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Leadership Style on Shared Leadership and Team Performance Via Followership Style

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Abstract

Recent work has demonstrated a strong link between shared leadership and team task performance. Despite these findings, there is still yet to emerge research on the degree to which leadership style on the part of a designated leader predicts the emergence of shared leadership in the established relationship between shared leadership and team performance. The present study aims to address this literature gap by manipulating leadership style in a teamwork study in order to observe the effect of directive versus participative leadership on the emergence of shared leadership, and its subsequent impact on team performance. Furthermore, the present study also aims to observe the proposed moderating effect of followership style, identically manipulated as proactive and reactive, on the relationship between leadership style and shared leadership. We found that shared leadership is higher when a participative rather than directive and that both individual and team task performance were positively predicted by shared leadership, though these relationships were not statistically significant.

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Leadership Style on Shared Leadership and

Team Performance Via Followership Style

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LEADERSHIP STYLE ON SHARED LEADERSHIP AND TEAM PERFORMANCE VIA FOLLOWERSHIP STYLE

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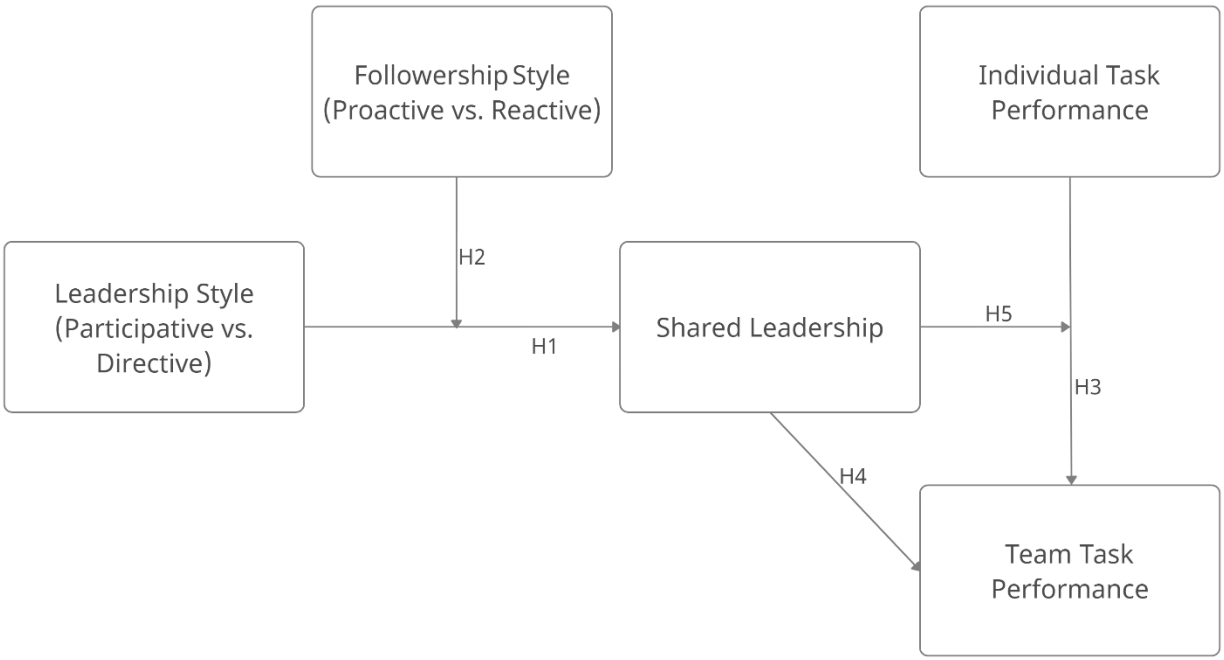
Introduction

Shared leadership is a team-level phenomenon in which leadership responsibilities are evenly distributed amongst a team such that having a designated "leader" holds less value (Carson et al., 2007). Historically, leadership has been viewed as a key component to the success of work teams (Cohen & Bailey, 1997). While we do not dispute this, we hold that leadership should not be viewed as solely a role held by a single person, even if a designated leadership role is deemed necessary. The literature on the relationship between shared leadership and team performance, including powerful meta-analytic findings, suggests that there is a positive relationship between the two (D'Innocenzo et al., 2016; Wu et al., 2020). Despite these findings, less is known regarding how shared leadership arises in the first place, particularly when there is a formally appointed leader. Some suggest that when there is a willingness on the part of a designated leader to pass authority to the team, the adoption of a particular leadership style, such as transformational or empowering leadership, on the part of a designated leader facilitates the emergence of shared leadership in teams (Hoch, 2013). Others have found evidence supporting the claim that the personality trait of leader humility predicts the emergence of shared leadership in teams (Chiu et al., 2016). Utilizing a field study, Chiu et al. (2016) found support for the hypothesis that humility of the formal leader is positively related to the emergence of shared leadership in teams. In addition to the formal leader being willing to share or pass authority to team members, team members must also be ready and willing to accept that authority. Chiu et al. (2016) also found support for the idea that team proactive personality moderates the relationship between humility and the emergence of shared leadership.

The present study expands on this idea by manipulating leader behavior (participative versus directive) and follower behavior (proactive versus reactive) in a laboratory experiment to determine if leader and follower behavior influences the emergence of shared leadership and how this impacts team performance. We start by examining the direct effect of leadership style (participative versus directive) on the emergence of shared leadership. We also seek to observe whether follower behavior (proactive versus reactive) strengthens this relationship such that proactive followers and participative leaders will yield the highest levels of shared leadership. Next, we aim to determine if shared leadership both directly predicts team task performance, as the literature would suggest, as well as if it moderates the proposed relationship between individual task performance and team task performance. Our theorized model can be visualized in figure 1 below.

Figure 1



Shared Leadership

Recent leadership scholars define shared leadership as "an emergent team phenomenon whereby leadership roles and influence are distributed among team members," (Zhu, et al., 2018, Carson et al., 2007). Contemporary empirical and meta-analytic research suggests that there is a diverse array of contributors to the emergence of shared leadership in teams, spanning the horizon of internal team environment and team heterogeneity (Wu et al., 2020) to leader and follower personality (Chiu et al., 2016) to LMX differentiation and servant leadership (Wang et al., 2017). As far as antecedents are concerned, shared leadership is a multidimensional phenomenon with a number of important predictors. Concerning outcomes of which shared leadership is an antecedent, team performance stands as the star-studded prime example (D'Innocenzo et al., 2016). For example, longitudinal data suggests that, with decreased team conflict as a mediator, shared leadership in teams positively predicts team performance (Gupta et al., 2010).

Since the turn of the millennium, the study of leadership development has shifted its focus to a more collaborative and collective lens through which leadership is conceptualized (Carson et al,. 2007; Fletcher & Kaufer, 2003; Pearce & Conger, 2002). Although it has been firmly established that there exists a strong positive relationship between shared leadership and team performance (D'Innocenzo et al., 2016), the phenomenon is too complicated to characterize with bivariate correlations alone, and all antecedents must be investigated to nuance our understanding. According to adaptive leadership theory, shared leadership is constructed when team members engage in a healthy combination of leadership-claiming behaviors and leadership-granting behaviors with their teammates (DeRue & Ashford, 2010; DeRue, 2011). In other

words, team members must both step up as leaders, as well as cede the spotlight to teammates so as to share leadership and followership responsibilities amongst themselves. The balanced interplay between claiming and granting on the part of team members serves as the foundation of shared leadership.

Regardless of the presence or absence of a designated leader, shared leadership occurs when multiple team members spontaneously negotiate and renegotiate leadership and followership responsibilities amongst themselves, as leadership is not centralized, but shared (Chiu et al., 2016). That being said, shared leadership can be thought of as a dyadic, relational social process primarily contingent upon the behavioral interactions between team members. This conceptualization fits neatly within the lens of social network analysis, as it allows for understanding the phenomenon without requiring the consideration of the attitudinal or cognitive consensus of team members (Carson et al., 2007; Mehra et al., 2006). Such an approach also affords us the opportunity to model shared leadership in behavioral, rather than cognitive or attitudinal terms, with the granting and taking of leadership and followership roles being the primary behaviors of interest.

Encouraging the Emergence of Shared Leadership: Participative vs Directive Leadership

While shared leadership has been shown to enhance team effectiveness, the question arises regarding how shared leadership can be facilitated by an appointed leader who wishes to take advantage of the positive relationship between shared leadership and team performance. Traditional schemata of leadership are inconsistent and consensus is rare (Bass & Bass, 2009). Classic leadership authorities typically depict the behavior of designated leaders as either task-

oriented or relationally-oriented (Hersey & Blanchard, 1968), in that the responsibility of the leader is to either authoritatively direct subordinates towards completing tasks, or to build relationships with followers to so as to participate alongside subordinates in goal attainment. We relate this age-old dichotomy to that distinguishing directive leadership from participative leadership, which we believe is conceptually correspondent. Directive leadership is defined as the behavioral process of guiding followers' participation by providing directions for accomplishing problem-solving objectives, to which compliance is expected from followers (Kahai et al., 2004). Participative leadership, however, is defined as a leadership style that involves joint decision-making, or shared influence on decision-making on the part of a leader and their followers (Koopman & Wierdsma, 1998). Leadership research from the last twenty years has grappled with the task of determining which of the two behavioral approaches yield the best outcomes and under what conditions. A study found that directive leadership negatively influenced shared values among customer-facing banking employees, while participative leadership exhibited the opposite effect (Dolatabadi & Safa, 2010). Shared values are described as the critical "glue" that holds team members together as they work towards a common goal (Hartline et al., 2000), and thus can be thought of as an intuitive conceptual relative of shared leadership. Of course, directive leadership does have its place, and, for example, it has been linked to school staff team performance (Somech, 2005).

Unlike shared leadership, which is a group-level social phenomenon, participative leadership is an individual-level behavioral phenomenon in which a designated leader behaves as an equal to his or her subordinates. As such, we think of participative leadership on the part of leaders as a natural behavioral antecedent to the emergence of shared leadership on the part of

teams. In fact, Zhu et al, (2018) breaks down shared leadership-adjacent constructs in part by unit of analysis, referring to shared leadership as a team-level phenomenon and participative leadership as an individual or dyadic-level phenomenon. Participative leadership has been shown to improve decision-making quality and positive affect and perceptions on the part of both supervisors and subordinates (Scully et al., 1995). Additionally, a relationship between supervisor participative leadership and subordinate task performance was found to occur via psychological empowerment on the part of supervisors (Huang et al., 2010). These findings suggest that participative leadership is a generally productive behavioral phenomenon, but its relationship to the ultimate outcome of performance is mediated by additional variables. In the present study, we posit that participative leadership lays the psychological groundwork for the emergence of shared leadership in teams.

