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WHO'S IN CHARGE HERE? CO-CEOs, POWER GAPS, AND FIRM PERFORMANCE

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At the pinnacles of organizations, comparative tests of unity of command and shared command are nearly impossible because only one individual sits atop most organizations. In organizations led by co-CEOs, however, such a test is possible because co-CEOs can truly share power. But do they? Our research pits the unity-of-command principle against the shared-command principle and finds overall support for the former, even within the co-CEO context. Our sample of 71 co-CEO pairs at publicly traded U.S. firms shows that increasing power gaps between co-CEOs are positively associated with firm performance. This positive association wanes and turns negative, however, as power gaps become very large. We conclude that whatever benefits the co-CEO structure might offer likely lie outside the shared command paradigm. Copyright © 2014 John Wiley & Sons, Ltd.

"*A body with two heads is in the social as in the animal sphere a monster, and has difficulty in surviving.*" (Fayol, 1949: 25)

INTRODUCTION

Henry Fayol wrote the above statement to emphasize the importance of unity of command, which is the principle that an organization should be led by only one individual at a time. In the century since the original publication of Fayol's work, organizations have adhered to this principle with little variation. Recently, however, some firms have begun to challenge this basic tenet of classical organization theory by appointing *two* chief executive officers (CEOs) to lead simultaneously. When multiple individuals actually share the chief executive position at the same firm, they are known as "co-CEOs." While co-CEOs are not yet commonplace, a number of large, well-known firms have adopted this structure in recent years, including Smucker's, Bed Bath & Beyond, IMAX, and Whole Foods Market. Sometimes co-CEOs are the former CEOs of two merged firms. Sometimes they are members of the same family (Arena, Ferris, and Unlu, 2011). Other co-CEOs may have co-founded the firm they lead (O'Toole, Galbraith, and Lawler, 2002). Some companies have appointed co-CEOs in anticipation of eventually splitting the firm in two (Silver and Lublin, 2008). Given the myriad circumstances surrounding the co-CEO phenomenon, and its regular occurrence among firms of varying sizes, it is surprising that almost no theory has been developed on the subject.

In the one published study that empirically examined co-CEOs, Arena *et al.* (2011) found that investors reacted positively to the announcement of

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the creation of co-CEO leadership structures, and that firms with co-CEOs exhibited higher market valuations than did a matched sample of firms with only one CEO. They interpreted their results as supporting shared leadership theory (Pearce and Conger, 2003), a perspective that directly contradicts Fayol's admonition against organizations having multiple leaders. While Arena *et al.*'s (2011) work provides an initial look at the co-CEO phenomenon, it does not take into account the crucial fact that, in practice, co-CEO arrangements can vary widely. That is, despite sharing the same title, co-CEOs can still be at opposite ends of a wide power gap (Finkelstein, 1992). As O'Toole *et al.* (2002: 75) put it, "one member of every team of two is usually more equal than the other."

In our study, we attempt to identify the extent to which power is truly shared between co-CEOs and explain the effects of power differences between co-CEOs on firm performance. Because co-CEOs concurrently occupy the "top" leadership position in their firms, the co-CEO structure effectively controls for the *hierarchical* aspect of the power gap that normally exists between a CEO and his or her subordinates (Finkelstein, 1992). A minimal remaining power gap between co-CEOs suggests they truly share their command as equals, whereas a wide power gap suggests that command is more unified than the co-CEO structure would appear to suggest.

We develop competing hypotheses regarding the effects of co-CEO power gaps on firm performance, based on the competing principles of unified command and shared command. The unity-of-command principle suggests that a broader power gap is most beneficial, while the shared-command principle suggests a narrower power gap is most advantageous. Further, we test for any curvilinear effect of power gaps on performance, following arguments that either excessive power sharing or concentration would be counterproductive. Using a sample of 71 publicly traded firms led by co-CEOs at various points between 2000 and 2010, we show that power gaps between co-CEOs are positively associated with firm performance, but that this relationship wanes as the power gaps become extremely large. We interpret this finding as indicating that once unity of command is clearly established through a sufficiently wide power gap, additional power distance between co-CEOs has the potential to sow discord and reduce necessary communication within the firm's management.

This research makes several important contributions to theory. First, we pit two diametrically opposed theories of firm leadership against one another in a novel way, and find significant support for one over the other. Given that these two theories are rarely subjected to joint empirical scrutiny, testing them together advances theoretical development in this important area and provides a more nuanced, integrated understanding of benefits from shared and unified leadership. In addition, by examining power gaps between co-CEOs we are able to explore Finkelstein's (1992) concept of executive power in a way never before possible. Finkelstein's ground-breaking work suggested that executives' power differences can profoundly affect organizational outcomes, but that this impact is limited by the inescapable reality that "CEOs have high structural power over other members of dominant coalitions because of their formal organizational position" (1992: 509). Until now, this fact has limited scholars to examining power differences between CEOs and boards of directors (e.g. Westphal and Zajac, 1995) or between the CEO and lower-level executives (e.g. Boeker, 1992) without being able to separate the effects of position from the effects of other power sources. By studying co-CEOs, we are able to investigate the effects of power differences between leaders who share the same rank at the very top of their organization.

