

INDEPENDENT DIRECTOR DEATH AND CEO ACQUISITIVENESS: BUILD AN EMPIRE OR PURSUE A QUIET LIFE?

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Research summary: This study examines the relationship between an independent director's death and CEO acquisitiveness. Using a sample of large U.S. public firms, we find that CEOs who have experienced an independent director's death undertake fewer acquisitions in the post-director death period, in particular fewer large acquisitions. Our findings are consistent with the prediction of posttraumatic growth theory that mortality awareness can induce CEOs to reevaluate their life priorities and reduce the importance of extrinsic goals in their decision making. This study contributes to the strategic leadership literature by highlighting the influence of the death of CEOs' social peers on CEOs' strategic decisions.

Managerial summary: Does the death of CEOs' social peers influence CEOs' strategic decisions? We find that CEOs who have experienced an independent director's death engage in fewer acquisitions in the post-director death period, in particular fewer large acquisitions. One likely explanation for our findings is that the death of an independent director may heighten CEOs' mortality awareness, lead the CEOs to pursue a quieter life, and weaken their propensities for undertaking decisions (i.e., acquisitions) that increase their compensation and social status.

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INTRODUCTION

The idea of death, the fear of it, haunts the human animal like nothing else; it is a mainspring of human activity—designed largely to avoid the fatality of death, to overcome it by denying in some way that it is the final destiny of man.... Of all things that move man, one of the principal ones is his terror of death. (Becker, 1973: ix, 11)

Management and finance research has used investors' reactions to corporate leaders' death

announcements to capture the influence of these corporate leaders on firm governance and performance (Johnson *et al.*, 1985; Nguyen and Nielsen, 2010, 2014; Worrell *et al.*, 1986). For example, Worrell *et al.* (1986) analyze stock market reactions to the announcements of top executive deaths and find negative reactions to CEO deaths but positive reactions to board chairman deaths. Nguyen and Nielsen (2010) find that firms witness a significant drop in stock price upon independent director death announcements, suggesting that independent directors play an important role in corporate governance.

Yet, the question of how corporate leaders' deaths may influence their social peers' decisions remains unexplored. This is an important question because death is an unavoidable condition, and reflection about death exists among all people and cultures. Substantial research in social psychology has examined how the death of loved ones or social peers can

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give rise to a change in individuals' behavior and life priorities (Calhoun and Tedeschi, 1989, 2001; Kasser and Ryan, 1993; Kasser and Sheldon, 2000). This study examines how the death of CEOs' social peers (i.e., independent directors) may influence the CEOs' acquisition decisions. We focus on acquisitions because CEOs are less likely to delegate acquisition decisions, compared to other strategic decisions, to non-CEO top executives (Graham, Harvey, and Puri, 2015). Thus, acquisition decisions can better capture CEOs' attitudinal and behavioral consequences associated with independent director deaths.

Using a sample of U.S. public firms, we find that CEOs who have experienced independent director deaths conduct fewer acquisitions in the post-director death period, in particular fewer large acquisitions. We also find that this effect is stronger when a director death is sudden. These findings are consistent with the prediction of posttraumatic growth theory that mortality awareness can induce CEOs to reevaluate their life priorities and reduce the importance of extrinsic goals in their decision making. Our interviews with corporate executives and executive search consultants further support this explanation. We acknowledge that our study, which relies upon archival data, does not provide direct evidence on CEOs' psychological processes after they experience an independent director death and thus is exploratory in nature.

This study may contribute to strategy research in two ways. First, existing research has shown that corporate leaders frequently engage in social learning and selectively model and mimic each other' strategic decisions (for a review, see Westphal and Zajac, 2013). For instance, the acquisition behavior of a focal firm can be influenced by firms to which the focal firm is tied through board interlock ties (Beckman and Haunschild, 2002; Haunschild, 1993). Findings from this study indicate that the loss of CEOs' social peers can also influence the CEOs' strategic decisions, providing additional insights into the influence of CEOs' social peers on their strategic decisions. Second, acquisition research has attested to the important role of CEOs in firm acquisition decisions (Haleblian *et al.*, 2009). This study advances this stream of research by highlighting that the death of independent directors can shape CEOs' acquisition decisions, enriching the behavioral explanation of firm acquisition decisions.

THEORETICAL MOTIVATION

Two theories in social psychology regard how the death of others can influence one's behavior and decisions. Terror management theory posits that human beings have an instinct for self-preservation, and events making an individual's death salient can result in potentially overwhelming mortality terror (Pyszczynski, Greenberg, and Solomon, 1997, 1999). Empirical testing of terror management theory centers on the mortality salience hypothesis. This hypothesis states that heightened mortality awareness can engender defense of one's worldview so as to maintain and enhance self-esteem. Put differently, reminding people of their own mortality can lead them to bolster their own worldviews and/or to strive for self-worth because bolstering one's worldview and increasing self-worth can extend one's symbolic existence and help cope with mortality terror (Greenberg and Arndt, 2012).

