

# The role of CEO accounts and perceived integrity in analysts' forecasts

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## ARTICLE INFO

### Keywords:

CEO causal accounts  
CEO perceived integrity  
Financial analysts' forecasts  
Self-serving bias  
Actor-observer perspective

## ABSTRACT

Although holding oneself accountable is deemed important for effective leadership, CEOs tend to demonstrate a self-serving tendency when reporting their company's performance to the financial community. Leaders do so by providing internal accounts for favorable performance and external accounts for unfavorable performance. The effects of this strategy on the financial community's judgments of a company's value, however, is frequently mixed. Guided by the actor-observer perspective, we propose that observers (i.e., analysts) are likely to provide higher forecasts for firms whose CEOs attribute unfavorable organizational outcomes to internal factors and favorable outcomes to external factors. Integrating this conceptual perspective with attribution theory, we predicted that CEO accounts will have a stronger influence on analysts' forecasts when the company performs unfavorably versus favorably. Results of archival data analysis ( $N = 35,676$  quarterly earnings conference calls) generally supported our hypothesis, and were then replicated in a pre-registered follow-up field experiment (Study 2;  $N = 307$ ), showing that analysts' perceptions of the leader's integrity mediated the effects of CEO accounts on analysts' evaluation of the company. The mediating role of leader integrity was only significant when the company performed unfavorably (versus favorably). The present research adds to theory on causal accounts and perceived leader integrity, while offering guidance on how leaders' accounts can relate to observers' evaluations of those leaders and their companies.

## 1. Introduction

Leadership research (e.g., Bass & Steidlmeier, 1999; Quigley & Hambrick, 2015; Simons, 2002) and high-profile scandals in industries, ranging from financial manipulations in banks to known faulty products in cars (e.g., Edelman, 2021; Shaw, 2015), have increased pressure on leaders to hold themselves accountable for their organization's performance (Meyer & Kirby, 2010; Pless et al., 2012; Waldman & Balven, 2014). Yet, holding themselves accountable is often at odds with what CEOs choose to do when their firm's performance falls below expectations (Wang et al., 2019). Instead, leaders frequently exhibit a self-serving tendency, where they use internal accounts that highlight how they are responsible agents and stewards making effective decisions when their organization performs well, while attributing poor performance to external causes and events, such as market conditions (Baginski et al., 2000; Bettman & Weitz, 1983; Clapham & Schwenk, 1991; Clatworthy & Jones, 2003; Elsbach & Sutton, 1992; Ginzel et al., 1993; Salancik & Meindl, 1984; Staw et al., 1983). Although some research has endorsed the use of this strategy (Barton & Mercer, 2005;

Jones & Wortman, 1973), the evidence supporting its effectiveness in promoting a higher evaluation of their company by financial market participants has been mixed.

The tendency for CEOs to use this self-serving approach overlooks research showing that actors and observers can diverge in their attributions regarding performance outcomes. For example, observers frequently make the opposite attributions to actors, instead associating an organization's successes to external factors, and failures to internal factors under the control of the actor. Here we use the actor-observer asymmetry as a basis for formulating our research question and hypotheses (Jones & Nisbett, 1971; Nisbett & Bellows, 1977; Malle, 2006), in order to test whether greater benefits accrue when leaders provide causal accounts that reflect the actor-observer perspective versus using self-serving accounts. Building upon attribution theory and the causal account literature, we propose that CEO accounts that align with the observers' perspective will be more positively received by observers because they activate observers' perceptions of the leader's integrity. This occurs because perceived leader integrity is enhanced when the trustee's and the trustor's values and principles have a higher level of

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<https://doi.org/10.1016/j.obhdp.2023.104250>

Received 15 May 2022; Received in revised form 6 April 2023; Accepted 14 April 2023

Available online 18 May 2023

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congruence. The more that CEO causal accounts align with the observer's attributions, the more likely observers will view the causal account as accurate and trustworthy.

