (WEIRD) sample (Henrich et al., 2010). Accordingly, we hired an Indian market research company to help us survey employees and their supervisors from a number of different organizations spanning multiple industries.

Method

The survey was carried out in two phases. In Phase 1, we surveyed employees who reported their leaders' ratings on dominance and prestige, their own ratings on a zero-sum mindset scale, their demographics, and other control variables. Leaders in Phase 1 reported each employee's job performance. Six weeks later, we implemented Phase 2 by again reaching out to the same supervisors, who rated each employee on their interpersonal helping behaviors. Employees were paid roughly $5 and supervisors $10 for their participation. The IRB approval for this study was provided by the review board of the London Business School (Protocol Number: REC 399; Title: Employee attitudes).

Sample. The final sample consisted of 249 employees from 50 intact teams with teams ranging in size from four to five members (M_{Age} = 28.99, *SD* = 2.76, 13.65% females, M_{JobExp} = 3.18 years). Employees worked in various industries: 56.22% in manufacturing, 23.69% in information technology and financial services, 8.03% in marketing, 6.02% in logistics, and 2.01% in health, hotels, or non-governmental organizations. Among employees, 77.51% had an undergraduate degree, 22.09% had obtained a graduate degree, and .40% had a diploma. 88% of leaders had a graduate degree and the rest an undergraduate degree (M_{Age} = 36.70, *SD* = 4.26, 6.02% females, M_{JobExp} = 8.70 years).

Phase 1 Measures

All measures used a seven-point Likert-type scale (1 = *not at all*, 7 = *extremely*).

Dominance and prestige. Employees rated their leaders tendency to influence based on dominance and prestige (Sparrowe et al., 2006) using the same 17-item validated scale from Studies 2 and 3 ($\alpha_{Dominance}$ = .84, $\alpha_{Prestige}$ = .82) (Cheng et al., 2010).

Zero-sum mindset. We assessed employee zero-sum mindset using the same four items as Study 3b (α = .63).

LMX. As a control variable, we measured employees' dyadic relationship with their leader using a six-item LMX scale (Liden & Maslyn, 1998). A sample item was "I like my supervisor very much as a person" (α = .74).

Ethical leadership. We measured ethical leadership using a validated 10-item scale (Brown et al., 2005). A sample item was "My supervisor disciplines employees who violate ethical standards" (α = .79).

Job performance. Supervisors rated each employee's job performance using a composite of five items: three items from MacKenzie, Podsakoff, and Fetter (1991) and two items from Burris (2012). Sample items included, "All things considered, this employee is outstanding" and "This employee has very good job-related skills" (α = .87).

Phase 2 Measures

Phase 2 measures were collected six weeks after obtaining Phase 1 measures.

Helping. We measured helping using three items from a validated interpersonal helping scale (Van Dyne & LePine, 1998). A sample item was "This particular employee assists the workgroup by helping others with the work" (α = .85).

Results

----------Insert Tables 5, 6 and 7 here----------

Confirmatory factor analysis. Confirmatory factor analysis demonstrated an acceptable fit for a seven-factor (dominance, prestige, zero-sum mindset, LMX, ethical leadership, job performance, and helping) model ($\chi 2$ (825) = 1135.97; $\chi 2$/df = 1.38; CFI = .92; TLI = .91; RMSEA = .039). Furthermore, the seven-factor model displayed a superior model fit compared to any other model (see Table 5 for comparisons with alternative models).