Experimental evidence built on terror management theory generally suggests that reminders of mortality increase the importance of extrinsic goals in subjects' decision making (Kasser and Ryan, 1993; Kasser and Sheldon, 2000). Extrinsic goals, such as financial success and high social standing, are visible to social peers (Kasser and Ryan, 1996). Kasser and Sheldon (2000), for example, find that activating feelings of insecurity by making personal mortality more salient contributes to materialistic desires and behavior, especially in capitalist cultures such as in the U.S. where wealth and fame are accentuated, and therefore the pursuit of materialistic achievements should bolster one's worldview and self-esteem. Experimental research also indicates that mortality awareness can increase one's desire for fame and status, which provides symbolic continuance beyond death (Greenberg *et al.*, 2010).

In contrast to terror management theory, posttraumatic growth research contends that reminders of mortality can lead one to engage in death reflection in which individuals contemplate their meaning and purposes in life (Calhoun and Tedeschi, 2001; Cozzolino *et al.*, 2004; Tedeschi and Calhoun, 2004). Death reflection can propel individuals to demonstrate a greater appreciation for life and result in a change in life priorities (Calhoun and Tedeschi, 2001; Tedeschi and Calhoun, 2004). Posttraumatic growth theory contends that mortality awareness can reduce the importance of extrinsic goals in motivating individuals' decisions and behavior, leading one to pursue a quieter life. The theory also

suggests that reminders of mortality can direct individuals to shift from extrinsic goals toward focusing on satisfying essential human needs for autonomy, relatedness, and self-growth (Lykins *et al.*, 2007). Research shows a reduced emphasis on extrinsic goals in a variety of circumstances, including heart attack (Affleck *et al.*, 1987), transportation accident (Joseph, Williams, and Yule, 1993), bereavement (Calhoun and Tedeschi, 1989), and divorce (Wallerstein, 1986), among others. In essence, posttraumatic growth theory suggests that death reflection reduces an individual's emphasis on extrinsic goals such as wealth and fame (Cozzolino *et al.*, 2004).

Prior research suggests that self-relevance is a critical factor in determining the degree of mortality cues (Grant and Wade-Benzoni, 2009). Mortality awareness is more likely to be heightened when individuals experience the death of others holding similar positions. Since both CEOs and independent directors are considered corporate leaders (Finkelstein, Hambrick, and Cannella, 2009), independent directors' deaths should be particularly relevant to CEOs. Therefore, witnessing the death of an independent director can lead CEOs to think that "It could be me!" and heightens the CEOs' mortality awareness.

In this study, we examine the possible impact of an independent director's death on CEOs by focusing on CEO acquisition decisions. Substantial evidence suggests that extrinsic goals in the form of higher compensation and social status play an important role in CEOs' acquisition decisions (Halebian *et al.*, 2009). Research shows that acquiring CEOs generally witness an increase in their compensation through equity-based pay grants (Harford and Li, 2007), bonuses (Grinstein and Hribar, 2004), and other compensation (Bliss and Rosen, 2001) in the post-acquisition period, irrespective of acquisition performance. Acquisitions also help CEOs enhance their social status (Avery, Chevalier, and Schaefer, 1998; Palmer and Barber, 2001) because acquisitions provide an effective way for corporate growth and "corporate growth bolsters social prominence, public prestige, and political power of senior executives" (Jensen, 1986: 66). Assuming that an independent director's death can increase the importance of extrinsic goals in CEOs' decisions as suggested by terror management theory, CEOs who have experienced an independent director's death should engage in more intensive acquisition activities in the post-director death period than the pre-director death period. In

contrast, if we assume that an independent director's death can decrease the importance of extrinsic goals in CEOs' decisions, as suggested by posttraumatic growth theory, witnessing the death of an independent director can motivate a CEO to scale back from activities and investments, which can enhance their social status and wealth, yet also require a substantial amount of CEO effort and attention. Accordingly, we would expect to observe that CEOs who have experienced an independent director's death should engage in fewer acquisitions in the post- compared to the pre-director death period.

To be sure, an independent director's death may influence CEOs' acquisitiveness through other plausible mechanisms, in addition to the two explanations discussed above. One particularly likely mechanism is that the loss of an independent director may lead to a significant decrease in the collective human and social capital of the focal firm's board of directors. Given that acquisitions often involve large investments and may need inputs from all the board members, the death of an independent director may deter firms from making acquisitions. In the empirical part, we use a different identification strategy to rule out this possible alternative explanation and explore which theoretical mechanism is more plausible.