It has been repeatedly shown through empirical research that designated leaders serve as crucial sources of information for their followers due to the status they hold and the direct interactions they have with subordinates. Therefore, it is undoubtedly the case that leader behavior not only influences follower behavior, but sets a standard for what is considered appropriate behavior among a team. The influence of a designated leader's behavior has been demonstrated to reach overall group behavior and can encourage and motivate specific behaviors on the part of followers (Bunderson & Reagon, 2011). Therefore, after considering the influence that leader behavior has on follower behavior, the present study aims to experimentally manipulate leader behavior so as to influence followers in such a way that is consistent with the tenets of shared leadership.

Relating back to Chiu et al. (2016), the link between leader humility and shared leadership stems from the finding that humble leaders are more likely to encourage employee participation and involvement than their less-humble peers (Morris et al., 2005). This suggests that humility as a personality attribute inclines leaders to encourage the exhibition of key behavioral components of shared leadership in followers. Morris et al. (2005) refers to leader humility as an antecedent of participative leadership. Conceptually, participative leadership is a natural antecedent to shared leadership and intermediary variable between leader humility and the emergence of shared leadership in teams. This mechanism is what we aim to emulate in the first main effect relationship in our model, between leadership style and shared leadership, in that participative leadership on the part of the designated leader will better facilitate the emergence of shared leadership than will directive leadership, as the behavioral prescriptions of participative leadership are consistent with the consequences of humility in leaders. Thus, rather than observing humble leaders, we manipulate designated leaders to behave as humble leaders would.

Hypothesis 1: A participative leadership style in a designated leader is more strongly related to the emergence of shared leader in teams than a directive leadership style in a designated leader.

Followership Style

The next component of our model is the proposed moderating effect of followership style on the relationship between leadership style and shared leadership. The existing literature on follower expectations of leadership processes is sparse and represents a research gap that we aim to fill. Research on the role of followership in the overarching social process of leadership is

burgeoning (Uhl-Bien et al,. 2014), and there is evidence that follower attachment style interacts with leader motives to produce leadership outcomes (Shalit et al., 2010). However, publications on the effect of alignment between leaders and followers on their respective approaches to leadership and followership are few and far between. There has been research concluding that "real leadership" cannot take place in the absence of highly aligned meanings between leaders and followers, but there *can* be management (Alvesson, 2019). This is precisely what our study seeks to expand upon, the phenomenon of alignment between leaders and followers.

A prominent theoretical paper, Alvesson (2019) outlines a background on leader-follower alignment research and proposes four main forms of the phenomenon. Of the four discussed forms, those being high-alignment leadership, value misfit, construction misfit, and multiple breakdowns, we are aiming to stimulate the production of shared leadership through high-alignment leadership (shared meanings), in which the designated leader behaves participatively, rather than directively, and the followers behave proactively, rather than reactively. The primary focus of the paper is on the alignment between leaders and followers in both the quality and type of interaction that is occurring in the dynamic. Our research addresses only type, rather than both type and quality of leadership. It has been asserted that "Effective leaders provide subordinates with direction and support (i.e., coaching) that helps them to accomplish their goals." (Chemers, 2003, p. 11). This cannot occur in the absence of aligned meanings of leadership between leaders and followers. This is why we believe that, by manually aligning leaders and followers to work on a problem-solving task with the same expectations of and intentions regarding how to behave within the leader-follower relationship, and by assigning a collaborative nature to the aligned conception of leadership, we can stimulate the production of shared leadership. This alignment

of proactive followers and participative leaders lays the groundwork for a unitary overarching structure of leadership that is fundamentally characterized by its collaborative and democratic nature, thus representing an environment in which shared leadership can thrive.

This represents a literature gap that we aim to fill by predicting that the emergence of shared leadership will be strongest when followers behave in a proactive manner and expect the leader to behave participatively, and the leader does in fact exhibit participative leadership. This is because we intuitively expect cooperation and teamwork to be strongest when the leader is on the "same page" as the followers in terms of promoting key behavioral components of shared leadership. On the other hand, we predict that shared leadership will be weakest when the leader exhibits directive leadership and the followers behave reactively and expect directive leadership, as despite the alignment in style, directive leadership runs counter to the tenets of shared leadership. We expect that shared leadership will be somewhere in the middle when leadership and followership style are misaligned.

Relating back to Chiu et al,. 2016, the interaction between leader humility and team proactive personality in predicting shared leadership demonstrates that when team members exhibit an inclination to proactively identify opportunities and take initiative in the pursuit of meaningful change (Crant & Bateman, 2000), the relationship between leader humility and shared leadership is strengthened. In the present study, we also aim to emulate team proactive personality via our manipulation of followership style. Through instructing followers to work equally and cooperatively with the leader, we are manipulating followers to adopt behavioral tendencies consistent with those exhibited by proactive individuals. Similarly, through instructing followers to cede full control of group processes to and answer to the leader, we are

manipulating followers to adopt behavioral tendencies consistent with those exhibited by reactive, or non-proactive individuals.

Hypothesis 2: The followership style of the team members will moderate the relationship between leadership style of the designated leader and shared leadership such that shared leadership will be highest when leaders employ a participative leadership style and followers employ a proactive followership, as compared to any combination of either misaligned leadership and followership style, or an alignment of directive leadership style and reactive followership style.

Individual Task Performance on Team Task Performance

Our next proposed main effect relationship is that between individual task performance and team task performance. In this component of our model, we propose that teams with more competent members (i.e. individual task performance) will perform better. Meta-analytic evidence suggests that smarter teams, i.e. teams composed of individuals with high general cognitive abilities, tend to exhibit higher team performance (Devine & Philips, 2001). Additionally, it has been found that in a university student population, groups tended to outperform individuals on tests by nearly 4% (Pandey & Kapitanoff, 2011). This shows that not only do smarter teams perform better, but teams in general perform better due to having more minds at work to provide more information and identify errors. Therefore, we believe that when individual team members are higher performers, then the teams in which they are a part will also exhibit higher task performance.

Hypothesis 3: Individual task performance on a problem solving task will positively predict team task performance on the problem solving task such that team task performance will be higher when individual task performance is higher.

Shared Leadership on Team Task Performance

As discussed, the shared leadership literature is replete with evidence that shared leadership is a strong predictor of team performance, with recent meta-analytic findings firmly establishing the integrity of these effects (D'Innocenzo et al., 2016). Therefore, since both shared leadership and team task performance are operationalized as variables in the present study, we have decided to include the main effect of shared leadership on team task performance as our fourth hypothesis in order to corroborate the findings most prevalent in the research literature.

Hypothesis 4: Shared leadership will positively predict team task performance on a problem solving task such that team task performance will be higher when shared leadership is higher.

Shared Leadership on the Individual-Team Task Performance Relationship

The final component of our model is a proposed moderating effect of shared leadership, on the aforementioned proposed relationship between individual task performance and team task performance. First, we must address the glut of evidence supporting the relationship between shared leadership and team performance, without considering individual performance. It has been found that positive changes in shared leadership are related to positive changes in team performance, mediated by positive changes in trust (Drescher et al., 2014). In the Chiu et al. (2016) study on which the present study is based, it was found that team task performance is

positively predicted by shared leadership, moderated by team performance capability, which refers to the ability of the employees that make up a team to successfully complete their tasks (Mathieu et al., 2015). Furthermore, meta-analytic findings indicate that shared leadership is a significant antecedent to team performance (Fausing et al., 2013; Fausing et al., 2015; Hoch, 2013; Zhou, 2016), team functioning (Bergman et al., 2012), and team satisfaction (Serban & Roberts, 2016), among other important positive team outcomes (Wu et al., 2020). For example, a field study of virtual teams found that regardless of degree of virtuality, shared leadership was significantly related to team performance (Hoch & Kozlowski, 2006). Another study of startup firms found that while both shared and vertical leadership significantly predicted new venture performance, shared leadership accounted for a significantly greater proportion of variance in new venture performance based on hierarchical regression analysis (Ensley et al., 2006).

Our theoretical justification for our proposed relationship between individual and team task performance moderated by shared leadership lies in the principle of shared leadership encouraging knowledge sharing. It has been found that groups will perform at the level of the most competent team member if said member shares his or her answer with the group, and the group decides to accept said answer (Davis, 1973; Littlepage, 1991; Steiner, 1972). The conditionality of this phenomenon is the reason we believe that shared leadership will moderate the individual-team task performance relationship. Shared leadership has been shown to be positively predictive of knowledge sharing behaviors (Han et al., 2018), which is precisely the type of behavior that has been shown to maximize the likelihood of a competent team member sharing his or her solution with the group. Authoritative shared leadership scholars have suggested that team members may be less likely to accept influence from one another if low-

quality relationships between team members are present (Zhu et al., 2019). This is why we believe that the presence of shared leadership will both encourage knowledge-sharing on the part of individual team members, as well as encourage knowledge-acceptance on the part of the entire team, hence the proposed moderating effect of shared leadership on the individual-team performance relationship.

Hypothesis 5: Shared leadership will moderate the relationship between individual task performance and team task performance such that this relationship will be stronger as shared leadership increases, and weaker as shared leadership decreases.

Method

Participants

The participants recruited for this study were students at a large mid-Atlantic research university enrolled in a psychology course for which they were required to participate in an ongoing research study for course credit or for which they received extra credit. 140 students divided into 41 teams participated in the study. The total sample size after removing one group case for missing data was 137 participants, yielding data from 40 groups. All participants were of traditional undergraduate student age, with an average age of 19.31 years. The demographic makeup of the sample was as follows: 1. gender: 72.4% female, 26.2% male, 0.69% non-binary, 27.6%; 2. race: 27.59% White, 22.1% Black or African-American, 26.2% Hispanic or Latino, 4.8% Asian, 0.69% American Indian or Alaska Native, 13.8% of participants were multiracial, and 3.4% of participants identified as other. As for year in school, 40% of participants were in their freshman year in college, 21.4% were sophomores, 22.1% were juniors, 11.7% were

seniors, and 3.4% were graduate students. Participant recruitment took place via Sona-Systems, which is why all participants were enrolled in at least one psychology course during the semester in which they participated in this study.