We test our theorizing on analysts' perceptions of CEO integrity and their forecasting decisions for several reasons. First, perceived CEO integrity should relate positively to financial analysts' forecasts (Cianci & Kaplan, 2010). Prowse (1998), for example, reported that perceived leader integrity was a significant predictor of angel investors' decisions to invest in the company. Second, the match between a leader's words and deeds can be an indicator of behavioral integrity (Kim et al., 2006; Simons et al., 2015; Simons, 2002, 2008); consequently, perceived CEO integrity should be higher when the CEO's stated projections aligns with the company's performance. An important question facing these leaders is how perceived integrity is affected when the company fails to meet expectations, along with how the leader accounts for that failure.

Our current research builds on prior theory and research examining whether CEO integrity can be enhanced when leaders hold themselves accountable for unfavorable outcomes. By assuming the responsibility for poor performance, CEOs demonstrate a willingness to accept responsibility for the company's failure, even though there may be a potential cost to them or their organization in terms of analysts' evaluation of their firm's value.

Third, the investment community and a company's leaders frequently have different goals. Investment analysts are concerned with making accurate assessments of a company's prospects and value, which is dependent on the information CEOs provide about their company's performance (Verrecchia, 1982). Conversely, CEOs are motivated to place their companies and themselves in the most positive light, which can result less transparency in terms of the information they make public about their company's performance (Abrahamson & Park, 1994). Analysts are aware of these leadership tendencies and will hedge their forecasts of company earnings, cash flows, and future stock price accordingly. CEO behavior deemed inconsistent, self-serving, or opportunistic, based on the CEO's causal account, can increase agency costs and lower analysts' forecasts (Jensen & Meckling, 1976; Jensen, 1986). Agency costs refer to the reduction in a company's valuation arising from executives having different interests from shareholders (e.g., Healy & Palepu, 2001). Thus, perceived CEO integrity is relevant to our research because it can be affected by CEO accounts, which then influences how analysts forecast a company's future value and stock price.

Fourth, financial analysts have numerous demands in their work that incentivize them to make quick and accurate decisions (Busenbark et al., 2017). A leader's perceived integrity can provide a useful heuristic and input for determining whether the leader's account is accurate, lessening the analyst's need to investigate the discrepancy between the interests of the CEO and those of the shareholders, while reducing the agency costs that they incorporate into their forecasting.

Our research makes several important contributions to research on leadership causal accounts and how leaders are perceived by key stakeholders. In terms of building on existing theory, we use a consensus shifting focus (Hollenbeck, 2008) by challenging the tendency for leaders to demonstrate self-serving account-giving, while then comparing that strategy to accounts reflecting the actor-observer perspective. Second, we extend previous research by testing in field experiments the role of perceived leader integrity examining the relationship between CEO causal accounts and financial analysts' forecasts. Specifically, while behavioral integrity research shows that benefits accrue to leaders when their words match their deeds, we add to this work by exploring the mediating role of perceived leader integrity arising from CEO accountability, when their company *fails to meet* its projections. Also, prior leadership research has focused on examining a leader's perceived integrity and its relevance to internal stakeholders (e.g., employees), and relatively little research has focused on how a CEO's perceived integrity and leadership influences external stakeholders, such as analysts and shareholders (Simons, 2002). This gap is

notable because CEOs of publicly traded companies are not just evaluated by their employees or boards of directors; they are also judged by financial analysts, prospective investors, and current shareholders.