Finally, in a contribution to both theory and practice, our study is the first to theoretically explore an important internal mechanism of the co-CEO phenomenon. Companies have been adopting the co-CEO structure on-and-off for decades, with little guidance about how such structures best operate. By applying existing theories of leadership structure to the study of this phenomenon, we contribute knowledge to the literature and provide much-needed empirical evidence regarding the performance consequences of different implementation approaches for firms appointing co-CEOs. For boards considering pairing two executives as co-CEOs, the evidence presented here clearly suggests that unity of command must prevail in the form of some power gap if the firm is to perform well. Otherwise, the firm risks becoming, to paraphrase Fayol (1949), a two-headed monster.

BACKGROUND

One of the oldest, most venerated, and possibly most widely criticized concepts in organization

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theory is the unity-of-command principle (Barnard, 1968; Gulick and Urwick, 1937; Simon, 1997). Dalton and Dalton concisely and eloquently sum up the principle as the "majesty of a single voice" (Dalton and Dalton, 2009: 30). In defining the principle, Fayol warned that "For any action whatsoever, an employee should receive orders from one superior only. … Should it be violated, authority is undermined, discipline is in jeopardy, order disturbed and stability threatened" (1949: 24). Unity of command has long been considered important for organizational effectiveness. Gulick and Urwick, for example, argued that "rigid adherence to the principle of unity of command may have its absurdities; these are, however, unimportant in comparison with the certainty of confusion, inefficiency, and irresponsibility which arise from the violation of the principle" (1937: 93).

Across 30 years of scholarship in strategic leadership, some scholars have attempted to test the unity-of-command principle. These scholars have investigated one or both of two related-yet-distinct organizational phenomena. The first is separation of the CEO and board chair positions (e.g. Baliga, Moyer, and Rao, 1996; Krause and Semadeni, 2013), and the second is separation of the CEO and president or chief operating officer (COO) positions (e.g. Hambrick and Cannella, 2004; Worrell, Nemec, and Davidson, 1997). While these literatures have produced interesting and valuable results, their ability to truly test the strength of the unity-of-command principle is limited by the fact that both organizational phenomena, despite involving two individuals in leadership roles, still maintain a hierarchical distinction between those individuals; the board chair is generally senior to the CEO, and the CEO is senior to the COO/president. Therefore, precisely testing unity of command in these contexts is problematic (Locke, 2003).

We define co-CEOs as executives jointly designated as the top leader in an organization. As many have noted, this leadership structure constitutes a flagrant violation of the unity-of-command principle (O'Toole *et al.*, 2002). Because we do not have solo CEOs in our sample (For a comparison of solo CEO versus co-CEO firm performance, see Arena *et al.*, 2011), our study operates in a range from nearly perfectly shared to nearly perfectly unified leadership. This is precisely why the co-CEO leadership structure allows for a stronger test of the important power gap mechanism that may underlie the unity-of-command versus shared-command debate. Specifically, because the co-CEO structure itself controls for hierarchy-based differences among shared leaders, we have the opportunity to remove the hierarchy confound that exists in cross-structure comparisons like Arena *et al.* (2011) and instead explore more deeply the degree to which differences in *other* power sources either contribute to or suppress shared leadership efficacy at the pinnacle of the organization.

Firms choose the co-CEO structure under varying circumstances. One impetus for dividing the CEO position is a merger (Arena *et al.*, 2011). In this case the former CEOs of merging companies become co-CEOs of the combined firm, as Sandy Weill and John S. Roberts did at Citigroup. Another common driver of co-CEO arrangements is a family connection between company leaders (Alvarez, Svejenova, and Vives, 2007). This often occurs when siblings become leaders of a family business, as Barry Sloane and Jonathan Sloane did at Century Bancorp. Still another is the presence of co-founders atop a firm's hierarchy (O'Toole *et al.*, 2002). This is the case at California Pizza Kitchen, where Rick Rosenfeld and Larry Flax are co-founders and co-CEOs. Sometimes firms adopt the co-CEO structure as a response to exigent circumstances. Martha Stewart Living OmniMedia followed such an approach when the Securities and Exchange Commission (SEC) filed charges against the company's then-solo CEO.