Procedure

This was a teamwork study that was conducted entirely virtually. All studies were conducted online via Zoom. Upon joining the Zoom meeting, participants' on-screen names would immediately be changed to those of the geometric shapes, square, circle, triangle, rectangle, and hexagon. This was done to both maintain the anonymity and affective neutrality of participants' identities, as well as for the experimenters to know which participant was assigned to be the leader; the participant assigned the name of "square" was the designated leader in each study, and this participant was decided based on when he or she showed up. This was also randomized, for example, in some group timeslots, the first participant to enter the call was to be made the leader, whereas in other studies, the second or third participant to enter the call was to be made the leader. Because of the three-participant minimum, it was never determined that the fourth or fifth participant to join the call was to be made the leader, as it was never guaranteed that four or five participants would show up, even if there were four or five participants registered.

The experiment commenced with the experimenters welcoming the participants and explaining the study, including the requirement for participants to keep their cameras on for the duration of the study. All participants then filled out an informed consent form via a Qualtrics survey and answered questions about their past leadership experience, their responses to which

ostensibly used to assign a designated leader among the group. Although the leader was assigned before the participants were given the Qualtrics survey to complete, participants were led to believe that their responses to the survey were taken into consideration when assigning the leader, as the main purpose of the study was to assign a particular leadership *style*, rather than simply a leader. Any participants who did not consent to participate in the study were thanked for their time dismissed, though this never occurred. Participants were given 15 minutes to complete this survey. Once all participants filled out the survey, the experimenters took a short break so that the host could ostensibly analyze the participants' responses and make judgments about their candidacies for the leadership role. The host would then announce that "square" was the best fit for the leader position based on their responses, and proceeded to move the leader into a breakout room to inform them of their role. The rest of the team remained in the main room and were given their instructions. Once both the leader and the followers confirmed that they understood their roles, the host would reenter the main room with the leader, and the teamwork exercise would begin.

Leaders were given one of two sets of instructions (participative or directive). In the participative condition, the leader was given directions indicating that their role was "to work equally with the rest of the group and facilitate the use of everyone's strengths in the decision-making process" In the directive condition, the leader was given directions indicating that their role was to "have full control over the actions of the group and that the followers must do as the leader says, and that the leader makes the final decision" The followers were also given one of two sets of instructions (proactive vs reactive). In the proactive condition, the followers were given directions indicating that their role was to "work cohesively and equally together to

complete the task," and that the leader was "there to help facilitate the use of everyone's strengths." In the reactive condition, the followers were given directions indicating that their role was to "work under the direction of the leader to complete the task" and that "the leader has full control over the direction of the group." This resulted in four conditions: 1. a participative leader with proactive followers, 2. a participative leader with reactive followers, 3. a directive leader with proactive followers, and 4. a directive leader with reactive followers.

The teamwork exercise began with the cohost explaining that the team has been tasked to rank order four anonymous job candidates based on their suitability to a graphic designer role in New York City. During this explanation, no mention of conditional assignments was made, as participants were intended to be blind to this manipulation. In the Zoom chat, the host uploads a PDF file containing the job description, the four candidates' resumes, and the four candidates' art portfolios. Once the exercise has been explained and the participants affirm that they do not have any questions about their tasks, the cohost informs them that they will be allotted 35 minutes to complete the activity. The host and the cohost both disable their cameras and microphones and allow the participants to interact independently to complete the task. The instructions for the task are also pasted into the Zoom chat in case any participant forgets what is expected of them. Each participant received all of the materials for all four of the job candidates, as well as the job posting. All materials are included in the appendix.

Once the participants had completed the activity, or the 35 allotted minutes had elapsed, the cohost sent a survey for the leader to complete independently, while the followers stood by. This survey prompted the leader to rank the job candidates from best fit to worst fit, consistent with the aim of the teamwork task, and to provide a brief explanation for said rankings. Finally,

once this survey was completed, all participants were sent one final survey to complete. This final survey included all of the debriefing information and two measures of shared leadership, as well as a variety of miscellaneous questions such as the degree to which participants felt that other participants engaged in social loafing and the degree to which team members worked together collaboratively on the group task. Responses to miscellaneous questions were not included in any analyses for the present study. Once all of the final surveys were completed, participants were awarded their SONA credits and sent off, thus concluding the procedure of this study.

Measures

Shared Leadership

Shared leadership was measured using a shortened version of a validated shared leadership questionnaire developed by Hiller (2006). This measure had participants rate on a seven-point Likert scale, from "Never" to "Always", corresponding to values of 1 to 7, respectively, the frequency with which their teammates engaged in a variety of behaviors, including planning how to complete the task and organizing tasks so that work flows more smoothly. Group-level shared leadership scores were computed by averaging across all group members' individual scale scores on this measure. The original measure featured 25 items, whereas ours sports only seven. Despite the truncation, reliability analysis using Cronbach's alpha exhibited good internal reliability for this measure ($\alpha = 0.89$). Interrater reliability was computed using intraclass correlation analysis, but yielded subpar agreement estimates ($ICC_1 = .092$, $ICC_2 = .259$), which will be discussed later on as a study limitation.

Team Task Performance

Team task performance was measured using the entire team's ranking of the job candidates. The candidates' resumes and portfolios were gathered from sample information from the internet, and the correct order was objectively determined by the experimenters' careful analysis and understanding of personnel selection. The score for this measure corresponds to the edit distance of each group leader's reported candidate rankings to the actual, correct ranking of the job candidates, on behalf of the entire team. Edit distance was calculated using the Optimal String Alignment distance method, which is similar to the classic Levenshtein distance method (Levenshtein, 1965), but differs in that it allows adjacent characters to be transposed. Using this method, the maximum score is 0, indicating a perfect match between participant and correct responses, and the minimum score is 4, indicating the worst possible match between participant and correct responses. To be consistent with the directional orientation of the rest of our study variables, this performance variable was reverse scored such that a value of 0 corresponds to the worst performance score and a value of 4 corresponds to the maximum performance score.

Individual Task Performance

Individual task performance was measured by considering each individual team member's ranking of the job candidates and producing a group performance score aggregated across the edit distance of each team member's reported candidate rankings to the actual, correct ranking of the job candidates. As was the case for group task performance, edit distance for individual task performance was also computed using the Optimal String Alignment distance

method and then reverse scored to be consistent with the directional orientation of our other study variables.

Manipulation Check

All participants responded to an item on the final survey serving as a manipulation check. Leaders responded to the item, “What was your role as leader?”, to which they responded either “To Lead and Direct the Other Group Members,” or “To Facilitate Discussion and Encourage All Group Members to Participate” Followers responded to the item, “What was your role as a follower?”, to which they responded either, “To listen to the leader and follow their instructions,” or “To work together with the leader to complete the task” Correct responses were coded as 1 and incorrect responses were coded as 0. Frequency analysis indicated that 63.41% of leaders and 68.75% of followers passed the manipulation check. These figure are concerningly subpar and will be discussed as study limitations later on.

Study Design

This study utilized a 2x2 factorial design for its experimental manipulation (Hypotheses 1 and 2) with four different conditions in which leaders and followers were assigned either the same or different expectations as to what type of leadership will be employed to complete the group task. Therefore, leadership style expectations were the manipulated, independent variable in both the designated leaders and their followers. The four conditions, denoted as leadership style-followership style are as follows: participative-proactive, participative-reactive, directive-proactive, and directive-reactive. Hypotheses 3, 4, and 5 will utilize a standard moderation

design for the continuous or ordinal variables of shared leadership, individual task performance, and team task performance. Our proposed model is visualized in Figure 1 above.

Data Analysis

Our hypotheses will be tested using a series of two moderated regression analyses, one for hypotheses 1 and 2, and a second for hypotheses 3, 4, and 5. Leadership style and followership style will both be dummy coded into binary variables, with participative leadership and proactive followership being assigned 0, and directive leadership and reactive followership being assigned 1. We will use the statistical programming language, R, and its corresponding integrated development environment, RStudio Desktop 2022.02.1+461 to run all of our analyses. Specifically, our regression analyses will be run using functions contained within the 'stats' package, version 4.1.0. In order to address the issue of multicollinearity in our predictors, with specific regard to our individual task performance variable and our shared leadership measure, we mean centered both of said variables. Analysis of our regression models using the Variance Inflation Factor (VIF) index following our mean centering procedures yielded values suggesting that the issue of multicollinearity has been amply addressed.

Results

See table 1 below for descriptive statistics and correlations among all study variables. Hypotheses 1 and 2 were tested using moderated linear regression. The two predictor variables of leadership style and followership style explained 5.6% of the variance in shared leadership (R^2 = .056, $F(3, 36) = .71$, $p = .55$), and the direct effect of leadership style on the emergence of

shared leadership was not found to be significant (β = -0.17, p = 0.44), therefore Hypothesis 1 was not supported. A visual

Table 1

Means, standard deviations, and correlations with confidence intervals

Variable	*M*	*SD*	1	2	3	4
1. Shared Leadership	5.85	0.69				
2. Leadership Style **(0 = Participative 1 = Directive)**	0.50	0.51	-.16 [-.45, .16]			
3. Followership Style **(0 = Proactive 1 = Reactive)**	0.47	0.51	.16 [-.16, .45]	.05 [-.27, .36]		
4. Individual Task Performance	1.57	0.84	-.27 [-.53, .05]	.11 [-.21, .41]	.02 [-.29, .33]	
5. Team Task Performance	1.48	1.11	.15 [-.17, .44]	.02 [-.29, .33]	.27 [-.04, .54]	.04 [-.27, .35]

Note. M and *SD* are used to represent mean and standard deviation, respectively. Values in square brackets indicate the 95% confidence interval for each correlation. The confidence interval is a plausible range of population correlations that could have caused the sample correlation (Cumming, 2014). This is all group-level data (N = 40).

representation of Hypothesis 1 can be seen below in figure 2, in which best fit lines illustrate that an effect *is* observed in the direction hypothesized, but it is not strong enough to be significant.

The interaction between leadership style and followership style was also not found to be significant (β = .003, p = 0.99), therefore we do not conclude that moderation was present and Hypothesis 2 was not supported. Additionally, the direct effect of followership style on shared leadership was also not found to be significant (β = .17, p = .46).