We chose to examine financial analysts' forecasts as the criterion for four reasons. First, financial analysts' forecasts are deemed highly reliable and valid predictors of a company's value (e.g., Womack, 1996). Second, analysts are one of the most influential stakeholders for publicly traded companies (Zuckerman, 1999). Their assessments can predict CEO dismissal (Wang et al., 2023), affect a company's ability to raise capital (Cheng & Subramanyam, 2008), increase potential investors' awareness of the company, enhance the market demand for the company's stock, and ultimately affect the company's stock price (Brauer & Wiersema, 2018; Piotroski & Roulstone, 2004; Rindova et al., 2005; Ryan & Taffler, 2004; Womack, 1996). Third, a company's stock price can be contaminated by numerous factors (e.g., macroeconomic data, other investment opportunities in the market; Anderson, 1988). In contrast, analysts' reactions to CEO causal accounts represent a more proximal criterion that is relevant to testing the core theoretical questions that guide our research, which we describe in detail below. Fourth, although previous research has studied shareholders' decision-making patterns (e.g., Fehr et al., 2021), financial analysts are typically more highly educated and experienced decision makers, providing a stronger test of our hypotheses.

In terms of the broader contributions to leadership theory, research, and practice, the question of "how do leaders matter?" has been routinely explored in organizational behavior research (e.g., Finkelstein & Boyd, 1998; Waldman et al., 2001). Yet, this body of research has typically not focused on objective financial metrics at the most senior levels of organizations. We propose that CEOs can add value in how they represent their company's performance to external stakeholders. Specifically, CEOs routinely discuss both internal and external factors that influenced their company's performance at quarterly investor meetings. These meetings provide key stakeholders with information they use to judge the company's leadership and forecast the company's value. CEOs must then understand the potential consequences of their causal accounts on the assessments of their company's value. Our research can provide CEOs with valuable guidance regarding how they transmit their leadership to external stakeholders in ways that enhances the company's market value.

Last, although topics of CEO accounts and integrity can be deemed 'intangible data' in the minds of business leaders, economists, and psychologists, we suggest that they can have a very tangible impact on determining a company's value in the stock market. Business school courses frequently treat topics such as finance and organizational psychology/behavior separately. In finance courses the focus is primarily on determining the economic value of a company and its risks. In organizational behavior classes, students learn about effective leadership, including the importance of demonstrating integrity with followers, peers, and leaders. These current disparate educational approaches can miss the opportunity to examine how these two fields might inform one another in terms of examining the effects of leaders' accounts on their company's performance and especially how observers determine its value (see also Wang et al., 2023).

Fig. 1 provides our theoretical model that guided our research. CEO accounts based on internal attributions are predicted to relate to higher analysts' forecasts than external accounts. This effect occurs because internal (versus external) accounts elicit higher levels of perceived CEO integrity. We expect that these effects will be stronger when the company's performance is unfavorable versus favorable. In the sections that follow, we provide an overview of theory and research on casual accounts, including self-serving and actor-observer perspectives, perceived integrity, and then develop the conceptual arguments for our hypotheses that we test in a large field study and a pre-registered experiment.

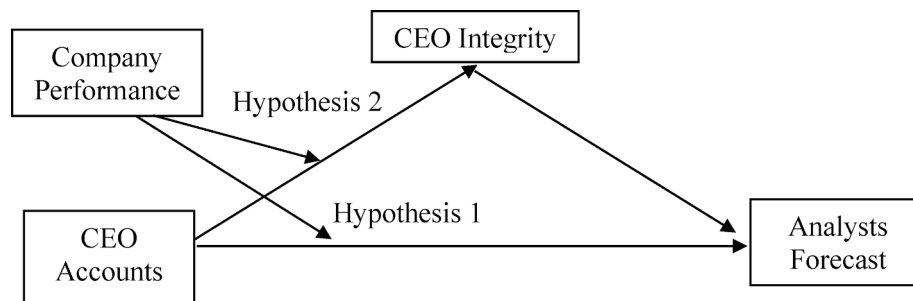


Fig. 1. Theoretical Model.