METHODOLOGY

Sample

The sample of this study begins with all the U.S. public firms covered by BoardEx between 2002 and 2012. BoardEx offers detailed information on board directors' demographic and background information and has been used in recent corporate governance research (Engelberg, Gao, and Parsons, 2013; Fracassi and Tate, 2012). We obtain CEO compensation and demographic data from Capital IQ People's Intelligence and BoardEx. We identify whether a company has experienced the death of a director in a given year based on director announcements and directors' date of death information provided by BoardEx. We exclude deaths of executive directors and independent board chairs from our sample because such deaths can cause direct organizational disruptions, which result in fewer acquisitions in the post-death period. After matching all the variables from various data sources, we have a total number of 296 cases of independent directors' deaths. To identify death causes of

these independent directors, we conduct keyword search terms on the deceased directors' names and death ("passed away", "died", "deceased", etc.) using Factiva, Lexis-Nexis, and Edgar Online. We classify deaths as sudden when their cause includes heart attack, stroke, and accidents, as well in those cases in which the specific cause is not reported, but the death is described as unexpected, unanticipated, or sudden (Nguyen and Nielsen, 2010). Following this classification strategy, 71 out of the 296 cases are identified as sudden deaths.

Propensity score matching and difference-in-difference analyses

Our main purpose in this study is to examine how an independent director's death may affect the focal CEOs' number and value of acquisitions in the post-director death period. To get around biases from potential time trends, we apply difference-in-differences regressions (Bertrand, Duflo, and Mullainathan, 2004; Chang, Chung, and Moon, 2013; Levine and Toffel, 2010). To do so, we need to form a group of companies that did not witness an independent director's death. We adopt a nearest-neighbor logit propensity score matching strategy developed by Rosenbaum and Rubin (1983). The control pool is the remainder of the BoardEx public firms with valid matching variables. We remove all the firms that have experienced a loss of executive directors or independent board chairs from the control pool. We construct a control sample of firms that are matched to the treated firms along a set of relevant, observable characteristics measured in the year prior to independent directors' deaths. We then estimate a logit regression in which the dependent variable equals 1 if a particular firm-year experiences an independent director's death and 0 otherwise, and our matching variables are the independent variables. The detailed description of the matching procedure is provided in Appendix S1.

In the logit regression used to estimate the propensity score, we include the following firm-level, CEO-level, and board-level variables that may affect firm acquisition intensity. At the firm level, we first control for *firm size* by taking the natural log of market value because firm size affects a firm's ability to undertake acquisitions (Halebian *et al.*, 2009). Second, we control for firm performance using *return on assets* (ROA) as firms with better financial performance have

more resources to undertake acquisitions. ROA is measured as operating income before depreciation over book value of total assets. Third, we control for firm *debt ratio* and *cash holding ratio* because they influence financial resources available for firms engaging in acquisitions (Duchin, 2010). Debt ratio is measured as the ratio of debt in current liabilities and long-term book debt over book value of total assets, and cash holding ratio is measured as the ratio of cash and short-term investments over book value of total assets. In addition, we control for *capital expenditure ratio* and *R&D intensity ratio* given that capital expenditure and R&D expenditure may crowd out resources available for acquisitions. Capital expenditure ratio (R&D intensity ratio) is measured as the ratio of capital expenditure (R&D expenses) over sales revenues. We also control for firm *total diversification* level because diversified firms may be more likely to engage in additional acquisitions (Singh and Montgomery, 1987). Total diversification (DT) is formed by adding the two components of the entropy measure, related diversification (DR), and unrelated diversification (DU) (Hoskisson *et al.*, 1993). We control for *institutional ownership* because institutional investors have been found to influence firm acquisition decisions (Wright *et al.*, 2002). This variable is measured as the ratio of total shares owned by institutional investors to total shares outstanding. We also control for *industry concentration* because industry competition can affect the likelihood of acquisitions (Giroud and Mueller, 2011), and this variable is measured as a Herfindahl-Hirschman Index (HHI) based on four-digit SIC codes.

We include the following CEO-level variables. We first control for *CEO duality* and *CEO tenure* because CEOs holding the chairman position and with a long tenure have higher levels of discretion in influencing firm strategic decisions (Finkelstein, 1992). CEO duality is coded as 1 if CEOs hold the board chairman position and 0 otherwise. CEO tenure is the number of years since a CEO took office. We also control for *CEO age* because it has been found to influence firm acquisition decisions (Yim, 2013). Second, *CEO contingent compensation* is controlled for because it can influence firm acquisition decisions (Sanders, 2001; Sanders and Hambrick, 2007). This variable is measured as the ratio of all the contingent compensation over total compensation. Third, we control for *total CEO compensation* as CEOs with low levels

of compensation may undertake acquisitions to increase their pay levels (Seo *et al.*, 2015). CEO compensation is measured as the natural log of total CEO compensation.