Hypotheses 3, 4, and 5 were also tested with a moderated linear regression analysis. The two predictors of shared leadership and individual task performance explained only 5% of the variance in team task performance (R^2 = .049, F(3, 36) = .62, p = .60), and the direct effect of individual task performance on team task performance was not found to be significant (β = .126, p = 0.47), therefore Hypothesis 3 was not supported. This relationship is visualized below in figure 3 with a scatterplot and regression line that suggests, as was the case with Hypothesis 1, that an effect *does* exist, but is too weak to yield significance. Because our performance variables generated only four ordered levels of scores, we also tested Hypothesis 3 using ordinal regression, which yielded similarly nonsignificant results.

The interaction between shared leadership and individual task performance was also not found to be significant (β = -.149, p = 0.40), therefore we do not conclude that moderation was present and Hypothesis 5 was not supported. This interaction can be visualized in figure 3 below with an interaction scatterplot, suggesting the possible presence of a counterintuitive effect. Finally, the direct effect of shared leadership on team task performance was also not found to be significant (β = .223, p = .22), therefore Hypothesis 4 was not supported. Hypothesis 4 is shown below in figure 5, underneath figure 4, with a scatterplot and regression line suggesting that an effect *does* exist in the hypothesized direction, but is too weak to yield statistical significance.

Figure 2

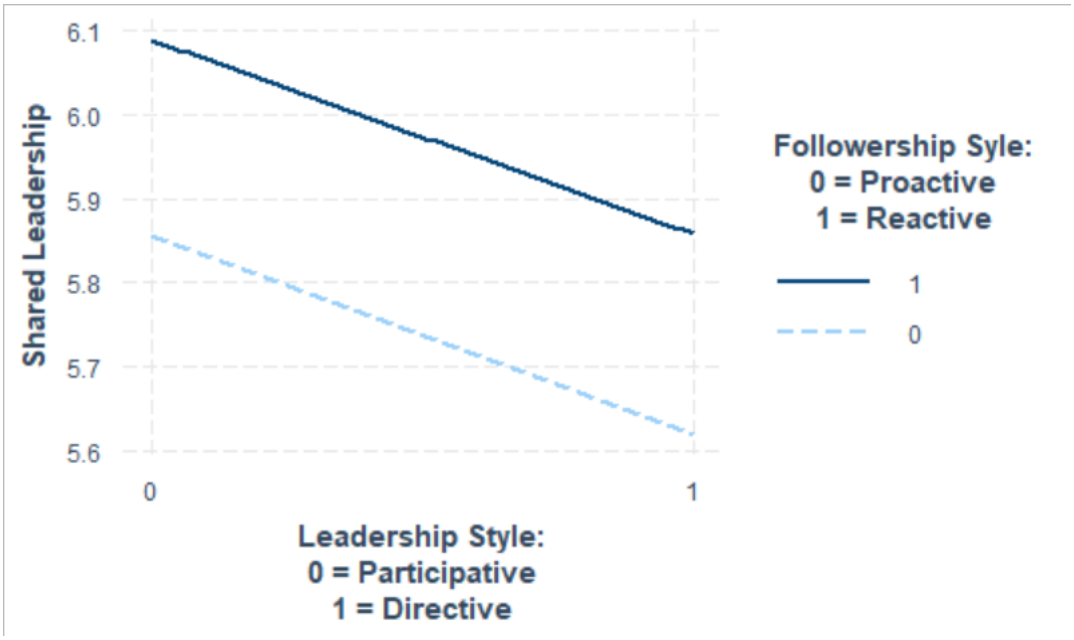


Figure 3

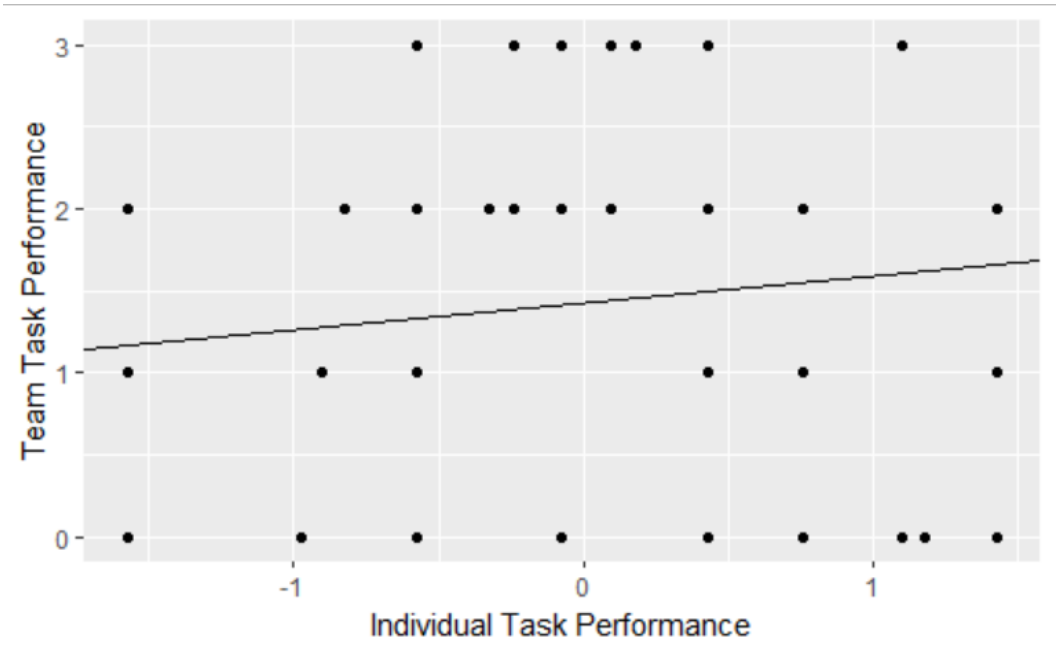


Figure 4

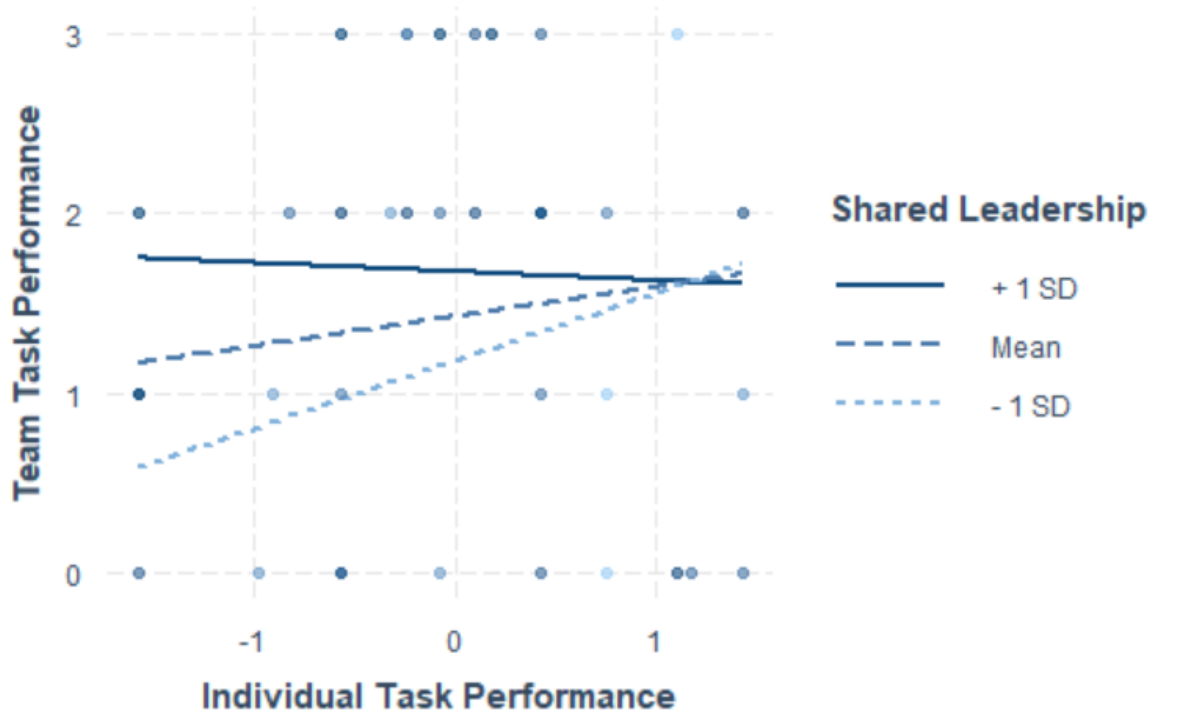
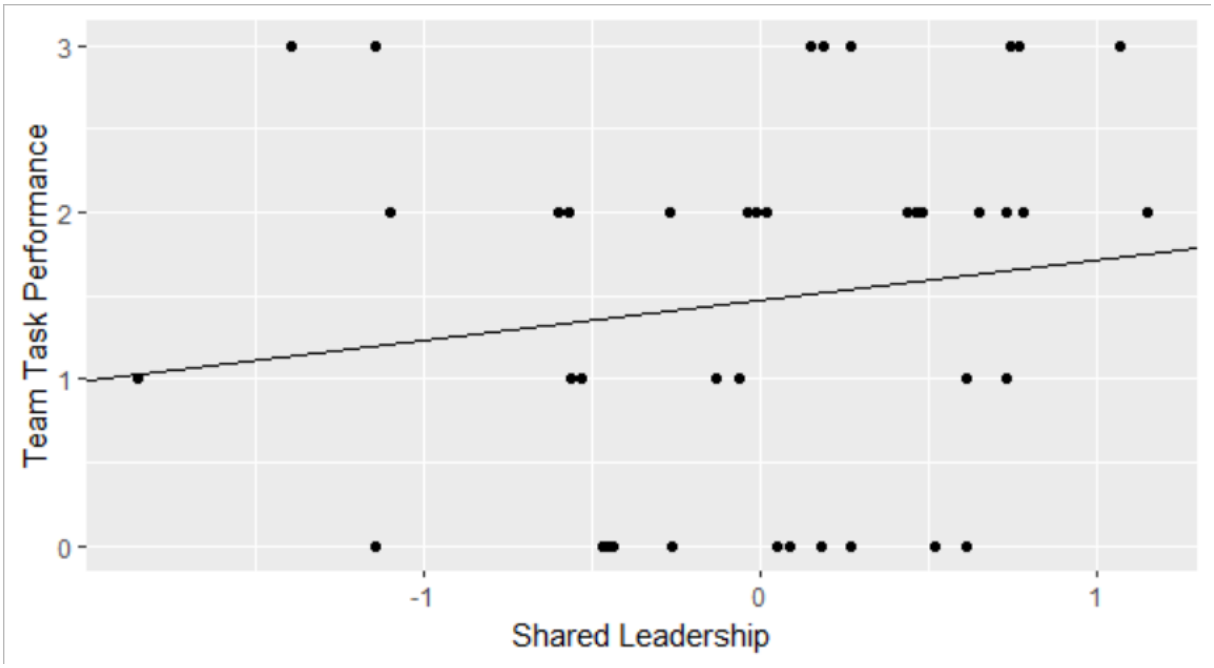