Regression analysis. Table 6 reports descriptive statistics, reliability coefficients, and inter-item correlations among the variables. Since each supervisor rated multiple employees within a team, the independence assumption underlying ordinary least squares regression is violated. Hence, we performed a multilevel mixed effect regression with a restricted maximum likelihood approach, treating teams as a higher-order factor, and also included industry fixed effects. Table 7 reports the multilevel regression results. After controlling for prestige, leader dominance had a significant positive main effect on employees' zero-sum mindset, with (*b* = .24, *SE* = .08, *p* = .003, *Model 3*) or without (*b* = .22, *SE* = .08, *p* = .004, *Model 1*) the control variables, supporting Hypothesis 1. In support of Hypothesis 2, leader dominance was negatively related to employee helping behavior with the inclusion of control variables (*b* = -.27, *SE* = .12, *p* = .026, *Model 6*), and the effect was marginal without (*b* = -.23, *SE* = .12, *p* = .055, *Model 4*). Additionally, once zero-sum mindset was included as a predictor, the direct effect of leader dominance on employee helping behavior became insignificant (*p* > .10), while zero-sum mindset negatively predicted employee helping behavior (*b* = -.39, *SE* = .10, *p* < .001, *Model 7;* *b* = -.37, *SE* = .10, *p* < .001, *Model 8*).

As an exploratory analysis, we also examined if dominance and prestige interactively predicted zero-sum mindset and helping behaviors. The interaction was insignificant for both zero-sum mindset (*b* = .09, *p* = .20) and interpersonal helping (*b* = .13, *p* = .23).

Mediation analysis. We performed a multilevel mixed effect mediation analysis with teams as the higher-order factor using a generalized SEM bootstrap procedure with 5,000 iterations. The indirect effect of dominance via a zero-sum mindset, after including prestige and other control variables as covariates, was negative and significant (b = -.14, z = 2.85, p = .004, *95%CI* [-.26, -.06]). After accounting for the indirect effect, the direct effect of dominance on interpersonal helping became insignificant (b = -.14, z = 1.16, p = .24, *95%CI* [-.36, .12]). Overall, Hypothesis 3 was supported.

Discussion

These results provide strong support for our proposed hypotheses. Importantly, these effects remained robust despite controlling for LMX and ethical leadership, which have been shown to predict employee helping behavior. We also accounted for variance based on job performance as it too can confound assessment of contextual performance (Kacmar et al., 2011; Motowidlo & Van Scotter, 1994; P. M. Podsakoff et al., 1990; Wang et al., 2005). Moreover, by collecting data from intact teams of full-time employees and their direct supervisors across multiple industries in a non-Western context, this study not only replicated the findings from our previous studies but also provided support for our theoretical model in a field setting in India that transcended the typical WEIRD population (Henrich et al., 2010).

GENERAL DISCUSSION

We set out to examine if the manner in which leaders influence their employees may have an unintentional adverse effect on employees helping behavior by altering their cognitions of success. Drawing on the dual framework of social rank allocation, with particular focus on leader dominance, we find that dominance fosters employees' zero-sum mental schemas of success and reduces their helping behavior. Further, zero-sum mindset mediates the negative

effect of dominance on employee helping behavior. We obtained support for our hypotheses across a sample of 147,780 individuals, using a combination of eight studies (four in the manuscript and four in SI) with varying contexts and different operationalizations of the key variables. Study 1 merged two large archival datasets and revealed that individuals living in a country ruled by a dominant leader reported greater zero-sum thinking and reduced tendency to help others. Study 2 manipulated leader dominance to demonstrate its causal effect on employees' zero-sum mindset and helping behavior. Additionally, replications reported in SI further demonstrated the influence of a zero-sum mindset on interpersonal helping, that went beyond established predictors such as autonomy, role perceptions and directive leadership. Study 3 replicated these results by demonstrating the negative indirect effect of dominance via zero-sum mindset on individuals' actual helping behaviors. Finally, Study 4, a field study with data collected at two different phases spanning a six-week window, offered further support for our conceptual model using a non-WEIRD sample of full-time employees and their supervisors.