Opinions about the effectiveness of co-CEO leadership are quite polarized; some claim that the co-CEO structure leads to disaster (McKeown, 2013), others say it is increasingly necessary (Athitakis, 2013), and still others offer more balanced evaluations (Banham, 2012). Such disagreement is not surprising. The different drivers of co-CEO adoption mentioned above complicate evaluations of co-CEO leadership. Given the multitude of factors that could contribute to the occurrence and success of the co-CEO leadership structure, and given its close relation to CEO-board chairperson and CEO-COO/president leadership structures—albeit with unique differences—it is imperative that organization theorists begin to identify a theoretical paradigm that can explain both the co-CEO phenomenon itself and the mechanisms that make the phenomenon more (or less) successful. Clearly, the unity-of-command principle provides little justification for the co-CEO structure. Therefore, we draw on shared leadership theory to aid in explaining firm performance

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in the context of a co-CEO leadership arrangement.

THEORY AND HYPOTHESES

Co-CEOs and the potential for shared command

Shared leadership theory is still in its infancy (Pearce and Conger, 2003) and, as such, suffers from an abundance of definitions (see Carson, Tesluk, and Marrone, 2007). Pearce and Conger (2003: 1) define shared leadership as a "dynamic, interactive influence process among individuals in groups for which the objective is to lead one another to the achievement of group or organizational goals or both." Ensley, Hmieleski, and Pearce (2006: 220) define it as a "team process where leadership is carried out by the team as a whole, rather than solely by a single designated individual." Almost all work on shared leadership to date has focused on shared leadership as a team-level *process* that is emergent in nature and "cannot be based on formal hierarchy" (Seers, Keller, and Wilkerson, 2003: 80).

Scholars of shared leadership have theorized, and in some cases empirically demonstrated, a positive link between shared leadership in teams and team outcomes. Carson *et al.* (2007) conceptualized shared leadership as an intangible resource on which teams could draw to improve performance. Team leaders use shared leadership, they argued, to foster greater commitment and information sharing within teams. At its most effective, shared leadership enables groups to capitalize on multiple leaders' complementary knowledge and skill sets, fostering creative decision-making and more rigorous critical assessment (Cox, Pearce, and Perry, 2003). Ultimately, shared leadership enables teams to achieve more than they could if led by a single individual. Indeed, a number of empirical studies have demonstrated a positive relationship between shared leadership activity and team or firm performance (e.g. Carson *et al.*, 2007; Ensley *et al.*, 2006; Hmieleski, Cole, and Baron, 2012; Pearce and Sims, 2002).

While focusing almost exclusively on team processes has produced valuable knowledge about team effectiveness, it also limits the ability of shared leadership as a construct to serve as a theoretical foil to the more macro-organizational construct of unity of command. Therefore, we develop a new construct, derived from shared leadership theory, to capture the shared leadership process that can occur between two formally designated organizational leaders (i.e. co-CEOs). We label this construct "shared command." In developing this construct, we rely on Carson *et al.*'s (2007: 1218) definition of shared leadership as "an emergent team property that results from the distribution of leadership influence across multiple team members." Technically, a pair of co-CEOs constitutes a team, and Pearce and Conger consider such pairs "a special case of shared leadership—the two-person case" (2003: 8). Still, the designation of co-CEOs is hardly emergent; it develops as part of a conscious, top-level choice, and it often needs to be implemented against considerable resistance (Arnone and Stumpf, 2010; Pellet, 1999). Nonetheless, within the designated co-CEO pair, influence can emerge from either one or both individuals. Shared leadership refers to the extent to which such influence is distributed versus centralized within the team (i.e. within the dyad). We define shared command, then, as a subset of shared leadership: specifically, the even distribution of power across multiple members (usually two) of a team jointly designated as an organization's top leader.[1]

Based on this definition, the co-CEO leadership structure is clearly a necessary, *but insufficient*, condition for shared command to occur. The fact that co-CEOs share the top title at their organization does not guarantee that power will be distributed evenly between them. As O'Toole *et al.* (2002: 75) observed, "Power at the top can be distributed in many ways," and even though co-CEOs are technically on equal footing in the organizational hierarchy, "one member of every team of two is usually more equal than the other," an allusion to the feigned equality of animals in George Orwell's anti-communist fable, *Animal Farm*.

Because of this potential variance in the distribution of power, independent from the hierarchical CEO position, co-CEOs actually constitute a unique empirical setting in which to test the relative merits of unified versus shared command at the top. In no other leadership structure can unified and shared command co-exist at the same hierarchical level where a continuous scale can be used to

[1] We refer to "power" instead of "influence" because co-CEO structures are often described as "power-sharing" rather than "influence-sharing" relationships (Alvarez *et al.*, 2007; Sally, 2002) and because power is more easily identified at the CEO level than is influence.

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examine the relative dominance of each. By our definition, co-CEOs who share power equally would be exhibiting truly shared command, and according to shared leadership theory such an arrangement would benefit the organization. Conversely, command becomes more unified as the difference in power between co-CEOs increases, despite the fact that the co-CEOs hold the same hierarchical position. Thus, according to the unity-of-command principle, a greater power gap between co-CEOs, while not necessarily reflecting total unity of command, represents a *more* unified command than would a smaller power gap, and therefore will benefit the organization. In the following pages, we develop two competing hypotheses regarding the effect of power gaps among co-CEOs on firm performance.