We also control for three board-related variables. *Board independence ratio* and *board size* are controlled for because a more independent board may be more willing to exert a monitoring role and the size of a board can also influence its decision-making processes (Dalton *et al.*, 2007). Board independence is measured as the ratio of the number of outside directors to board size (referring to the total number of directors). We also control for the *percent of female directors* as firms with a large percent of female directors are less likely to undertake acquisitions (Chen, Crossland, and Huang, 2016). This variable is measured as the ratio of the number of female board directors to total number of board directors. In addition to these firm-level, CEO-level, and board-level control variables, we also include Fama-French 49 *industry* dummy variables and *year* dummy variables.

Variables

We use the number of acquisitions (Sanders, 2001) and the value of acquisitions (Sanders and Hambrick, 2007) to measure acquisition intensity. We collect acquisition data from the Securities Data Corporation (SDC) merger and acquisition database and focus on completed majority-owned acquisitions with a minimum transaction value of \$1 million during the sample period. *Number of acquisitions* is measured as the total number of acquisition announcements in a year that have been completed later on, as reported in the SDC. *Value of acquisitions* is measured as the total annual value of completed majority-owned acquisitions reported in the SDC database. Firms with no acquisition activity in a year receive a value of zero for both the number and value of acquisitions. When the number of and value of acquisitions are zero for some firm-year observations, we take the natural log of number of and value of acquisitions plus one to address skewness of these two variables.

We test our research question through difference-in-differences regressions. In these analyses, we are interested in the significance level and magnitude of the *difference estimator* (Bertrand *et al.*, 2004). The difference estimator is the interaction of the treatment and period dummy variables. The treatment variable is a dummy

variable, which is coded as 1 for treatment firms and 0 for control firms. The period variable is also a dummy variable, which receives a value of 1 for four years post to (and including the year of) an independent director's death and a value of 0 for four years prior to an independent director's death. We only include observations for CEOs who were in office at the time of the independent directors' deaths to ensure that our treatment CEOs have experienced the director death events. We then match control firms' pre-director death and post-director death periods with their corresponding treatment firms. In essence, the difference estimator captures whether the dependent variable has changed at a significantly different rate for the treated group (CEOs who have witnessed an independent director's death) as compared to the control group (CEOs who have not experienced an independent director's death). In regression analyses, we include all the variables used in propensity score matching as control variables (excluding industry dummy variables). To minimize the influence of extreme observations on our results, all continuous variables are Winsorized at the one percent level in both tails.

Analysis

We use fixed-effects regressions to estimate the within-firm acquisition intensity difference between treatment and control firms, controlling for time-invariant firm heterogeneity. Specifically, following Low (2009), we estimate the following fixed-effects difference-in-differences regression:

$$Y_{it} = \alpha_t + \delta_i + \beta \times \text{treatment}_i \\ \times \text{post-death period}_t + \gamma \times X_{i,t-1} + \varepsilon_{it}, \quad (1)$$

where i indexes firm and t indexes time. Y_{it} is the dependent variable of interest (i.e., number or value of acquisitions). α_t and δ_i are year and firm fixed-effects, respectively. Although we have controlled for the influence of firm-, CEO-, and board-level variables in the matching process, we include $X_{i,t-1}$ as a vector of control variables to rule out potential confounding effects. ε_{it} is an error term. Because the specification includes year and firm fixed-effects, it is not necessary to include the noninteracted treatment and post-death period dummy variables. The estimate of the effect of independent director death on CEO acquisitiveness is β . Although the number of acquisitions is a count variable, we do not use fixed-effects Poisson

regressions because such regressions can only model firms that have time-variant dependent variables (Allison, 2005). In addition, the difference estimator is essentially an interaction term and Poisson models are nonlinear estimators. The coefficients provided by such models do not represent the true marginal effects (Hoetker, 2007; Zelner, 2009). Thus, we test all our hypotheses using fixed-effects OLS regressions.

RESULTS

Table 1 reports descriptive statistics and correlations for variables examined in this study. Table 2 shows results of the fixed-effects OLS regressions. The dependent variable of Models 1 and 2 is the natural log of number of acquisitions plus one. Model 1 does not include any control variables and the coefficient estimate of the interaction term between treatment and post-death period is negative and statistically significant ($\beta = -0.040$, $p\text{-value} = 0.010$). Model 2 adds all the control variables, and the coefficient estimate of the interaction term remains negative and statistically significant ($\beta = -0.039$, $p\text{-value} = 0.010$). In terms of economic magnitude, compared with firms that did not witness an independent director's death, firms that experienced an independent director's death will witness a 3.8 percent ($\exp(-0.039)-1$) decrease in the number of acquisitions from the pre-death period to the post-death period. The dependent variable of Models 3 and 4 is the natural log of value of acquisitions plus one. Model 3 does not include any control variable, and the coefficient estimate of the interaction term is negative and statistically significant ($\beta = -0.203$, $p\text{-value} = 0.012$). Model 4 adds all the control variables, the coefficient estimate of the interaction term remains negative and statistically significant ($\beta = -0.200$, $p\text{-value} = 0.011$). In terms of economic magnitude, compared with firms that did not witness an independent director's death, firms that experienced an independent director's death will witness an 18 percent ($\exp(-0.200)-1$) decrease in the value of acquisitions from the pre-death period to the post-death period.