Theoretical Contributions

Our findings advance the literature on leader influence and employee helping behaviors in a number of ways. First, we integrate the principles of social learning theory (Davis & Luthans, 1980; Wood & Bandura, 1989) with the literature on prosocial organizational behavior, thereby highlighting the pivotal role that cognitions can play in affecting employees' tendency to help others. The role of cognitive perspective on employee helping behavior have been overshadowed by interest in examining the impact of relational mechanisms such as a leader-subordinate exchange relationship (i.e., LMX; Wang et al., 2005); the motivation and affect-based mechanisms such as the trust a leader engenders (P. M. Podsakoff et al., 1990); or leaders' active involvement in the creation of cooperative group norms (Yaffe & Kark, 2011), or a safe

environment (Edmondson, 1999). Thus, our theoretical approach of demonstrating the effect of leader behavior in shaping the *cognitive* schemas of employees (e.g., a zero-sum mindset), which in turn influence helping behavior, offers a unique and valuable addition to the literature.

Second, and relatedly, our results uncover the unintentional effects that leaders can have on employees' cognitions and behaviors. These findings reflect broader observations made by social learning theorists that "job descriptions, rules, and policies are more likely to be interpreted from watching what others do than following written directives" (Davis & Luthans, 1980, p. 284). In this way, our research reveals a more subtle way in which dominant leaders by altering employees' cognitions of success may reduce helping behavior among team members, which could eventually affect team performance. Given the beneficial effects of employee prosocial behavior on a team's bottom line, it is entirely possible that dominant leaders may actually want their subordinates to participate in discretionary helping behaviors—in which case, they are inadvertently undermining their own aims by fostering a zero-sum mindset.

Third, the literature on dominance and prestige has typically argued that followers copy, emulate, and look up to leaders associated with prestige rather than dominance. In contrast to this, our findings offer a more nuanced understanding of this point by revealing how dominant leaders can influence employees' cognitions and how this can trickle down to critical employee behaviors. Thus, subordinates of dominant leaders do engage in emulating their leaders but the process underlying this emulation is cognitive and less intentional.

Fourth, scholars have lamented the lack of construct validity in measuring leaders' influence tactics, especially in the field (Hochwarter et al., 2000; Schriesheim & Hinkin, 1990). Additionally, most of these scale measures rely on measuring a single influence tactic, such as inspirational appeals, consultation, exchange, and so on. However, leaders do not depend on any

one influence tactic. They generally rely on a combination of tactics depending on their underlying disposition (Falbe & Yukl, 1992; Yukl et al., 1993). By drawing on the dual theoretical framework of social rank to broadly identify influence tactics employed by leaders, our work provides a means to capture leader influence using validated instruments. In so doing, we offer a useful way to measure leader influence tactics in a field setting.

Practical Implications

Our research offers numerous concrete suggestions for managers, employees, and organizations. One straightforward recommendation is that managers should understand that their influence behaviors may have an unintentional impact on employees by shifting their cognitive mindset. As such, managers should be aware of the behavioral style they use to influence others. Alternatively, organizations interested in spurring helping behaviors within a team should be careful in choosing team leaders, paying close attention to potential leaders' influence strategies. If naturally dominant managers want to encourage helping behavior, they need to rein in their aggressive-competitive style of influence. However, it is not always possible to change one's influence style, so an alternate approach could be to incorporate structural incentives that encourage prosocial behaviors among employees; past research has shown that reward expectations are a potent antecedent of prosocial behaviors (Schnake & Dumler, 1997).

From an employee perspective, employees must be mindful of not falling into the trap of a zero-sum mindset. Given the well-documented corrosive effects of selfish behavior in human social interactions (Fehr & Gächter, 2000; Yamagishi, 1986), a zero-sum mindset may not only limit their growth in the organization but could also breed competition and animosity with fellow employees. Hence, employees should be educated to avoid developing such mental models of success. In addition, organizations and managers can emphasize more collective and cooperative

norms to help employees construe success as holistic rather than zero-sum. Apart from cultivating helpful norms, managers can also create structural interdependence among employees to encourage cooperation and coordination. Doing so can help generate greater interaction among employees and reduce competitive feelings.