Co-CEO power gaps: chaos or clarity?

According to Finkelstein, "CEOs have high structural power over other members of dominant coalitions because of their formal organizational position. This authority allows CEOs to manage uncertainty by controlling (to a degree) the behavior of their subordinates" (1992: 508–509). Consistent with this observation, the study of CEO power has primarily examined the CEO's power relative to the board of directors (Westphal and Zajac, 1995) or relative to the rest of the top management team (Haleblian and Finkelstein, 1993), with full acknowledgement that "CEOs typically have the most structural power because of their preeminent formal organizational position" (Finkelstein, 1992: 509).

This hierarchical form of power is nullified in the context of co-CEOs, because its most elemental source, the CEO title, is equivalent among co-CEOs. The absence of a hierarchical difference notwithstanding, any *remaining* power gap from other sources signifies that influence both within the co-CEO dyad and throughout the organization is, in practice, allocated more to one of the co-CEOs than to the other. For co-CEOs to share command in the shared leadership tradition, power must be decentralized among the two co-CEOs (Pearce and Conger, 2003). As Mayo, Meindl, and Pastor (2003: 203) wrote, "The degree of shared leadership in a team can be thought of as the degree of team decentralization." In a co-CEO team of two, this means that shared command is highest when power gaps are minimal.

Although the CEO-TMT power dynamic is clearly affected by the CEO's elevated position in the organization, research on the power distribution between CEOs and TMTs has produced results that conform to the shared leadership hypothesis. Eisenhardt and Bourgeois (1988) suggested, for example, that in high-velocity environments highly centralized CEO power hurts firm performance because it restricts the flow of information from the TMT. Similarly, Haleblian and Finkelstein (1993: 848) found that the destructive effects of CEO dominance grow as the environment becomes more turbulent, noting the increased need for "broader participation and information sharing" that accrues to TMTs with a balanced power distribution. Furthermore, a concentration of power in the CEO role has been shown to reduce TMT cohesion and creativity (Denis, Lamothe, and Langley, 2001; Peterson *et al.*, 2003; Pitcher and Smith, 2001).

In fact, one of the main draws of the co-CEO structure—that it contributes multiple perspectives and strengths to the top job (O'Toole *et al.*, 2002)—evaporates in the presence of a large power gap. Priem, Lyon, and Dess (1999: 945) suggested that "as the power and assertiveness of the CEO increases, the other TMT members simply become less relevant." In their inductive study of TMT heterogeneity, Pitcher and Smith (2001: 9) similarly observed that power centralization "renders that heterogeneity and the diverse cognitive perspectives that it represents less and less influential in the strategic decision-making process." A power gap between co-CEOs negates the possibility of shared command (Sally, 2002). Shared leadership theory suggests that an absence of shared command between organizational leaders reduces creativity, information sharing, and cohesion in top-level decision-making (Pearce and Conger, 2003; Pearce and Sims, 2002). This, in turn, negatively impacts firm performance (Ensley *et al.*, 2006; Hmieleski *et al.*, 2012). Therefore, we offer the following hypothesis in accordance with shared leadership theory:

Hypothesis 1: The power gap between co-CEOs is negatively related to firm performance.

The unity-of-command principle, on the other hand, stands in direct opposition to the shared command theory discussed above. From a unity-of-command perspective, a power gap should actually

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benefit a firm led by co-CEOs, because it alleviates the baseline confusion caused by divided leadership. In such cases, even though two leaders appear to be sharing command because they share the CEO title, one leader dominates as a result of greater power (Haleblian and Finkelstein, 1993). Many scholars have noted the contribution of power gaps to unity of command. Mintzberg (1989) argued that a clear and unambiguous power structure is required if an organization is to avoid becoming dominated by politics. In organizations in which no clear leadership structure exists, "there is no preferred method of coordination, no single dominant part of the organization . . . .Everything depends on the fluidity of informal power, marshaled to win individual issues" (Mintzberg, 1989: 241). In support of this idea, research in CEO succession has found that as CEO power wanes, political activity ratchets up among the TMT as each TMT member struggles to solidify his or her position in the organization (Ocasio, 1994; Shen and Cannella, 2002).

Between co-CEOs, power gap effects could "take the form of 'pulling rank' during disputes on strategic direction" (Finkelstein, 1992: 509). While such a practice violates the prescriptions of shared leadership theory, it forms the very foundation of the unity-of-command principle; specifically, that one leader must hold the greatest power if an organization is to function effectively. While we do not assume that a power gap reflects perfectly unified command, we do argue that it reflects more unified command than would a minimal or non-existent power gap. Therefore, we offer the following hypothesis:

Hypothesis 2: The power gap between co-CEOs is positively related to firm performance.