Figure 5



Discussion

The purpose of this experimental study was to expand upon previous research on the impact of leader and team member personality on the emergence of shared leadership in teams and their impact on team performance. In this study, we aimed to directly manipulate leader and follower behavior. Our first hypothesis posited that a participative leadership style adopted on the part of a team's designated leader would positively and significantly predict the emergence of shared leadership. We generated this hypothesis in response to the findings of Chiu et al., 2016, which demonstrated that leader humility significantly predicted the emergence of shared leadership in teams. Because we could not include humility as a personality variable in this study, we instead attempted to manipulate leadership style in order to experimentally synthesize the behavioral manifestations of a humble leader, hence the inclusion of participative leadership as one of the two levels of our primary independent variable. Despite this, we did not find leadership style to significantly associate with the emergence of shared leadership, thus rendering us unable to support Hypothesis 1. We did, however, observe a weak, statistically nonsignificant effect of leadership style on shared leadership in the hypothesized direction, as shown in figure 2, suggesting that after addressing limitations, we may be able to observe a significant effect. While it is possible that our unorthodox attempt to synthesize the behavioral expression of a personality trait in an experimental setting was the culprit behind our null findings, it is most likely the case that our approach to doing so was more culpable.

Amidst limitations of sample size and the online nature of the study impeding the degree to which the nuances of human interaction can be captured, we do not believe that we were able to truly manipulate participant behavior such that the expression of an unmeasured personality

trait could be emulated. Leaders performed poorly on the manipulation check. This may have been a consequence of our compulsion to employ convenience sampling over purposive sampling. Given the quantitative nature of our data, and the fact that we would expect our findings to generalize to the greater population, convenience sampling is the more logical choice over purposive sampling (Etikan et al., 2016). On the other hand, purposive sampling is most often employed in the pursuit of qualitative data. That being said, we believe that to truly manipulate participant behavior in an experimental study to reflect the expression of an unmeasured personality trait, purposive sampling would have to be employed in order to specifically recruit participants who are expressly interested in contributing to the social psychological study of understanding teamwork and group dynamics. Such individuals would be more likely to participate in order to help researchers understand psychology, rather than to earn mandatory course credit. Given a sample of more engaged and passionate participants, we believe that we would have been able to observe the hypothesized effect with statistical significance with the current sample size limitations, seeing as how a small effect was observed as the study currently stands.

Similar to our failure to properly manipulate leader behavior, we also do not believe we were able to manipulate follower expectations, as followers performed only slightly better than leaders on the manipulation check, but still performed poorly nonetheless. Just as we could not detect a relationship between leadership style and shared leadership, we likewise could not detect an interaction effect suggesting that followership style would moderate the main effect relationship. Therefore, we were also unable to support Hypothesis 2. Participants were effectively told how to conduct themselves as followers, as well as what type of behavior to

expect from the leader, thereby setting the scene for either alignment or misalignment with regard to leader-follower interactions. As was the case with leadership style, we believe that to properly manipulate followership style in an experimental context, purposive sampling would have been necessary to recruit participants who are passionate about and interested in contributing to psychological research on teamwork and group dynamics. Although it is possible for moderation to change the significance of a null main effect relationship, that being the relationship between leadership style and shared leadership within the context of our study, we believe that our inability to properly manipulate behavioral variables was the primary culprit undermining our inability to detect the presence of the proposed relationships. That being said, figure 2 suggests that no interaction occurred whatsoever, so it may also be the case that followership style does not represent a meaningful variable of interest in the context of a study like this.

Our third hypothesis was that individual task performance would predict team task performance. Hypothesis 3 was not supported, and the data analyzed to test this hypothesis yielded an interesting pattern. One would assume that, given the finding that smarter teams perform better (Devine & Philips, 2001), with "smartness" mapping onto individual performance, that average individual task performance would roughly correspond to group task performance. Despite this, it appears that there was a great deal of disagreement among team members and that individual task performance scores were seldom the same as their respective team task performance scores. Despite having extremely close average performance scores between individual and group variables ($M_{\text{individual}} = 1.57$, $M_{\text{team}} = 1.48$), there was a great deal of differential responding between group members. However, the reported means are performance

scores out of a maximum possible score of 4. In addition to the range restriction caused by this type of scale coarseness (Aguinis et al., 2009), *no individual* received a perfect score of 4. Therefore, it is safe to conclude that most participants generally performed poorly on the task. This observation is actually somewhat consistent with the findings of Devine & Philips (2001), which, again, suggest that *smarter* groups perform better, rather than that less smart groups perform worse. In the context of our study, we did not have smart groups, given that everyone performed poorly and "smartness" is described as a function of individual performance. Therefore, we believe that addressing the issue of performance range restriction, due to the task being potentially too challenging, would allow us to observe statistically significant results with the current sample size limitations, given the observed presence of a weak, nonsignificant relationship in the direction hypothesized, illustrated in figure 2. It should be noted that Devine & Philips (2001) operationalized "smartness" as team member cognitive ability, whereas the present study used task performance as a theoretical proxy for "smartness", given the well-established association between intelligence and job performance (Ree & Earles, 1992; Schmidt & Hunter, 2000).

Our fourth hypothesis was that there would be a direct effect of shared leadership on team task performance. This hypothesis was not supported. To address this, we must mention that Hypothesis 4 was included to directly reflect the breadth of literature illustrating the relationship between shared leadership and team performance (D'Innocenzo et al., 2016). Although a number of design limitations likely precluded us from detecting a statistically significant effect, figure 4 does suggest that a weak effect was detected in the hypothesized direction, i.e. as shared leadership rose, so too did team task performance. We believe that, as

was likely also the case for Hypothesis 3, the problem solving task was probably too challenging, as not a single participant received a perfect score, thereby illustrating the undeniable presence of range restriction in our performance variables. Even despite this problem combined with a lackluster sample size, a small effect was nonetheless observed. We believe that a stronger, statistically significant effect would be observed were we to account for range restriction by making the problem solving task less difficult so as to increase the likelihood of having the full range of possible performance scores represented in our data.

Finally, we will address Hypothesis 5, which is undoubtedly the most perplexing finding of the study. Our fifth hypothesis posited that shared leadership would moderate the relationship between individual and team task performance such that said relationship would be stronger as shared leadership increases. Not only was this hypothesis not supported with statistically significant data, but a graphical visualization of the interaction in figure 3 suggests that, albeit to a weak and nonsignificant degree, an opposite effect was detected. At the mean for shared leadership, the individual-team task performance relationship appears to be weakly positive. However, at one standard deviation below the mean for shared leadership, this positive relationship is noticeably stronger, whereas it is essentially zero at one standard deviation above the mean for shared leadership. This may be a chance artifact of our null results and underpowered sample size, but this may also reflect an unforeseen counterintuitive effect. More likely to be the culprit, however, is the persistent issue of the task being too challenging and therefore producing range restriction in our performance data. To reiterate findings from the knowledge-sharing literature, groups perform at the level of the most competent team member if said member shares their answer with the group, and the group accepts said answer (Davis, 1973;

Littlepage, 1991; Steiner, 1972). In the case of the present study, few participants performed particularly “competently”, and no participant received a perfect score, so it is unlikely that this phenomenon could have been properly observed.

Limitations and Future Directions

A number of limitations have already been mentioned. One such limitation was our sample size. Although a sample size of 40 teams is not considered unacceptably small for group research, we still believe that our sample size underpowered our study and hindered our ability to detect statistically significant results in our data. However, we believe that a more crucial limitation was our attempt to manipulate participant behavior in a convenience sample of undergraduate students. Future research seeking to employ a similar manipulation should concentrate their efforts on two primary strategies. The first is to employ a purposive sampling method and advertise their study as an important research endeavor investigating the nuances of group dynamics and leadership so as to ensure that participants are interested in the subject matter of the study and will therefore be more likely to take the behavioral manipulation seriously. The second strategy we recommend is to reflect the purported cutting edge and groundbreaking nature of the research in the actual manipulation so as to frame the instructions as something of a leadership development crash course, rather than a short set of simple instructions about how participants should behave. This, combined with a sample of participants already interested in the science of leadership and teamwork is how we believe future researchers can maximize the likelihood of properly implementing the experimental manipulation.

An obvious glaring limitation was the fact that the study was conducted entirely online via video chat. Aside from our intuitive understanding that virtual interactions feel less natural than face-to-face interactions and therefore may influence the nature of and our perceptions of our interactions, the literature on virtual leadership discusses the potential pitfalls of such a work context (Schmidt, 2014), as leadership context plays a crucial role in determining "who leads, why they lead, and how they lead" (Lord & Dinh, 2014). It is not difficult to imagine how this may have influenced the integrity of our procedure, given that data for all of our dependent variables was gathered from participants' responses to surveys about the group interaction task. This is especially crucial given that our primary manipulations concerned "who leads and how they lead". We hope that the COVID-19 pandemic will subside soon and to such an extent that future researchers may replicate this study with a traditional in-person laboratory experiment. We believe that doing so will increase likelihood of detecting statistically significant effects consistent with our hypotheses.

One final limitation that may have damaged the integrity of our data was the ever-present threat of response bias. This threat looms especially large in the present study when we consider that this specific study is an offshoot of a much larger research undertaking that has been used for other studies, and as such, participants must complete many more surveys than only those used to gather data for the present study's. Publications from the survey nonresponse literature highlight the dangers of requiring students to complete multiple surveys in one sitting and how this may elicit response fatigue (Porter et al., 2004). However, Porter et al. (2004) also mention that studies specifically examining the impact of multiple surveys on response rates are few and far between. Therefore, we recommend that future studies examine the effect of taking multiple

surveys at once on the response patterns of participants, particularly with undergraduate samples. In addition to the potential for response fatigue resulting from having to take multiple surveys in one sitting, it should also be noted that participants are required to take the vast majority of said surveys immediately following the 30-35 minute group task, which may result in cognitive fatigue regardless.