Finally, organizations can seek to communicate to their employees that success and career growth is not limited to only a few top performers in the organization, as this system breeds greater zero-sum thinking. Microsoft is a prime example of an organization that changed its evaluation system to encourage a growth mindset among its employees. In 2015, Microsoft CEO Satya Nadella changed the company's earlier mission from "having a computer on every desk in every home" to "empower every person and every organization on the planet to achieve more" (Ibarra et al., 2018, p. 6). He described this change as a way to orient employees toward a growth and learning mindset instead of a fixed and competitive performance-oriented mindset. Since the change in the company's philosophy, Microsoft continues to show steady growth in its revenues, underlining the benefits of proactively moving away from a zero-sum mindset.

Limitations and Future Directions

Our focus on interpersonal helping limits the generalizability of our findings to other forms of organizational citizenship behavior. It is possible that challenging behaviors like voice (Van Dyne & LePine, 1998) or taking charge (Morrison & Phelps, 1999), which are associated with a fixed performance-oriented mindset (Kakkar et al., 2016), might yield more benefits under a dominant (vs. prestigious) leader, as such behaviors are associated with greater feelings of efficacy and competence (Detert & Burris, 2007; Morrison, 2011). At the same time, it is also conceivable that because dominant leaders are seen as more forceful and aggressive, employees might not speak up out of fear of negative repercussions (Detert & Edmondson, 2011). Hence,

further research is needed to explore the role of leader dominance on employees' challenging citizenship behaviors. Consistent with this line of research, future studies can also explore other outcomes associated with a zero-sum mindset, such as risk-taking, behaving unethically, or escalation of commitment.

Notably, we do not claim that leaders associated with high dominance are bad for organizations and employees, although we recognize that our theoretical model and findings may give that impression. Previous research has demonstrated that dominant leaders can be extremely important for coordinating actions among followers, especially in the face of threat (Laustsen & Petersen, 2015), or may compensate for followers' lack of psychological control (Kakkar & Sivanathan, 2017). In this way, one limitation of our work is that it does not explore the positive consequences of leader dominance. Unfortunately, such exploration is beyond the scope of this paper. It is our hope that future research can build on the above findings to highlight the positive consequences of working under a dominant leader. Finally, despite evidence of within-person variability in the use of dominance and prestige strategies, our studies focused on individual variance in these two strategies. Future research can benefit by examining the within-person variability in dominance and prestige and its effects on followers' behaviors.

Conclusion

We demonstrate that leader influence tactics can affect employees' prosocial behavior at work by altering their mental schemas of success in the workplace. We find that leaders who influence others via dominance encourage greater zero-sum thinking among employees, resulting in reduced interpersonal helping. Our research highlights the importance of considering how cognitions of success may affects employee behavior. In addition, by drawing on the theoretical framework of dominance and prestige, our work also provides an opportunity for studying the

role of leader influence in a field setting. Overall, our findings show that leaders' dominant behavioral displays can have an unintentional negative effect on employees' interpersonal helping behaviors— and that leaders and organizations can benefit from addressing this possibility.

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Table 1: Overview of Studies