The waning impact of co-CEO power gaps

Given the divergent predictions of the shared command and unity-of-command perspectives, we expect power gaps between co-CEOs to exhibit curvilinear effects on firm performance. Specifically, the effect of power gaps—whether positive or negative—will be strongest at lower power gap levels, and will wane as the power gap increases. This general proposition might be labeled a "diminishing marginal cost/benefit" view of co-CEO power gaps. Though the resulting hypothesis is the same, the theoretical logic supporting it differs slightly depending on the perspective being applied.

If we assume that the shared command view holds, and that Hypothesis 1 is supported, then we predict that the negative effect of power gaps on firm performance becomes less negative as power gaps increase. As stated above, the shared command perspective suggests that the absence of a power gap between co-CEOs would generate the most positive firm performance because power gaps sow disunity and reduce the collaboration and cohesion the co-CEO structure is intended to foster. Thus, as a co-CEO dyad moves away from perfectly shared command, the tension between the nominal equality and the practical inequality within the dyad grows considerably. A small-to-moderate gap in power between co-CEOs is near enough to the reference point of totally shared power that it is likely to foster considerable discord between the leaders. It is proximity to the shared command reference point that makes a power gap so salient, as research in prospect theory has demonstrated (e.g. Kahneman, 1992). As the power gap continues to grow to more extreme levels, it veers farther and farther from this reference point and its negative effect on firm performance weakens accordingly. As discussed above, a large power gap between co-CEOs effectively invalidates the pretense toward shared command, suggesting that any additional deviation from the ideal of no power gap will only impose minimal additional cost on the organization.

In contrast, if we assume that the unified command view holds, and that Hypothesis 2 is supported, then we predict that the positive effect of power gaps on firm performance becomes less positive as power gaps increase. Once again, reference points play a crucial role. If the co-CEO structure's value-destroying attribute is the confusion it creates about "who's in charge," then small-to-moderate power gaps should exhibit the most positive effect on firm performance, as these constitute the difference between a more unified command structure and a nearly perfectly shared command structure. In fact, it is likely that the positive relationship between power gaps and firm performance includes an inflection point at which unity-of-command is more-or-less achieved. Beyond this point, returns to greater power gaps are likely to be minimal, as the potential for power gaps to reduce confusion and political maneuvering is low once unity-of-command is unambiguously established. Essentially, the command-unifying

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effect of increasing power gaps is considerably stronger when the power gap increases from none to moderate than when it increases from moderate to high. Thus, regardless of whether the effect of co-CEO power gaps on firm performance is positive or negative, we expect that the effect will wane as power gaps increase.

Hypothesis 3: The power gap between co-CEOs exhibits a curvilinear relationship with firm performance, such that the relationship becomes muted as the power gap grows.

METHOD

Sample and data collection

Our sample consisted of publicly traded U.S. firms that were led by co-CEOs at some point between 2000 and 2011. To identify these firms, we first searched through the Execucomp database for all executives whose job titles included the term "co-CEO", "co-chief executive officer", or "co-president". These cases were individually examined to make sure they fit our theoretical definition of a co-CEO leadership structure. We excluded any cases in which executives listed as co-CEOs were the leaders of subsidiaries and not of whole organizations, because their decisions are subject to overrule from above based on broader corporate considerations. This search process produced 45 firms. Then, we searched through the AuditAnalytics database of executive and director change events, again looking for executives with the title of co-CEO. Individual examination of each of these cases produced another 26 firms. Finally, we searched the *Directory of Corporate Affiliations* and major business press outlets, identifying 12 additional firms that we added to our sample. We next excluded those firms with co-CEO leadership structures lasting less than one year, because these structures were unlikely to have been in place long enough to affect performance. After eliminating firms with missing data, we had a final sample of 71 co-CEO firms for our study.[2]

The data we used to test our hypotheses originated from several sources. Where available we collected executive-level data (e.g., salary) from the Execucomp database. Governance data (e.g., board independence) originated in the RiskMetrics Directors database. For firms not included in one of these databases, we collected and coded the data manually from information contained in corporate proxy reports. All accounting data were obtained from COMPUSTAT.

Independent and dependent variables

Co-CEO power gap and firm performance

While power gaps between co-CEOs have yet to be studied empirically, the construct of power at the CEO level boasts a long research lineage, complete with well-validated measures. Consistent with Cannella and Shen's (2001) composite measure of CEO power, we operationalized the co-CEO power gap construct using an index of previously validated measures (see also Zajac and Westphal, 1996). To construct this index, we first obtained four separate measures of power for each co-CEO. These consisted of co-CEO salary, with greater salary indicating greater power[3] (Daily and Johnson, 1997; Finkelstein, 1992); co-CEO tenure at the focal firm, with greater tenure indicating greater power (Cannella and Shen, 2001; Zajac and Westphal, 1996); co-CEO stock ownership, with greater ownership indicating greater power (Cannella and Shen, 2001; Finkelstein, 1992); and an indicator variable reflecting whether each co-CEO also held the title of board chair (or co-chair), with the chair position conferring additional power onto the co-CEO (Krause, Semadeni, and Cannella, 2014). This last variable took a value of 1 if the co-CEO served simultaneously as board chairperson, and a value of 0 if not. Consistent with Cannella and Shen (2001), we standardized salary, tenure, and ownership. The dichotomous board chair measure required no standardization.