Conclusion

Shared leadership is a burgeoning content domain within the contemporary leadership research sphere. The present study, while failing to support its hypotheses with significant results, highlights a number of important implications. Most of these implications, however, are for research methodologies, rather than leadership development initiatives. Given that small, nonsignificant effects were detected in the directions hypothesized, we can conclude that future researchers should prioritize improving their study designs in order to better be able to detect the effects of the present study with a higher degree of precision and accuracy. Scholars should employ purposive sampling techniques to recruit passionate participants interested in leadership science, behavioral manipulations should be framed as brief leadership development crash courses, the number of surveys to be completed should be kept to a minimum, and participants should complete the task in an in-person context, rather than via video chat. We believe that these necessary adjustments will enable researchers to uncover innovative strategies for leadership development, facilitating the emergence of shared leadership, maximizing team performance, and improving organizational profitability.

References

Aguinis, H., Pierce, C. A., & Culpepper, S. A. (2009). Scale Coarseness as a Methodological Artifact: Correcting Correlation Coefficients Attenuated From Using Coarse Scales. *Organizational Research Methods*, *12*(4), 623–652. https://doi.org/10.1177/1094428108318065

Alvesson, M. (2019). Leadership: Convergence and Divergence in Leadership Relations. *Journal of Management Inquiry*, *28*(3), 319–334. https://doi.org/10.1177/1056492617717339

Bass, B. M., & Bass, R. (2009). *The Bass handbook of leadership: Theory, research, and managerial applications*. Simon and Schuster.

Bergman, J. Z., Rentsch, J. R., Small, E. E., Davenport, S. W., & Bergman, S. M. (2012). The Shared Leadership Process in Decision-Making Teams. The Journal of Social Psychology, 152(1), 17–42. https://doi.org/10.1080/00224545.2010.538763

Bunderson, J. S., & Reagans, R. E. (2011). Power, Status, and Learning in Organizations. *Organization Science*, *22*(5), 1182–1194. https://doi.org/10.1287/orsc.1100.0590

Carson, J. B., Tesluk, P. E., & Marrone, J. A. (2007). Shared Leadership in Teams: An Investigation of Antecedent Conditions and Performance. *The Academy of Management Journal*, *50*(5), 1217–1234. https://doi.org/10.2307/20159921

Chemers, M. M. (2003). Leadership effectiveness: Functional, constructivist and empirical perspectives. Leadership and power: Identity processes in groups and organizations, 5-17.

Chiu, C.-Y. (Chad), Owens, B. P., & Tesluk, P. E. (2016). Initiating and utilizing shared leadership in teams: The role of leader humility, team proactive personality, and team

performance capability. *Journal of Applied Psychology*, *101*(12), 1705. https://doi.org/10.1037/apl0000159

Cohen, S. G., & Bailey, D. E. (1997). What Makes Teams Work: Group Effectiveness Research from the Shop Floor to the Executive Suite. *Journal of Management*, *23*(3), 239–290. https://doi.org/10.1177/014920639702300303

Cumming, G. (2014). The New Statistics: Why and How. Psychological Science, 25(1), 7–29. https://doi.org/10.1177/0956797613504966

D'Innocenzo, L., Mathieu, J. E., & Kukenberger, M. R. (2016). A Meta-Analysis of Different Forms of Shared Leadership–Team Performance Relations. *Journal of Management*, *42*(7), 1964–1991. https://doi.org/10.1177/0149206314525205

Davis, J. H. (1973). Group decision and social interaction: A theory of social decision schemes. Psychological Review, 80(2), 97–125. https://doi.org/10.1037/h0033951

Devine, D. J., & Philips, J. L. (2001). Do Smarter Teams Do Better: A Meta-Analysis of Cognitive Ability and Team Performance. *Small Group Research*, *32*(5), 507–532. https://doi.org/10.1177/104649640103200501

Dolatabadi, H., & Safa, M. (2010). The Effect of Directive and Participative Leadership Style on Employees' Commitment to Service Quality.

Drescher, M. A., Korsgaard, M. A., Welpe, I. M., Picot, A., & Wigand, R. T. (2014). The dynamics of shared leadership: Building trust and enhancing performance. *Journal of Applied Psychology*, *99*(5), 771–783. https://doi.org/10.1037/a0036474

Ensley, M. D., Hmieleski, K. M., & Pearce, C. L. (2006). The importance of vertical and shared leadership within new venture top management teams: Implications for the performance of

startups. The Leadership Quarterly, 17(3), 217–231. https://doi.org/10.1016/j.leaqua.2006.02.002

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of Convenience Sampling and Purposive Sampling. American Journal of Theoretical and Applied Statistics, 5(1), 1. https://doi.org/10.11648/j.ajtas.20160501.11

Fausing, M. S., Jeppe Jeppesen, H., Jønsson, T. S., Lewandowski, J., & Bligh, M. C. (2013). Moderators of shared leadership: Work function and team autonomy. Team Performance Management: An International Journal, 19(5/6), 244–262. https://doi.org/10.1108/TPM-11-2012-0038

Fausing, M. S., Joensson, T. S., Lewandowski, J., & Bligh, M. (2015). Antecedents of shared leadership: Empowering leadership and interdependence. Leadership & Organization Development Journal, 36(3), 271–291. https://doi.org/10.1108/LODJ-06-2013-0075

Fletcher, J. K., & Kaufer, K. (2003). Shared leadership. Shared leadership: Reframing the hows and whys of leadership, 21-47.

Gupta, V. K., Huang, R., & Niranjan, S. (2010). A Longitudinal Examination of the Relationship Between Team Leadership and Performance. *Journal of Leadership & Organizational Studies*, *17*(4), 335–350. https://doi.org/10.1177/1548051809359184

Han, S. J., Lee, Y., Beyerlein, M., & Kolb, J. (2018). Shared leadership in teams: The role of coordination, goal commitment, and knowledge sharing on perceived team performance. Team Performance Management: An International Journal, 24(3/4), 150–168. https://doi.org/10.1108/TPM-11-2016-0050

Hartline, M. D., Maxham, J. G., & McKee, D. O. (2000). Corridors of Influence in the Dissemination of Customer-Oriented Strategy to Customer Contact Service Employees. Journal of Marketing, 64(2), 35–50. https://doi.org/10.1509/jmkg.64.2.35.18001

Hersey, P., & Blanchard, K. H. (1969). Life cycle theory of leadership. *Training & Development Journal*, *23*(5), 26–34.

Hiller, N. J., Day, D. V., & Vance, R. J. (2006). Collective enactment of leadership roles and team effectiveness: A field study. The Leadership Quarterly, 17(4), 387–397. https://doi.org/10.1016/j.leaqua.2006.04.004

Hoch, J. E. (2013). Shared Leadership and Innovation: The Role of Vertical Leadership and Employee Integrity. Journal of Business and Psychology, 28(2), 159–174. https://doi.org/10.1007/s10869-012-9273-6

Huang, X., Iun, J., Liu, A., & Gong, Y. (2010). Does participative leadership enhance work performance by inducing empowerment or trust? The differential effects on managerial and non-managerial subordinates. Journal of Organizational Behavior, 31(1), 122–143. https://doi.org/10.1002/job.636

Kahai, S. S., Sosik, J. J., & Avolio, B. J. (2004). Effects of Participative and Directive Leadership in Electronic Groups. Group & Organization Management, 29(1), 67–105. https://doi.org/10.1177/1059601103252100

Koopman, P. L., & Wierdsma, A. F. (1998). Participative management. *Personnel psychology: Handbook of work and organizational psychology*, *3*, 297-324.

Levenshtein, Vladimir. (1965). Binary codes capable of correcting deletions, insertions and reversals. Doklady Akademii Nauk sssr 163: 845–848. In Russian.

Littlepage, G. E. (1991). Effects of Group Size and Task Characteristics on Group Performance: A Test of Steiner's Model. Personality and Social Psychology Bulletin, 17(4), 449–456. https://doi.org/10.1177/0146167291174014

Lord, R. G., & Dinh, J. E. (2014). What Have We Learned That Is Critical in Understanding Leadership Perceptions and Leader-Performance Relations? *Industrial and Organizational Psychology*, *7*(2), 158–177. https://doi.org/10.1111/iops.12127

Mathieu, J. E., Kukenberger, M. R., D'Innocenzo, L., & Reilly, G. (2015). Modeling reciprocal team cohesion–performance relationships, as impacted by shared leadership and members' competence. *Journal of Applied Psychology, 100*(3), 713–734. https://doi.org/10.1037/a0038898

Mehra, A., Smith, B. R., Dixon, A. L., & Robertson, B. (2006). Distributed leadership in teams: The network of leadership perceptions and team performance. The Leadership Quarterly, 17(3), 232–245. https://doi.org/10.1016/j.leaqua.2006.02.003

Morris, J. A., Brotheridge, C. M., & Urbanski, J. C. (2005). Bringing humility to leadership: Antecedents and consequences of leader humility. *Human Relations, 58*(10), 1323–1350. https://doi.org/10.1177/0018726705059929

Pandey, C., & Kapitanoff, S. (2011). The influence of anxiety and quality of interaction on collaborative test performance. Active Learning in Higher Education, 12(3), 163–174. https://doi.org/10.1177/1469787411415077

Pearce, C. L., & Conger, J. A. (2002). *Shared Leadership: Reframing the Hows and Whys of Leadership*. SAGE Publications.

Porter, S. R., Whitcomb, M. E., & Weitzer, W. H. (2004). Multiple surveys of students and survey fatigue. *New Directions for Institutional Research*, *2004*(121), 63–73. https://doi.org/10.1002/ir.101

Ree, M. J., & Earles, J. A. (1992). Intelligence Is the Best Predictor of Job Performance. *Current Directions in Psychological Science*, *1*(3), 86–89.

Schmidt, F. L., & Hunter, J. E. (2000). Select on intelligence. *Handbook of principles of organizational behavior*, 3-14.