Study No	Study Type	Study Design	Main Contribution
Study 1	Archival	Correlational design	Using a global archival data, from two different data sources this study found support in favor of all our hypotheses.
Study 2	Experimental	3 (dominance, prestige, control) X 2 (leader's gender) between-subjects design	Manipulated leader dominance using video stimuli to demonstrate causal role of leader dominance on employees' zero-sum thinking and helping behavior in comparison to control and prestige conditions. The results were supportive irrespective of the leader's gender.
Study 3	Experimental	2 conditions (dominance, prestige) between-subjects design	This study found support for our hypotheses with a behavioral measure of helping.
Study 3b	Experimental	2 conditions (dominance, prestige) between-subjects design	Replicated the findings of Study 3 and also included an additional measure of zero-sum mindset. For details see SI
Study 4	Two-phase field study	Two-wave, multi-source correlational design	Found support for our model using field data of non-WEIRD (Indian) sample of employees and their helping behavior reported by supervisors in a two-phase field study.
Study S1	Experimental	3 conditions (dominance, prestige, control) between-subjects design	This study in SI demonstrated support of zero-sum mindset as the mechanism beyond typical explanations of helping behaviors such as autonomy and in-role perceptions by manipulating leader dominance using text-based stimulus
Study S2	Experimental	Four conditions (dominance, prestige, directive, participative) between-subjects design	Manipulated leader dominance using text stimuli to demonstrate its effect on employees' zero-sum thinking and helping behavior in comparison to prestige, participative and directive leadership. In doing so, this study (see SI) demonstrated unique relationship of dominance in influencing employee helping behaviors via zero-sum mindset.
Study S3	Experimental	2 conditions (dominance, prestige) between-subjects design	Replicated findings of Study 3 using a lab sample from a European business school. See SI for further details.

Note. All studies test the complete model, i.e., Hypotheses 1-3.

Table 2: Means, Standard Deviations, and Inter-correlations among variables in Study 1

		Mean	*S.D.*	1	2	3	4	5	6	7	8	9
1	Gender [a]	1.51	.5	1								
2	Age	40.73	16.05	0	1							
3	Income Level	4.56	2.43	-.04***	-.08***	1						
4	Political Conservatism	5.57	2.31	-.02***	.01	.03***	1					
5	Social Class [b]	3.31	.97	0	.06***	-.43***	-.06***	1				
6	Unemployment	8.77	5.11	.01*	-.03***	-.08***	.01*	.08***	1			
7	Dominant Leader [c]	.34	.47	-.01	-.13***	0	0	.06***	.04***	1		
8	Zero-Sum Mindset	4.59	2.78	-.02***	-.02***	-.02***	-.07***	.04***	.01***	-.02***	1	
9	Helping	4.74	1.13	.05***	.01***	-.02***	-.03***	-.02***	.08***	-.01	-.06***	1

* $p < .05$, ** $p < .01$, *** $p < .001$; [a] Categorical variable: 1= Male; 2 = Female; [b] Increasing value imply lower social class; [c] Categorical variable: 1= Dominant; 0 = Otherwise

Table 3: Results of Multilevel Regression for Zero-Sum Mindset and Helping in Study 1

	ZERO-SUM MINDSET			HELPING					
	Model 1	***Model 2***	***Model 3***	***Model 4***	***Model 5***	***Model 6***	***Model 7***	***Model 8***	***Model 9***
Dominant Leader [a]	1.026***		.433*	-.250*		-.247*		-.327*	-.333*
	(.255)		(.198)	(.120)		(.123)		(.140)	(.142)
Zero-Sum Mindset					-.026***	-.026***			-.026***
					(.004)	(.004)			(.005)
Income Level		-.029**	-.029**				-.019***	-.019***	-.020***
		(.011)	(.011)				(.005)	(.005)	(.005)
Gender [b]		-.096**	-.097**				.104***	.104***	.101***
		(.033)	(.033)				(.024)	(.024)	(.023)
Age		-.005***	-.005***				.002***	.002***	.002***
		(.001)	(.001)				(.001)	(.001)	(.001)
Political Conservatism		-.064***	-.064***				-.007	-.007	-.009
		(.014)	(.014)				(.005)	(.005)	(.005)
Social Class [c]		.129***	.129***				-.057***	-.057***	-.054***
		(.023)	(.023)				(.014)	(.013)	(.014)
Unemployment		-.018	-.019				.024	.031**	.032**
		(.037)	(.038)				(.014)	(.012)	(.012)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	2.561***	5.213***	5.116***	4.426***	4.550***	4.550***	4.273***	4.217***	4.351***
	(.168)	(.509)	(.522)	(.144)	(.140)	(.140)	(.189)	(.179)	(.174)
AIC	698795.2	317814.7	317802.6	185478.5	185246.3	185244.8	94887.3	94884.2	94770.8
BIC	698923.7	317951.4	317948.4	185532.7	185300.6	185308.1	94979.4	94984.7	94879.7
Log Likelihood	-349384.6	-158892.3	-158885.3	-92733.3	-92617.2	-92615.4	-47432.6	-47430.1	-47372.4
N (Level 1)	144,998	67,159	67,159	62,146	62,146	62,146	32,076	32,076	32,076
N (Level 2)	70	51	51	47	47	47	35	35	35
ICC	.082	.063	.069	.081	.087	.082	.073	.063	.064