For each co-CEO dyad, we then calculated the difference in standardized scores for each measure, so that for each dyad we were left with four index components, three of which reflected the number of standard deviations between co-CEOs in terms of salary, tenure, and ownership. The board chair component took a value of −1, 0, or 1, depending on which co-CEO(s) held the chair position.

[2] A list of the firms with co-CEOs is available from the authors upon request.

[3] Salary is a more appropriate power measure than total compensation, as the latter varies considerably with firm performance, introducing endogeneity with our dependent variable.

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Finally, we summed all four components—keeping the directionality of the power gaps intact—and subsequently took the absolute value of the sum. Thus, the resulting index reflects the magnitude of the total power gap between co-CEOs, but without any reference to the specific co-CEO possessing the advantage. Following Cannella and Shen (2001), we standardized the final measure.

We measured firm performance using operating return-on-equity (ROE), calculated as operating income divided by the book value of shareholder equity, consistent with recent research in strategic management (e.g. Zhu, 2013). Because ROE reflects actual profitability outcomes, and is thus a concurrent measure, we analyzed ROE in year t + 1.

Control variables

We included a number of control variables in our models in addition to our independent variables to account for other factors that could influence firm performance. We controlled for the firm's long-term *debt-to-assets ratio*, because prior research has shown that firms with co-CEOs tend to have higher debt levels (Arena *et al.*, 2011). We also included total *employees* in order to control for firm size and a dummy variable, *acquisition*, to reflect whether the firm engaged in any acquisitions in a given year. At the board level, we controlled for *board independence*, measured as the percentage of directors classified as independent in firm proxy statements (Dalton *et al.*, 1998). At the co-CEO level, we controlled for each pair of co-CEOs' *shared tenure*, the number of years they worked at their focal firm simultaneously, in order to control for possible interpersonal relationships between the co-CEOs. We also controlled for the *age difference* between co-CEOs in number of years. Finally, our analyses included year dummy variables.

ANALYSIS AND RESULTS

Descriptive statistics and pairwise correlations for our variables are shown in Table 1. We tested our hypotheses using linear regression with firm fixed effects and robust standard errors (Greene, 2008). Table 2 shows the results of our fixed-effects models, as well as a pooled OLS model and a generalized estimating equations (GEE) model included for validation (see Ballinger, 2004). In these latter models, we included one-digit SIC dummy variables to account for industry fixed effects. For the GEE model, we specified an identity link function, a Gaussian family, and an exchangeable error correlation structure. The purpose of including the pooled OLS and GEE models is to demonstrate that our results are robust across different modeling techniques.

Hypothesis 1 states that a power gap between co-CEOs will negatively impact firm performance; Hypothesis 2 states the opposite. As the results clearly show, the relationship between co-CEO power gap and firm performance is significantly positive ($\beta = 1.59$, $p < 0.05$), providing strong support for Hypothesis 2, and no support for Hypothesis 1. Hypothesis 3 states that the effect of power gaps on firm performance—whether positive or negative—will wane at high power gap levels. As Table 2 shows, Hypothesis 3 received empirical support with a negative and significant squared power gap coefficient ($\beta = -0.38$, $p < 0.05$). The shape of this curvilinear effect is shown in Figure 1. The graph shows that when no power gap exists between co-CEOs, the predicted ROE is roughly −62 percent. As the power gap increases, predicted ROE reaches a peak of 243 percent, but as the power gap becomes very large, predicted ROE falls to 209 percent. We interpret these results as strongly

Table 1. Descriptive statistics and pairwise correlations

Variable	Mean	Median	S.D.	1	2	3	4	5	6	7
1. ROE_{t+1}	0.42	0.19	1.33							
2. Power gap	0.01	0.94	1.01	0.01						
3. Debt-to-assets ratio	0.21	0.08	0.26	0.17	0.20					
4. Employees (thousands)	10.98	2.24	27.62	0.04	0.00	0.00				
5. Board independence	0.59	0.57	0.16	0.00	−0.06	−0.06	0.00			
6. Shared tenure	13.71	11.00	10.51	−0.11	−0.32	−0.24	−0.09	−0.19		
7. Age difference	6.10	4.00	7.01	0.00	0.33	0.14	−0.03	0.03	−0.25	
8. Acquisition	0.40	0.00	0.49	0.00	−0.11	0.12	0.07	−0.01	0.12	−0.04

$N = 245$; all correlations with absolute values greater than 0.2 are significant at the $p < 0.001$ level.