Schmidt, G. (2014). Virtual Leadership: An Important Leadership Context. *Industrial and Organizational Psychology*, *7*. https://doi.org/10.1111/iops.12129

Serban, A., & Roberts, A. J. B. (2016). Exploring antecedents and outcomes of shared leadership in a creative context: A mixed-methods approach. The Leadership Quarterly, 27(2), 181–199. https://doi.org/10.1016/j.leaqua.2016.01.009

Shalit, A., Popper, M., & Zakay, D. (2010). Followers' attachment styles and their preference for social or for personal charismatic leaders. *Leadership & Organization Development Journal*, *31*(5), 458–472. https://doi.org/10.1108/01437731011056461

Somech, A. (2005). Directive Versus Participative Leadership: Two Complementary Approaches to Managing School Effectiveness. Educational Administration Quarterly, 41(5), 777–800. https://doi.org/10.1177/0013161X05279448

Steiner, I. D. (1972). Group process and productivity. Academic press.

Uhl-Bien, M., Riggio, R. E., Lowe, K. B., & Carsten, M. K. (2014). Followership theory: A review and research agenda. *The Leadership Quarterly*, *25*(1), 83–104. https://doi.org/10.1016/j.leaqua.2013.11.007

Wang, D., Waldman, D. A., & Zhang, Z. (2014). A meta-analysis of shared leadership and team effectiveness. *Journal of applied psychology*, *99*(2), 181.

Wang, L., Jiang, W., Liu, Z., & Ma, X. (2017). Shared leadership and team effectiveness: The examination of LMX differentiation and servant leadership on the emergence and consequences of shared leadership. *Human Performance*, *30*(4), 155–168. https://doi.org/10.1080/08959285.2017.1345909

Wu, Q., Cormican, K., & Chen, G. (2020). A Meta-Analysis of Shared Leadership: Antecedents, Consequences, and Moderators. Journal of Leadership & Organizational Studies, 27(1), 49–64. https://doi.org/10.1177/1548051818820862

Zhou, W. (2016). When does shared leadership matter in entrepreneurial teams: The role of personality composition. International Entrepreneurship and Management Journal, 12(1), 153–169. https://doi.org/10.1007/s11365-014-0334-3