Note. Standard errors in parentheses; * $p < .05$, ** $p < .01$, *** $p < .001$; [a] Categorical variable: 1= Dominant; 0 = Otherwise; [b] Categorical variable: 1= Male; 2 = Female; [c] Increasing value imply lower social class

Table 4: Results of Poisson Regression on Interpersonal Helping in Study 3

	NUMBER OF CHARACTERS TRANSCRIBED						
	Model 1	***Model 2***	***Model 3***	***Model 4***	***Model 5***	***Model 6***	***Model 7***
Leader Condition [a]	-.353***		-.283***		-.350***		-.286***
	(.00503)		(.00514)		(.00503)		(.00517)
Zero-sum Mindset		-.132***	-.112***			-.117***	-.0945***
		(.00170)	(.00174)			(.00174)	(.00180)
Women [b]				.405***	.392***	.367***	.361***
				(.00506)	(.00506)	(.00509)	(.00510)
Non-binary [b]				-18.14	-19.96	-18.80	-18.23
				(469.6)	(1066.3)	(687.9)	(475.2)
Age				-.0151***	-.0158***	-.0149***	-.0154***
				(.00041)	(.00041)	(.00041)	(.00041)
Work Experience				.0161***	.0168***	.0130***	.0141***
				(.00043)	(.00043)	(.00044)	(.00044)
Constant	6.137***	6.456***	6.516***	6.070***	6.255***	6.564***	6.621***
	(.00328)	(.00648)	(.00656)	(.0108)	(.0111)	(.0129)	(.0129)
N	413	413	413	413	413	413	413
pseudo R^2	.014	.018	.027	.025	.039	.038	.047
AIC	340468.0	339320.4	336263.6	336862.1	331958.3	332297.5	329200.9
BIC	340476.1	339328.5	336275.7	336882.2	331982.5	332321.6	329229.1

Note. [a] Leader condition: 1 = Dominance, 0 = Prestige; [b] Gender categorical variable with men as the base case; Standard errors in parentheses; * $p < .05$, ** $p < .01$, *** $p < .001$

Table 5: Confirmatory Factor Analysis of Alternative Models in Study 4

Model	Description	χ^2	*df*	CFI	TLI	RMSEA	Comparison with Model 1	
							$\Delta\chi^2$	Δdf
Model 1[a]	7 Factor Measurement Model	1135.97	825	.92	.91	.039		
Model 2[b]	3 Factor Model	1497.27	843	.84	.81	.056	361.3***	18
Model 3[c]	2 Factor Model	1848.22	845	.75	.72	.069	712.25***	20
Model 4[d]	Single Factor Model	2430.03	846	.60	.55	.087	1294.06***	21

Note. N = 249. CFI = comparative fit index; TLI = Tucker–Lewis index; RMSEA = Root-mean-square error of approximation.