Results in Models 1–4 of Table 2 suggest that CEOs who witnessed an independent director's death engage in fewer acquisitions in the post-director death period. These findings are consistent with posttraumatic growth theory's prediction—CEOs could reduce their

acquisitiveness due to the decreasing importance of extrinsic goals in their decisions. Yet, as noted earlier, an obvious alternative explanation is that CEOs engage in fewer acquisitions because of the decrease in collective human and social capital of the board caused by an independent director's death. To rule out this alternative explanation, we identify deceased independent directors' CEO board peers through a different approach. We identify CEOs (114 firms) who are independent board members of other firms that have experienced the death of a director in a board other than the CEO's home firm. Meanwhile, these CEOs' own firms do not experience the death of a director. After identifying these death events, we then use the same propensity score matching procedure and find control firms for these 114 firms and conduct difference-in-differences analyses.

Detailed results of such analyses are reported in Appendix S1. With the number of acquisitions as the dependent variable, the coefficient estimate of the treatment \times post-death is negative and statistically significant ($\beta = -0.089$, $p\text{-value} = 0.003$). With the value of acquisitions as the dependent variables, the coefficient estimate of the interaction term is also negative and statistically significant ($\beta = -0.554$, $p\text{-value} = 0.002$). These findings suggest that a reduction in a CEO's acquisitiveness is less likely to be driven by a decrease in collective human and social capital of the focal firm's board caused by a director's death given that focal firms in our alternative identification strategy have not lost any director.

Another possible explanation is that CEOs who have experienced the death of an independent director may experience strong negative emotions that may influence their risk-taking propensities (Fessler, Pillsworth, and Flamson, 2004), which in turn can shape CEOs' acquisitiveness in the post-director death period. Although our analyses cannot rule out this alternative explanation, we suggest that this explanation is less likely to be the mechanism because emotions (e.g., anxiety) generally do not last for a long period of time (Gooty, Gavin, and Ashkanasy, 2009) and are less likely to influence CEOs' acquisitiveness years after the death event as our empirical approach suggests. In sum, our findings are most likely to be driven by the decreasing importance of extrinsic goals among CEOs who have experienced the death of their social peers, as suggested by posttraumatic growth theory.

Table 1. Descriptive statistics and correlations

Variable		Mean	S.D.	Min.	Max.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1 Number of bids		0.24	0.80	0.00	16.00	1.00																		
2 Log transaction value		0.61	1.57	0.00	5.49	0.75	1.00																	
3 Log market value		6.61	2.03	2.22	11.69	0.20	0.24	1.00																
4 ROA		0.05	0.15	-0.76	0.39	0.08	0.09	0.33	1.00															
5 Debt ratio		0.20	0.20	0.00	0.91	0.06	0.06	0.10	-0.05	1.00														
6 Cash holding ratio		0.17	0.19	0.00	0.80	-0.05	-0.05	-0.09	-0.18	-0.40	1.00													
7 Capital expenditure ratio		0.05	0.06	0.00	0.31	0.00	-0.02	0.06	0.09	0.08	-0.13	1.00												
8 R&D ratio		0.03	0.07	0.00	0.40	-0.02	-0.04	-0.16	-0.52	-0.16	0.51	-0.10	1.00											
9 Total diversification		0.41	0.54	0.00	2.53	0.10	0.13	0.32	0.13	0.10	-0.18	-0.03	-0.13	1.00										
10 Institutional ownership		0.44	0.36	0.00	1.12	0.18	0.25	0.38	0.20	0.04	-0.04	0.01	-0.07	0.26	1.00									
11 Industry concentration		0.07	0.16	0.00	1.00	-0.03	-0.03	-0.01	0.03	0.00	0.01	-0.02	-0.03	-0.10	1.00									
12 Female director ratio		0.09	0.10	0.00	0.58	-0.01	-0.02	0.25	0.10	0.01	-0.08	-0.02	-0.11	0.03	0.02	0.01	1.00							
13 Board independence		0.67	0.16	0.00	0.94	-0.09	-0.10	-0.27	-0.15	-0.02	-0.07	-0.05	0.01	-0.11	-0.31	0.07	0.02	0.01	1.00					
14 Board size		11.04	4.37	2.00	43.00	0.14	0.17	0.65	0.20	0.08	-0.20	-0.06	-0.19	0.23	0.30	-0.07	0.21	-0.40	1.00					
15 CEO duality		0.53	0.50	0.00	1.00	0.02	0.04	0.01	0.05	0.04	-0.06	0.02	-0.09	0.03	0.09	-0.04	-0.01	-0.16	0.05	1.00				
16 CEO age		64.43	8.79	36.00	97.00	0.03	0.03	-0.05	0.07	0.01	-0.08	-0.02	-0.10	0.04	0.06	-0.05	-0.13	-0.17	0.03	0.35	1.00			
17 CEO tenure		6.23	6.75	0.00	54.50	-0.02	-0.04	-0.10	0.05	-0.05	-0.03	0.01	-0.05	-0.06	-0.02	-0.04	-0.11	0.22	0.35	1.00				
18 Log CEO compensation		14.25	1.18	11.46	17.05	0.08	0.15	0.65	0.23	0.14	-0.10	0.02	-0.17	0.25	0.38	0.01	0.26	-0.09	0.42	0.03	-0.09	-0.07	1.00	
19 Contingent compensation ratio		0.48	0.37	0.00	1.00	-0.04	0.04	0.34	0.06	0.13	-0.06	0.05	-0.08	0.15	0.14	0.07	0.19	0.13	0.09	-0.10	-0.24	-0.11	0.63	1.00