## 2. Conceptual linkages between CEO causal accounts and company performance

Wang et al. (2019) sought to explain how taking personal account or responsibility for an organization's performance impacts how the organization and its leaders are judged. Specifically, accountability has been defined as, "*the implicit or explicit expectation that one be called on to justify one's beliefs, feelings, and actions to others*" (Tetlock, 1992, p. 331). With this interpretation, the locus of accountability is linked to how others judge a leader's accountability. Wang et al. (2019) suggested that 'internally assumed accountability' is missing from this research, where they define this form of accountability "as personal ownership for performance failure, and acceptance of negative personal repercussions (if any) that may follow" (Wang et al., 2019, p. 187).

Causal accounts are an important topic for research and practice because stakeholders often ask leaders to justify their own performance and their company's activities (Scott & Lyman, 1968; Semin & Manstead, 1983; Tetlock, 1992). An assumption underlying this research is that effective accounts for company performance can result in positive outcomes, while ineffective accounts can lower the perceived effectiveness of both the leader and the firm (Stenning, 1995). Causal accounts are important because leaders are subject to evaluation by both internal and external stakeholders (Cummings & Anton, 1990) and in their leadership role, they are expected to transparently and accurately explain their company's performance. Their accounts also create expectations for the company and its leadership to meet future obligations and predictions (Frink & Klimoski, 2004; Pfeffer, 1981).

CEO causal accounts are important to financial analysts because they contain vital information on the factors that help explain past outcomes, and reduce uncertainty and risk associated with their estimates of a company's future value (Pan et al., 2018). Analysts are motivated to engage in a sense-making process to locate the event's cause so that subsequent decisions can be made that improve future outcomes for investors, serving to reduce risk and uncertainty in the markets. Causal accounts help analysts effectively manage the level of investment risk impacting their clients (Miller & Bromiley, 1990). Research shows that analysts prefer transparency and can reward CEOs who refrain from trying to obscure their company's performance (DeBoskey & Gillett, 2013).

Especially germane to our research are two studies by Baginski and colleagues (Baginski et al., 2000, 2004). Their research showed that causal accounts can be associated with heightened stock price reactions to management forecasts, concluding that CEO accounts "enhance either the precision or credibility of the management forecasts" (Baginski et al., 2000, p. 371). Causal accounts by a company's CEO support analysts' sense-making needs—to understand the causes underlying a company's performance—by providing information they might not otherwise have available to them. These causal accounts also provide observers with a lens through which to interpret a company's performance by seeking to "verbally bridge the gap between action and expectation" (Scott & Lyman, 1968, p. 46).

Importantly, CEO accounts not only provide relevant contextual

information in judging a company's performance, these accounts also inform perceptions of the leader's character, intentions (Mehlman & Snyder, 1985), and willingness to be held accountable for their company's performance (Scott & Lyman, 1968). Savvy leaders can also choose to tell the analysts what they think they want to hear. For example, the CEO might take the blame for poor performance even though it may not be their fault, while trying to promote the illusion of personal control with observers. Impression management researchers label this as being, "behaviors that actors use to shape how they are seen by others" (Bolino et al., 2016, p. 378). Unfavorable company performance relative to expectations creates a predicament for leaders in terms of conveying a positive impression about their company, when the leader assumes that positive impressions of their company will achieve the best possible outcome for their company and themselves (Schlenker, 1980). Bolino et al. (2016) noted, however, that despite decades of research, gaps still remain in explaining the effects of leaders conveying impressions of integrity or moral worthiness, and how such actions impact internal and external stakeholders' evaluations of them and their company (see also Jones & Pittman, 1982).

### 2.1. Self-Serving accounts

As described above, self-serving accounts refer to accounts that attribute unfavorable outcomes to external causes (e.g., situational factors, actions of others, poor market conditions, and bad luck) and favorable outcomes to internal causes (e.g., business acumen, one's sense of leadership, and intelligence). The underlying conceptual mechanism, labeled self-serving bias, explains how individuals pursue efforts to portray themselves positively (Bernstein et al., 1979; Campbell & Sedikides, 1999; Heider, 1958). This internal bias arises from a need to protect one's self-concept, which serves as a mechanism to keep a positive image of oneself intact (Zuckerman, 1979). Building on this theoretical framework, using self-serving accounts denotes leaders providing a public account that reflects this tendency (Staw et al., 1983).