[a] Seven factor measurement model: Supervisor assessment – Job Performance measured at Phase 1, Helping measured at Phase 2; Employee assessment – Dominance, Prestige, Zero-Sum Mindset, Ethical Leadership, Leader-Member Exchange (LMX) all collected at Phase 1

[b] All employee reported variable in Phase 1 loaded on a single factor

[c] All supervisor reported items across Phase 1 and Phase 2 loaded on to a single factor

[d] All measures combined into one factor

*p < .05, **p < .01, ***p < .001

Table 6: Means, Standard Deviations, and Inter-correlations among variables in Study 4

		M	*S.D.*	1	2	3	4	5	6	7	8	9	10	11
1	Gender [a]	1.86	.34	-										
2	Age	28.99	2.76	.3***	-									
3	Education [b]	2.22	.42	-.02	.11†	-								
4	Work Experience	3.18	1.59	.21***	.84***	.09	-							
5	LMX	3.71	.86	-.16**	.04†	.06	-.03	(.74)						
6	Ethical Leadership	4.04	.72	-.09	-.01	-.01	-.06	.63***	(.79)					
7	Job Performance	5.11	.88	-.01	.12†	.1	.11†	.08	.06	(.87)				
8	Dominance	4.67	.83	.07	-.01	0	-.04	-.39***	-.46***	-.07	(.84)			
9	Prestige	4.06	.79	-.13*	-.02	-.08	-.03	.48***	.64***	.03	-.49***	(.82)		
10	Zero-Sum Mindset	4.47	.9	.01	-.05	-.02	-.06	-.01	-.17**	-.06	.33***	-.09	(.62)	
11	Helping	4.38	1.31	.08	-.06	-.02	-.07	-.11†	-.02	.08	-.09	-.05	-.27***	(.85)

Note. Reliability coefficients in parentheses; † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$; [a] Categorical variable 1= Female, 2 = Male; [b] Categorical variable 1= Diploma, 2 = Undergraduate degree, 3 = Graduate degree.

Table 7: Results of Random Coefficient Modeling on Zero-Sum Mindset and Interpersonal Helping in Study 4

	ZERO-SUM MINDSET			INTERPERSONAL HELPING				
	Model 1	***Model 2***	***Model 3***	***Model 4***	***Model 5***	***Model 6***	***Model 7***	***Model 8***
Dominance	.222**		.236**	-.228†		-.272*	-.104	-.155
	(.0768)		(.0783)	(.119)		(.122)	(.120)	(.123)
Prestige	.127		.118	-.234		-.148	-.193	-.102
	(.0890)		(.100)	(.133)		(.153)	(.130)	(.150)
Zero-Sum Mindset							-.387***	-.373***
							(.0981)	(.0992)
Gender [a]		.0359	.0724		.378	.342		.367
		(.162)	(.163)		(.262)	(.262)		(.255)
Age		-.0127	-.0174		-.0206	-.0102		-.0151
		(.0385)	(.0382)		(.0594)	(.0593)		(.0577)
Education [b]		.0365	.0281		-.0623	-.0756		-.0834
		(.133)	(.132)		(.206)	(.205)		(.199)
Work Experience		.0171	.0213		-.0838	-.103		-.0993
		(.0654)	(.0648)		(.101)	(.101)		(.0978)
LMX		.195*	.211*		-.212	-.241		-.164
		(.0817)	(.0823)		(.129)	(.130)		(.128)
Ethical Leadership		-.132	-.148		.0284	.00730		-.0681
		(.107)	(.114)		(.160)	(.178)		(.174)
Job Performance		-.0597	-.0500		.164	.158		.142
		(.0576)	(.0578)		(.0941)	(.0935)		(.0910)
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	2.766***	4.615***	3.038*	6.531***	4.523**	6.473***	7.447***	7.529***
	(.822)	(1.142)	(1.242)	(1.148)	(1.660)	(1.875)	(1.139)	(1.846)
N	249	249	249	249	249	249	249	249
ICC	.283	.368	.292	.088	.113	.115	.088	.114

Note. Standard errors in parentheses; † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$; [a] Categorical variable 1= Female, 2 = Male; [b] Categorical variable 1= Diploma, 2 = Undergraduate degree, 3 = Graduate degree.