N = 3,351. Absolute value of correlations greater than 0.04 significant at p < 0.05 level. Two-tailed tests.

Table 2. Fixed-effects OLS regressions for the influence of director death on CEO acquisitiveness

Variables	Model 1 Bids	Model 2 Bids	Model 3 Value	Model 4 Value	Model 5 Large bids	Model 6 Small bids	Model 7 Large value	Model 8 Small value
Treatment × post-death period	-0.040 (0.010)	-0.039 (0.010)	-0.203 (0.012)	-0.200 (0.011)	-0.024 (0.019)	-0.012 (0.157)	-0.149 (0.040)	-0.028 (0.110)
Log market value		0.026 (0.001)		0.197 (0.000)	0.029 (0.000)	-0.002 (0.686)	0.222 (0.000)	-0.002 (0.802)
ROA		0.022 (0.654)		-0.067 (0.769)	-0.036 (0.247)	0.038 (0.186)	-0.218 (0.298)	0.055 (0.344)
Debt ratio		0.022 (0.594)		-0.002 (0.994)	0.009 (0.707)	0.021 (0.373)	0.048 (0.785)	0.019 (0.706)
Cashing hold ratio		0.033 (0.472)		0.214 (0.375)	0.050 (0.138)	-0.015 (0.558)	0.246 (0.287)	-0.013 (0.809)
Capital expenditure		-0.168 (0.209)		-1.056 (0.096)	-0.072 (0.390)	-0.100 (0.160)	-0.788 (0.171)	-0.196 (0.196)
R&D ratio		-0.068 (0.599)		-0.685 (0.261)	-0.113 (0.176)	0.033 (0.686)	-0.594 (0.292)	-0.015 (0.930)
Total diversification		-0.004 (0.775)		-0.064 (0.408)	-0.002 (0.839)	0.000 (0.969)	-0.026 (0.732)	-0.004 (0.793)
Institutional ownership		0.097 (0.001)		0.507 (0.001)	0.065 (0.002)	0.024 (0.104)	0.412 (0.006)	0.058 (0.057)
Industry concentration		0.012 (0.792)		0.102 (0.649)	0.003 (0.929)	-0.014 (0.677)	0.059 (0.766)	-0.030 (0.683)
CEO duality		0.010 (0.538)		0.060 (0.493)	0.014 (0.181)	0.006 (0.524)	0.092 (0.247)	0.008 (0.686)
CEO age		-0.002 (0.012)		-0.009 (0.060)	-0.001 (0.038)	-0.001 (0.019)	-0.006 (0.173)	-0.003 (0.021)
CEO tenure		0.001 (0.315)		0.005 (0.418)	0.001 (0.368)	0.001 (0.362)	0.004 (0.439)	0.002 (0.328)
Log compensation		0.002 (0.847)		-0.006 (0.927)	-0.000 (0.974)	-0.004 (0.503)	-0.002 (0.973)	-0.004 (0.771)
Contingent compensation ratio		-0.024 (0.480)		-0.019 (0.908)	0.004 (0.838)	-0.006 (0.730)	0.013 (0.935)	-0.014 (0.699)
Female director ratio		-0.093 (0.304)		-0.802 (0.065)	-0.081 (0.131)	0.005 (0.927)	-0.656 (0.082)	-0.016 (0.881)
Board independence		0.123 (0.027)		0.581 (0.042)	0.057 (0.113)	0.048 (0.158)	0.342 (0.189)	0.128 (0.072)
Board size		-0.002 (0.353)		-0.016 (0.213)	-0.003 (0.044)	0.001 (0.663)	-0.023 (0.053)	0.001 (0.643)
Constant	0.225 (0.257)	0.080 (0.792)	1.493 (0.197)	0.432 (0.794)	0.114 (0.643)	0.187 (0.208)	0.258 (0.877)	0.342 (0.282)
Observations	3,351	3,351	3,351	3,351	3,351	3,351	3,351	3,351
R ²	0.221	0.238	0.212	0.239	0.226	0.166	0.239	0.164
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Adjusted R ²	0.144	0.159	0.135	0.160	0.145	0.079	0.159	0.077

p-value reported in parentheses.