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Table 2. Regression models of ROE_{t+1}

	FE baseline	FE main effect	FE curvilinear	Pooled OLS	GEE
Constant	0.40	1.58	2.43†	−0.26	−0.12
	(0.91)	(1.08)	(1.31)	(0.41)	(0.69)
Debt-to-assets ratio	1.40	1.35	1.27	1.84**	1.91***
	(1.25)	(1.17)	(1.13)	(0.68)	(0.41)
Employees	−0.03	−0.04	−0.06	0.00†	0.00
	(0.03)	(0.04)	(0.04)	(0.00)	(0.00)
Acquisition	0.22	0.28	0.26	0.25	0.19
	(0.30)	(0.29)	(0.29)	(0.19)	(0.17)
Board independence	1.00	1.61	1.91	−0.19	−0.20
	(1.36)	(1.47)	(1.53)	(0.71)	(0.62)
Shared tenure	0.00	−0.00	−0.01	−0.00	−0.00
	(0.02)	(0.03)	(0.04)	(0.01)	(0.01)
Age difference	−0.31	−0.50	−0.59	−0.01	−0.01
	(0.28)	(0.37)	(0.45)	(0.01)	(0.02)
Power gap		1.19*	1.59*	0.32†	0.37*
		(0.60)	(0.73)	(0.18)	(0.17)
Power gap squared			−0.38*	−0.20*	−0.21**
			(0.19)	(0.10)	(0.07)
Firm fixed effects	Incl.	Incl.	Incl.	Excl.	Excl.
Year fixed effects	Incl.	Incl.	Incl.	Incl.	Incl.
Industry fixed effects	Excl.	Excl.	Excl.	Incl.	Incl.
N	245	245	245	245	245
R^2 (χ^2)	0.61	0.64	0.65	0.23	(56.32)

Number of firms = 71; standard errors in parentheses; all significance tests are two-tailed.
†$p < 0.10$; *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

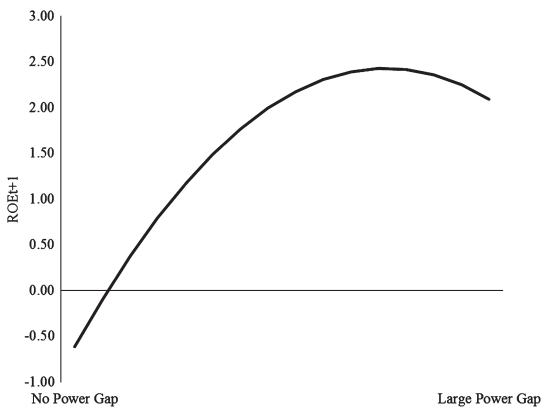

Figure 1. Predicted values of ROE_{t+1}

supporting the unity-of-command principle over shared command.

To ascertain the robustness of our results across performance measures, we tested our hypotheses using operating return-on-assets (ROA) and market-to-book ratio (MTB). We obtained similar results for MTB, but not for ROA. This suggests that the relationships we find are more salient when performance is conceptualized in terms of shareholder value. We also tested for multicollinearity by obtaining the variance inflation factors (VIFs) for all models. No VIFs in any of the models were above 10, and the mean VIFs were never above 4. As such, we are confident that multicollinearity is not an issue.

DISCUSSION

To our knowledge, the present study is the first in the management field to theoretically examine the phenomenon of co-CEOs and to delve into an important mechanism that determines the effectiveness of the co-CEO structure. These joint contributions are naturally complementary, as co-CEOs constitute one of the only circumstances in which shared command and unity of command exist on a continuous scale. Prior attempts to evaluate the unity-of-command principle's merits have produced valuable insights (e.g. Finkelstein and D'Aveni, 1994), yet have been limited by the fact that command is normally split between executives at different levels of the organizational hierarchy [e.g. CEO and board chair (Krause and Semadeni, 2013); CEO and COO

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(Zhang, 2006)] and therefore is rarely *shared* in accordance with shared leadership theory (Locke, 2003). Our research uses this characteristic of the co-CEO context to directly test conflicting predictions drawn from the unity-of-command and shared command principles.

We hope that scholars will continue to explore these and other theoretical paradigms in the context of the co-CEO phenomenon. Our study contributes to the extensive literature on executive power by examining the role of co-CEO power gaps in explaining firm performance. While not unique to co-CEOs, the centralization of power among executives is uniquely salient in the co-CEO context because of the structure's pretense of shared command (Sally, 2002). In contrast to prior work, which has demonstrated detrimental effects of power centralization in TMTs (Eisenhardt and Bourgeois, 1988; Pitcher and Smith, 2001), our study shows that power gaps between co-CEOs actually benefit the firm, at least until the point at which unity of command seems assured. The data seem to suggest that any increase in power gap beyond this point would be gratuitous and could possibly foster resentment and distrust between co-CEOs.