One aspect of self-serving accounts involves providing external accounts for unfavorable performance. Doing so can reduce the negative impact of those outcomes on the leader's reputation (Bettman & Weitz, 1983; Chen & Meindl, 1991; Salancik & Meindl, 1984; Staw et al., 1983). Tomlinson and Mayer (2009), for instance, stated, "the best way to repair low integrity is for the trustee to attempt to reattribute the cause to a less damaging causal ascription, such as an external cause" (p. 94). External account-giving for unfavorable company performance, however, can be seen as deflecting blame to avoid tarnishing the company's or the leader's reputation (Scott & Lyman, 1968). Moreover, because analysts are typically knowledgeable about industry conditions, such external explanations carry less new information to incorporate into predictions. Analysts and investors expect leaders to be in control of their company's performance (Lee et al., 2004). When CEOs attribute blame for negative events or poorer performance to external factors, their accounts violate those expectations, leading to negative impressions of the company and its leadership. Self-serving accounts can generate cynicism and it is not obvious whether analysts view them as

informative (Koonce et al., 2011).

A second theoretical argument regarding the impact of self-serving accounts states that when leaders take credit for favorable outcomes, such accounts can signal to observers that similar outcomes are likely to occur in the future under the leader's stewardship. However, they can also pose challenges for analysts in determining which accounts are truly informative versus those that are driven by the CEO's self-serving opportunism and/or bias (Baginski et al., 2000; Kimbrough & Wang, 2014). A drawback of this strategy is that these accounts can be met with skepticism from analysts, especially when other comparable companies in the focal industry have performed favorably (Merkl-Davies & Brennan, 2007). This can occur because analysts tend to have knowledge of industry-wide conditions that can impact how they interpret individual company performance (Bradley, 1978). Second, as Kimbrough and Wang (2014) argue, internal accounts for favorable performance are not easily verifiable, leading analysts to discount their legitimacy and credibility. Third, favorable company performance (i.e., when a company meets or exceeds its projections) will generally have a lower impact on analysts' reactions compared to unfavorable company performance. This is because unfavorable information is deemed more important and given more weight versus favorable, a common finding reported in psychology (Hastie, 1984; Weiner, 1986; Wong & Weiner, 1981) and financial research (Baginski et al., 2000).

Evidence linking a self-serving strategy to a company's subsequent financial performance indicators is mixed. For example, Staw et al. (1983) found that self-serving accounts related positively to a company's stock price, but negatively in subsequent earnings per share for the company. Salancik and Meindl (1984) reported that future profit growth correlated positively with the leader's tendency to take credit for good outcomes, but only in unstable (versus stable) market conditions. Clapham and Schwenk (1991) reported this pattern of account giving related negatively to subsequent earnings per share. Hutton et al. (2003) found no evidence that qualitative disclosures affected security prices, while Kim (2013) reported an inverse u-shape in the relation between this tendency and the market's response to company acquisitions.

## 2.2. Actor-observer perspective

The actor-observer theoretical perspective refers to the tendency for observers to attribute unfavorable outcomes to internal sources and favorable outcomes to external factors (Malle, 2006). This perspective is based on the *actor-observer hypothesis* (Jones & Nisbett, 1971), which states people tend to explain their own behavior using situational causes and another's behavior with person causes. A related process, labeled the *fundamental attribution error*, refers to the tendency for individuals to attribute behaviors to stable traits of the individual (Ross, 1977). In contrast to these two processes, the *actor-observer perspective* highlights how observers and actors can view causes of events differently (Herzberger & Clore, 1979), emphasizing the duality that occurs between actors attributing causal effects to the situational factors surrounding them, and observers attributing causal effects to the disposition of the actor (Jones & Nisbett, 1971).