If an independent director's death attenuates the importance of extrinsic goals in CEOs' decision making as predicted by posttraumatic growth theory, the decrease in CEO acquisitiveness in the post-director death period should be reflected mainly by large acquisitions instead of small acquisitions considering that large acquisitions are more instrumental in achieving CEOs' extrinsic goals than small acquisitions. We thus examine

the differential influence of independent directors' deaths on large acquisitions versus small acquisitions. We use the median transaction value of all the acquisitions announced by all the firms in two-digit SIC codes as a cutoff to identify large (small) acquisitions. An acquisition is coded as a large (small) acquisition if its transaction value is higher (lower) than the median industry cutoff. The number of large (small) acquisitions is measured as

the total number of large (small) acquisitions that a firm has conducted in a year. The total transaction value of large (small) acquisitions is measured as the summated transaction value of all the large (small) acquisitions. The dependent variable of Model 5 in Table 2 is the natural log of the number of large acquisitions plus one and the dependent variable of Model 6 in Table 2 is the natural log of the number of small acquisitions plus one. The coefficient estimate of the interaction term is statistically significant only with the number of large acquisitions as the dependent variable ($\beta = -0.024$, $p\text{-value} = 0.019$), but not with the number of small acquisitions as the dependent variable ($\beta = -0.012$, $p\text{-value} = 0.157$). In terms of economic magnitude, compared with firms that did not witness an independent director's death, firms that experienced an independent director's death will witness a 2.37 percent ($\exp(-0.024)-1$) decrease in the number of large acquisitions from the pre-death period to the post-death period.

Similarly, results of Models 7 and 8 show that the coefficient estimate of the interaction term is statistically significant only with the value of large acquisitions as the dependent variable ($\beta = -0.149$, $p\text{-value} = 0.040$), but not with the value of small acquisitions as the dependent variable ($\beta = -0.028$, $p\text{-value} = 0.110$). In terms of economic magnitude, compared with firms that did not witness an independent director's death, firms that experienced an independent director's death will witness a 13.8 percent ($\exp(-0.149)-1$) decrease in the value of large acquisitions from the pre-death period to the post-death period. These results indicate that the death of an independent director mainly influences large acquisitions.

If a drop in CEOs' acquisitiveness is driven by the decreasing importance of extrinsic goals for CEOs who experienced the loss of independent directors, the effect should be stronger for unanticipated director deaths. This is because CEOs should experience a higher degree of mortality awareness if an independent director's death is sudden than if it is anticipated. Sudden death receives a value of 1 and 0 otherwise. In Table 3, Models 1 and 2 report results with sudden death as the moderator. The coefficient estimate of the triple interaction is negative and statistically significant in both Models 1 and 2, which have the number of acquisitions and the value of acquisition as the dependent variable, respectively. In these models, the coefficient estimate of treatment \times post-death becomes insignificant. In

terms of economic magnitude, firms with an unexpected independent director's death witness an 8.1 percent ($\exp(-0.084)-1$) decrease in the number of acquisitions and a 31.2 percent ($\exp(-0.375)-1$) decrease in the value of acquisitions from the pre-death period to the post-death period, compared with the change for firms without an independent director's unexpected death.

We also examine whether the relationship between an independent director's death and CEO acquisitiveness is contingent on the age of focal CEOs at the time of the director death. On the one hand, older CEOs have been exposed to more reminders of mortality (Maxfield *et al.*, 2007) and are less likely to be influenced by the loss of independent directors. On the other hand, since death is more relevant for older CEOs than younger CEOs and witnessing the loss of social peers is more likely to trigger salient mortality awareness. We use treatment firm CEO's age at the time of an independent director death to measure the variable of "CEO age at director death" (control firm and treatment firm receive the same value). We find that the coefficient estimate of treatment \times post-death \times CEO age at director death in Models 3 and 4 of Table 3 is not statistically significant in either model. These results indicate that the influence of an independent director's death on a CEO's acquisitiveness may not hinge on focal CEO age.

CONCLUDING REMARKS

We find that CEOs who have witnessed the death of an independent director become less acquisitive in the post-director death period, consistent with posttraumatic growth theory's prediction. In addition, we find that this influence is captured mainly by a decrease in large acquisitions vis-à-vis small acquisitions, and a sudden death of an independent director has a more profound influence on CEO acquisitiveness.