Given the dearth of research on co-CEOs, we have conducted our study in an exploratory fashion, producing evidence that *suggests* support for the unity-of-command principle over the shared command principle. Nevertheless, as the study is exploratory, it is subject to several limitations that prevent us from drawing firm conclusions about causal relationships. Perhaps the greatest of these limitations is the potential for selection bias. It is possible that firms select a co-CEO structure with a specific power gap for reasons unaccounted for in our analyses. We have theorized that co-CEOs vary in their degree of unity of command; however, by that logic, it is possible that solo CEOs have the greatest unity of command, and we are excluding those observations from our study sample. If we included solo CEOs as reflecting total unity of command, it is possible that we would find smaller effects, due to the influence of unobserved variables causing the selection of a co-CEO structure. It is also possible, however, that the addition of solo CEOs would produce *larger* effects because it would likely extend the range of the power gap variable. Conceptualizing solo CEOs as reflective of total unity of command is problematic, however. Scholars have previously demonstrated that these CEOs also vary in their degree of unity of command (e.g. Finkelstein and D'Aveni, 1994), complicating their utility as a comparison group. In addition, a reduction in a solo CEOs' unity of command is rarely equated with shared command as it is with co-CEOs (Arena *et al.*, 2011). Shared command is an artifact of the co-CEO structure for which no obvious corollary exists in the solo CEO structure. Therefore, we do not think there is evidence to suggest that our analyses systematically overestimate—or underestimate—the effect of co-CEO power gaps on firm performance. Nevertheless, until scholars can resolve questions related to selection of the co-CEO structure, any causal interpretations of our results will remain speculative.

To that end, we propose some empirical approaches that scholars could use to build on the results obtained in this initial exploratory investigation and identify what effect, if any, selection might have on the power gap-firm performance relationship. One approach that could prove fruitful is to determine whether the conditions under which a co-CEO structure is initiated determine the power gap between co-CEOs and/or the extent to which power gap impacts firm performance. For instance, prior research has identified a few common reasons that firms adopt a co-CEO structure: a merger, a family firm succession, or the joint leadership of co-founders (O'Toole *et al.*, 2002). In our own sample, these three reasons accounted for just under half of the co-CEO arrangements. The other half opted for a co-CEO structure as a conscious policy decision rather than out of expediency or tradition. It may be that co-CEOs from the same family have very small power gaps due to the interpersonal problems that would arise otherwise, whereas co-CEOs from two merged firms have very large power gaps that reflect the relative power of the acquiring firm and the acquired firm. In addition, some co-CEO arrangements in our sample lasted only a few years, whereas others lasted for over a decade, suggesting that some boards might intend a co-CEO arrangement to be permanent and others might intend it to be temporary. While our sample size prevents us from ascertaining how these selection conditions might impact the power gaps between co-CEOs or their performance effects, we encourage researchers to explore these issues as more data on co-CEOs become available.

Research opportunities also exist for examining the mechanisms associated with co-CEOs, and the relative effectiveness of the co-CEO

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structure versus the solo CEO structure, using archival data, surveys and experiments (Bettis *et al.*, 2014). For example, Arena *et al.* (2011) show positive abnormal returns to co-CEO announcements and greater estimated short-term market-to-book ratios for publically held co-CEO-led firms. More clarity may be gained through archival examination of co-CEO effects on longer-term operating performance in different contexts, especially if co-CEO structures continue to proliferate and larger sample sizes become possible.[4] Moreover, surveys of private firms may be useful in clarifying the common practices they use when implementing co-CEO structures. Finally, experiments may be especially useful for identifying the specific mechanisms underlying power gap effects in solo versus shared command situations; in this case, order-balanced, repeated-measures designs may be especially useful in building a more fine-grained understanding.

CONCLUSION

With this research, we have pitted the unity-of-command principle against the shared-command principle and found support for the former over the latter. Consistent with the unity-of-command principle, power gaps between co-CEOs are positively associated with firm performance. It follows that the benefits of the co-CEO structure, if they exist, likely lie outside the shared command paradigm. It seems, then, that boards of directors should be aware that the co-CEO leadership structure, absent clear differences in power between the co-CEOs, could indeed turn a firm into a two-headed monster.

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[4] Co-CEOs are also found in publically held companies in Europe (e.g., SAP), Africa (Standard Bank Group) and Asia (Samsung). It is likely that privately held firms in the U.S. have even greater numbers of co-CEO arrangements than do public firms. It is quite common to find co-CEOs in small, recent startups (e.g., NutshellMail, Online Tech) and in professional services firms (e.g., 90octane, CohnReznick LLP, Goulston & Storrs PC, Valuation Research Corporation), where co-CEOs are often labeled "co-Managing Directors."

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