Appendices

Figure 1

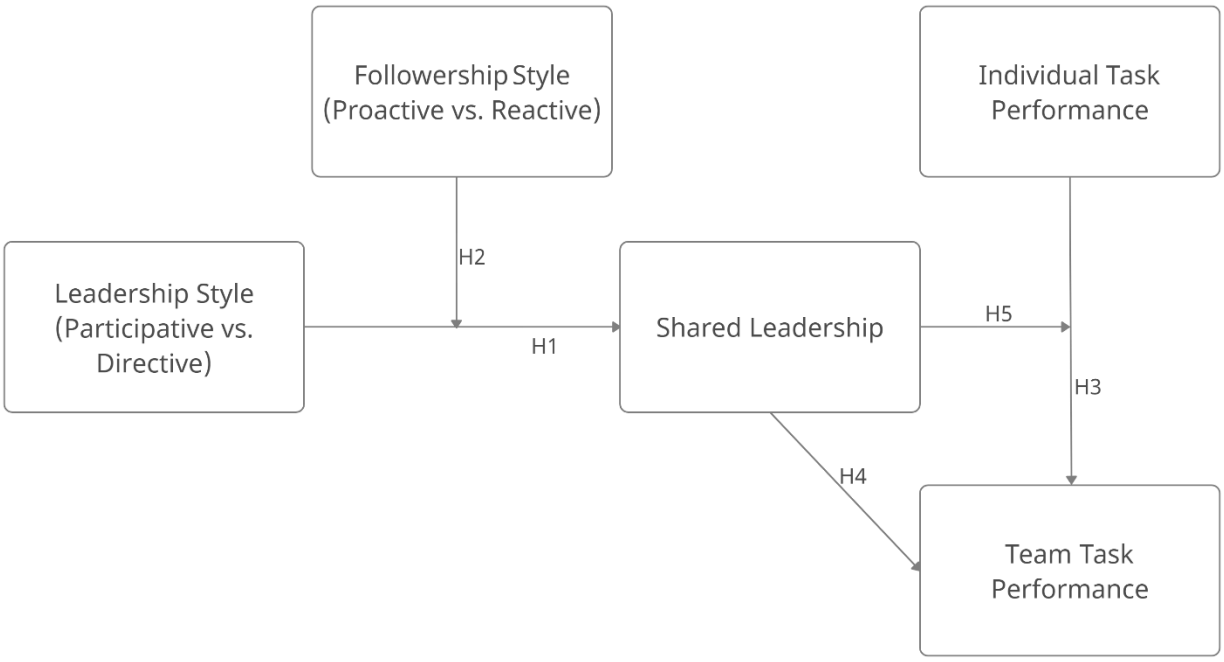


Figure 2

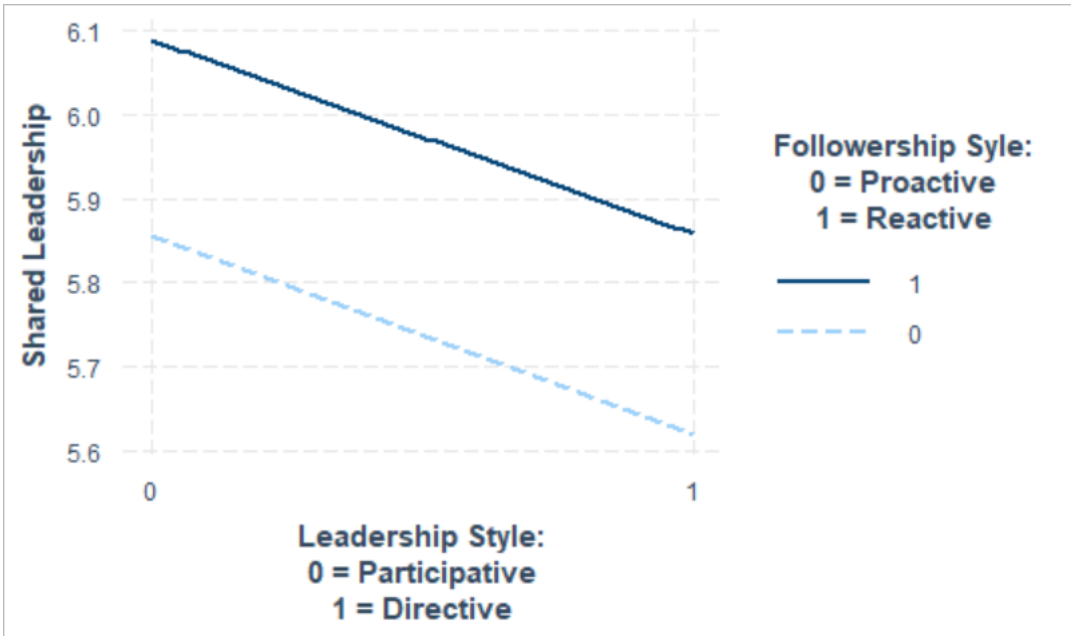


Figure 3

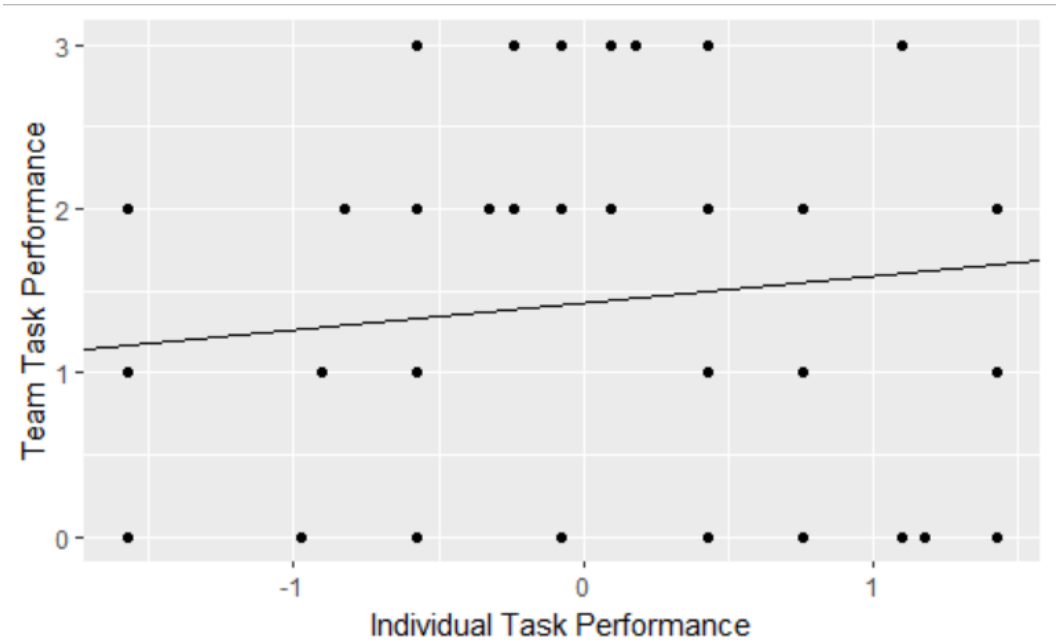


Figure 4

Figure 5

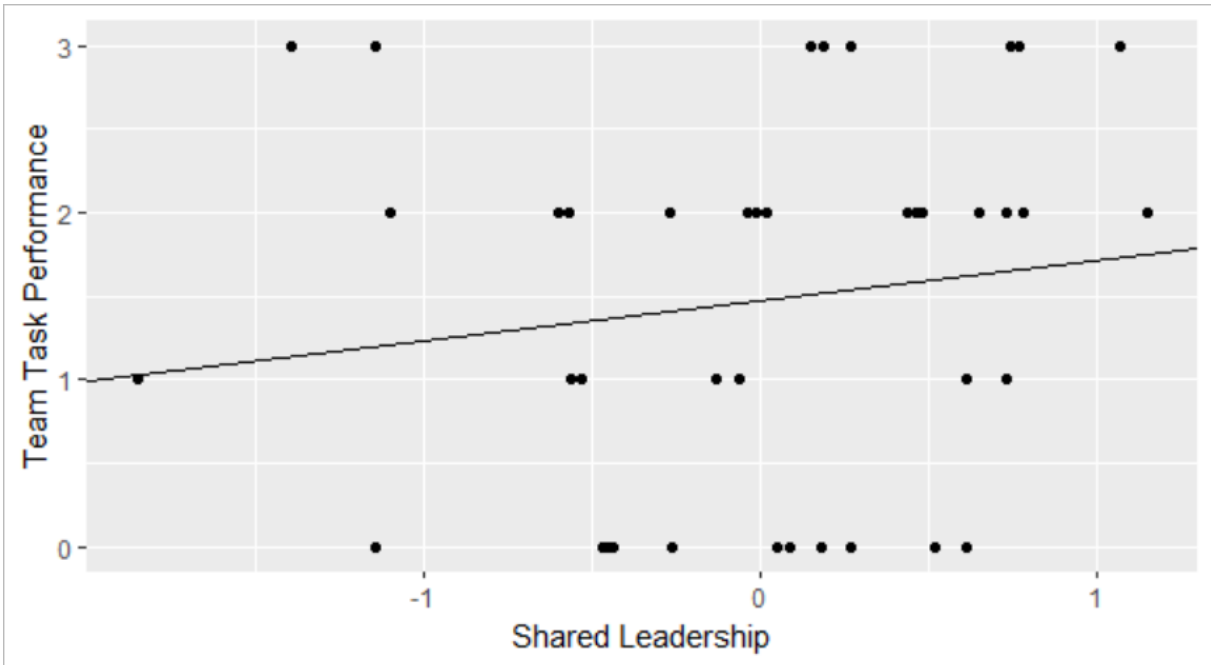


Table 1
Means, standard deviations, and correlations with confidence intervals

Variable	*M*	*SD*	1	2	3	4
1. Shared Leadership	5.85	0.69				
2. Leadership Style **(0 = Participative 1 = Directive)**	0.50	0.51	-.16 [-.45, .16]			
3. Followership Style **(0 = Proactive 1 = Reactive)**	0.47	0.51	.16 [-.16, .45]	.05 [-.27, .36]		
4. Individual Task Performance	1.57	0.84	-.27 [-.53, .05]	.11 [-.21, .41]	.02 [-.29, .33]	
5. Team Task Performance	1.48	1.11	.15 [-.17, .44]	.02 [-.29, .33]	.27 [-.04, .54]	.04 [-.27, .35]

Appendix A. Group Task Job Posting

Job Posting

[redacted]

The [redacted] is currently seeking a highly motivated Graphic & Digital Media Designer with strong graphic design and video editing skills to help us shape and tell the story of Times Square. Candidate should have a strong interest in and knowledge of design trends and topics and be able to maintain and build a brand identity that celebrates the distinctive human, architectural, cultural, and historical assets of the district.

The [redacted] works to promote and improve Times Square, cultivating the creativity, energy and edge that have made the area an icon of entertainment, culture and urban life for over a century. Our goal is to celebrate and serve this multi-use district that is home to some of the world's most famous theaters, companies, events and public spaces. More about its vision can be found here.

The [redacted] team manages the message for large scale civic events including New Year's Eve and Solstice in Times Square as well as major public art projects produced by [redacted]. The [redacted] team manages the official website for Times Square and all official social media handles that promote the district, its businesses, and all major happenings.

The Graphic & Digital Media Designer maintains and builds upon the Alliance's visual communications, overseeing the visual brand of the [redacted]. This position helps solidify a comprehensive brand identity that brings together all the organizations efforts to celebrate and market the distinctive assets that make up the neighborhood through printed materials, programmatic advertisements, logos, signage, and online graphics. This position will also work with the Communications team to create new digital video content to market and promote the neighborhood.

The Graphic & Digital Media Designer works with the entire [redacted] team as well as other departments within the [redacted] to achieve these goals and will also contribute to other [redacted] design related initiatives.

Responsibilities include but are not limited to:

• Developing and designing a variety of print and digital materials including advertisements, posters, logos, postcards, promotional items, invitations, annual reports, and other publications

• Creating new video content that helps promote the neighborhood as well as market events and public art projects

• Overseeing and enforcing guidelines for the organization's visual brand

• Closely coordinating with the events team to update and generate design deliverables, timelines & execute on new/existing event creative

• Coordinating the inventory of all graphical work and [redacted] photography/video for easy retrieval and backup

• Supporting web design efforts, including the design of website ads, banners, graphics and overseeing email marketing (e-newsletters) program

• Managing printing/mailing vendors, occasional oversight of consulting graphic design firm

Qualifications/Skills

The successful candidate will possess the following qualifications and skills.

• BA/BFA in Graphic Design, or another design related field that can include video content design

• 2-5 years of experience in web or print graphic design, either in an agency, in-house or freelance

• Must have mastery of Adobe Creative Suite (Photoshop, InDesign, Illustrator, After Effects)

• Video editing capabilities to help create short form and long form video content

• Knowledge of printing and experience working directly with a printer is required

• Ability to collaborate with other staff and take directions from various people; ability to work in a fast-paced environment

• Strong conceptual planning, creative design, and typography skills and the ability to follow art direction and collaborate on layouts

• Must have exceptional organizational and time management skills, including handing multiple projects simultaneously and ability to shift priorities and work will under pressure; meeting tight deadlines; and reacting quickly and smoothly to changes.

Candidate must provide their resume and example digital content created by the candidate and/or a portfolio of graphic assets.

Appendix B. Group Task Resume A

[redacted]

Graphic Designer

[redacted]

[redacted]

ABOUT ME

Creative and detail-oriented graphic designer with exceptional skill level and experience in various mediums. Highly adept with programs in AASHTO Pavement ME Design, Synchro 8, and MicroStation V8i.

[redacted]

SKILLS

7 / 10
MicroStation V8i

8 / 10
Synchro 8

9 / 10
AASHTO Pavement ME Desgin

EDUCATION

Bachelor Multimedia Design
Kask "School of Arts"
2010-2014

Master's in Internal Economics and Management
University of National and World Economy
2014-2017

EXPERIENCE

Developer, Designer, Lead & Solution Architect

Reilly Group/2018-Ongoing [redacted]

Reilly Group is a global IT services and solutions provider across various industries in various IT domains.

- Selected as one of the top participants for an 18-month professional development program with Texas Instruments
- Designed the layer system to enable reachability and usability in 3D
- Freelance audio designer since 2001, produced top quality audio for 400+ videogames

Lead Website Designer

Bernier/2014-2018 [redacted]

Bernier is an online platform dedicated to helping students with CAT Exam preparation.

- Designed 50+ mobile apps with running condition on Google Playstore
- Coordinated and executed 3 successful releases to achieve near zero touch deployment

UI/UX Designer

Schmeler/2013-2014 [redacted]

Schmeler is a mapping platform that allows you to plot your story by location with pictures and videos.

- Planned and designed plant layout drawings in 2D or 3D as requested by engineering department
- Managed storewide business-to-business sales practices and performance metrics to 200% annual revenue growth

Appendix C. Group Task Portfolio A

Appendix D. Group Task Resume B

[redacted]

GRAPHIC DESIGNER

[redacted]

PROFILE

A dynamic, creative mind with the capacity to create and execute interactive artwork in the digital space. Strives to contribute a fresh take on modern marketing with a broad set of ever-growing skills.

CORE QUALIFICATIONS

- ✓ Video Animation
- ✓ Digital and hand illustration
- ✓ Adobe Suite (Photoshop, Illustrator, InDesign, Flash)
- ✓ Digital Media
- ✓ Digital Campaign Development
- ✓ Project Management
- ✓ Multiple Platform Configuration
- ✓ Web Development

PROFESSIONAL EXPERIENCE

LEAD DESIGNER / XYZ DESIGNS, [redacted] 2014 – PRESENT

Spearhead the creative content for web and print departments of major tech company.

- Develop innovative packaging for web-based tech software products
- Manage client relations and expectations to build projects around vision, an accurate scope, and an organized project plan
- Delegate design tasks to junior designers including pagination, editing, and image manipulation
- Oversee the production of final designs and communicate all necessary changes

GRAPHIC DESIGNER / Z MAGAZINE, [redacted] 2012 – PRESENT

Contribute to a fast-paced creative team through development of content for monthly print publications and weekly web updates. Maintain specific webpages for publication's website.

- Designed on-brand elements to incorporate in print and digital ads for subscription
- Drew up new brand guidelines and communicate throughout design department
- Formatted and corrected images for use in print publication

CLIENTS

Tech: Apple, Samsung, Intel

Retail: Home Depot, Toms, Starbucks

EDUCATION

Bachelor of Art, Graphic Design / FIT, New York, New York / 2014

Appendix E. Group Task Portfolio B

Appendix F. Group Task Resume C

Appendix G. Group Task Portfolio C

Appendix H. Group Task Resume D


[redacted]

Personal info

Date of birth: [redacted]
Web:
Address:
Phone number:
Email address:

Work experience

Freelancer 04/2014 – present
Self Employeed

Services in the areas of:
- Video Production
- Digital Marketing
- Website Development
- Social Media Strategy
- Photography & Editing

Communications Director 08/2006 – 10/2017
New Beginnings Community Church, [redacted]

- Managed and lead a 4-person team in the production of marketing projects, promotional materials (video, photography, graphic design), website design, copywriting and audio/visual needs.
- Developed artwork and layout for print and digital signage, banners, posters, publications and flyers.
- Led in the video production process (Pre-production, storytelling, lighting, set-design, audio, filming, editing, color-correction, exporting).
- Serves as a creative guide for all key projects and events.
- Oversees the organization's social media brand strategies.
- Consults and trains staff on effective use of technology, SaaS and technical equipment.

Adobe CC Skills

Adobe CC Skills
Premiere Pro
Photoshop
InDesign
After Effects
Illustrator

Interpersonal Skills

Soft Skills
Self-Confidence/Positive
Problem Solving
Collaboration
Empathy
Communication

Certifications

Content Marketing Specialist 08/2017
Digital Marketer

Storytelling For Business 02/2016
Udemy

Hootsuite Certified Professional 08/2015
Hootsuite Media

Education

Christian Studies 08/2006 – 07/2008
California Baptist University, Riverside

Liberal Studies 09/1997 – 05/1999
Chaffey College, Rancho Cucamonga

Strengths Finder Themes

Achiever | Ideation | Learner | Developer | Maximizer

Online Design Portfolio

[redacted]

Appendix I. Group Task Portfolio D