Findings of this study shed light on how the death of CEOs' social peers may influence the CEOs' motivations in strategic decisions. Strategic leadership research has demonstrated that corporate leaders' social peers can influence their strategic decisions (Ahern, Duchin, and Shumway, 2014; McDonald, Westphal, and Graebner, 2008; Shue, 2013; Westphal and Zajac, 2013). Yet, existing research has focused on social learning and information exchange between CEOs and their

Table 3. Fixed-effects OLS regressions for potential moderators

Variables	Model 1 Bids	Model 2 Value	Model 3 Bids	Model 4 Value
Treatment × post-death × sudden death	-0.084 (0.008)	-0.375 (0.022)		
Treatment × post-death × CEO age at director death			-0.002 (0.318)	-0.009 (0.298)
Post-death × sudden death	0.012 (0.663)	0.009 (0.950)		
Post-death × CEO age at director death			0.000 (0.619)	0.000 (0.819)
Treatment × post-death	-0.009 (0.634)	-0.060 (0.544)	0.071 (0.533)	0.368 (0.508)
Log market value	0.026 (0.001)	0.199 (0.000)	0.026 (0.001)	0.198 (0.000)
ROA	0.021 (0.666)	-0.071 (0.754)	0.024 (0.630)	-0.060 (0.793)
Debt ratio	0.020 (0.615)	-0.007 (0.974)	0.021 (0.616)	-0.004 (0.985)
Cashing hold ratio	0.026 (0.572)	0.184 (0.440)	0.033 (0.464)	0.218 (0.364)
Capital expenditure	-0.190 (0.157)	-1.159 (0.070)	-0.164 (0.220)	-1.039 (0.103)
R&D ratio	-0.048 (0.713)	-0.593 (0.341)	-0.067 (0.604)	-0.679 (0.266)
Total diversification	-0.004 (0.790)	-0.061 (0.419)	-0.004 (0.771)	-0.063 (0.415)
Institutional ownership	0.097 (0.001)	0.511 (0.001)	0.095 (0.002)	0.498 (0.001)
Industry concentration	0.018 (0.700)	0.132 (0.556)	0.011 (0.809)	0.097 (0.665)
CEO duality	0.009 (0.586)	0.054 (0.533)	0.011 (0.518)	0.064 (0.471)
CEO age	-0.003 (0.008)	-0.010 (0.042)	-0.002 (0.047)	-0.007 (0.165)
CEO tenure	0.001 (0.311)	0.005 (0.413)	0.001 (0.308)	0.005 (0.412)
Log compensation	0.003 (0.825)	-0.005 (0.940)	0.002 (0.864)	-0.007 (0.908)
Contingent compensation ratio	-0.023 (0.497)	-0.016 (0.921)	-0.024 (0.496)	-0.016 (0.924)
Female director ratio	-0.084 (0.347)	-0.758 (0.079)	-0.093 (0.305)	-0.802 (0.067)
Board independence	0.127 (0.022)	0.601 (0.036)	0.126 (0.023)	0.587 (0.040)
Board size	-0.002 (0.362)	-0.016 (0.218)	-0.002 (0.395)	-0.015 (0.237)
Constant	0.084 (0.783)	0.438 (0.790)	0.054 (0.860)	0.295 (0.859)
Observations	3,351	3,351	3,351	3,351
R ²	0.240	0.241	0.239	0.240
Year FE	YES	YES	YES	YES
Adjusted R ²	0.161	0.162	0.159	0.160

p-value reported in parentheses.

social peers. This study expands strategic leadership research by demonstrating that the death of social peers can also influence CEOs' strategic decisions, possibly through increasing their mortality awareness. Relatedly, prior research has attested to the importance of CEOs in firm acquisition decisions (Halebian *et al.*, 2009). Findings from this study advance this stream of research by suggesting that the death of independent directors can also shape CEOs' acquisitiveness, enriching the behavioral explanation of firm acquisition decisions.

Our study has limitations that can offer several avenues for future research. First, although our findings are largely consistent with the prediction of posttraumatic growth theory, we are unable to examine the specific mediating mechanisms because we were not able to analyze CEOs' behavioral motivations directly. Although our additional analyses help address some potential alternative mechanisms, more research is needed to pinpoint the process of how the death of an independent director influences CEOs' decisions.

Second, we have focused on the number and value of acquisitions as the dependent variables but do not examine whether quality of CEOs' acquisition decisions may change from the pre- to the post-director death period. Grant and Wade-Benzoni (2009) suggest that mortality awareness can lead individuals to contemplate their own meaning and purposes in life and resort to more analytical and rational psychological systems. Assuming that an independent director's death can heighten CEOs' mortality awareness, CEOs may tend to make fewer, yet more thoughtful acquisitions in the post-director death period.

Third, deaths of other social peers might impact CEO decisions. We focus on independent director deaths as a research context because both CEOs and independent board directors are considered peer corporate leaders (Finkelstein *et al.*, 2009). Nevertheless, there may be other events that can also influence CEO death awareness (e.g., the loss of family members and experiencing near-death events). Future research can examine whether other events can trigger CEO mortality awareness and thereby influence CEO strategic decisions.

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of this article:

Appendix S1. Additional Information on Matching and Analyses.