Accounts that align with the observer's perspective are likely to be viewed favorably because they reflect a similar understanding of the events. In addition to this general theory, internal (versus external) accounts for unfavorable outcomes can lead to positive analyst reactions for at least three reasons. First, even though many external factors cannot be controlled, the CEO's role is to understand and anticipate factors that can impact a company's performance and then respond accordingly (Mintzberg, 1989). Internal accounts can, for example, convey an understanding that leadership (a) is aware of which parts of the company's operations are weak and require changes; (b) understands whether and how its strategy might be aligned or misaligned with external/industry conditions, and is able to distinguish controllable versus uncontrollable factors; and (c) demonstrates a proactive strategic (vs passive) mindset of reacting to events occurring in the external

environment.

Second, it is reasonable to assume that leaders have greater control over internal versus external factors, and hence are in a better position to take corrective action to address those internal factors when needed (Porter, 2008). Analysts have also been shown to view internal accounts for poor performance as providing greater simplicity and certainty than an external account, reinforcing the conceptual basis for why they value them more (Busenbark et al., 2017; Litov et al., 2012; Plumlee, 2003). Third, in their sense-making process, analysts believe they understand the inner-workings of the company better when CEOs ascribe these processes to themselves (Benner & Zenger, 2016). By making themselves personally accountable, leaders absorb some of the uncertainty that analysts normally face when making financial forecasts.

## 2.3. Company financial performance

A company's financial performance provides the strongest signal to the investment community regarding a company's value and is highly scrutinized by analysts in terms of how the company performed relative to its forecasted earnings (Hodge, 2003). Although analysts are sensitized to deviations in either direction between projected and reported earnings when making their forecasts (Matsumoto, 2002; Skinner & Sloan, 2002), unfavorable outcomes relative to expectations motivates them to seek and evaluate causal accounts more than do favorable outcomes. As noted, this effect reflects considerable evidence showing people weigh negative (versus positive) information more heavily in their judgments, especially in decisions involving risk (Baumeister et al., 2001; Graham et al., 2005; Mishina et al., 2010). One reason for this tendency is the perceived risk associated with loss generally is greater than the perceived risk associated with gains (Tversky & Kahneman, 1974, 1986). Favorable company performance relative to expectations, in contrast, is less likely to motivate analysts to search for information to explain good performance because their performance expectations have been met.

We propose financial analysts provide higher forecasts for companies whose CEO causal accounts reflect the actor-observer perspective rather than self-serving accounts, but that these effects depend on company performance.

**Hypothesis 1:** Financial analysts provide higher forecasts for CEOs who provide causal accounts reflecting the actor-observer perspective than self-serving accounts, specifically:

H1a - When company performance is *unfavorable*, financial analysts provide higher forecasts for companies whose CEOs provide causal accounts that are *more internal* than external.

H1b - When company performance is *favorable*, financial analysts provide higher forecasts for companies whose CEOs provide causal accounts that are *more external* than internal.

H1c - The predicted effects described above are larger when company performance is unfavorable versus favorable.

## 2.4. The role of perceived leader integrity in the relationship between CEO causal accounts and analysts' forecasts

Mayer, Davis, and Schoorman (1995, p. 719) defined individual integrity as "the extent to which the party's actions are congruent with his or her words." Along with benevolence and ability, integrity is deemed to be an essential antecedent to trust (Mayer et al., 1995). Trust refers to the willingness of others to be vulnerable to and hold in high regard the intentions behind the actor's (i.e., leader's) actions/behaviors (Rousseau et al., 1998). This literature also addresses integrity in terms of the tendency for individuals to act in ways consistent with their stated principles, even when results are unfavorable, unpopular, or in conflict with their self-interest (Mayer et al., 1995). Financial analysts value CEO integrity because they can more confidently assume the information being transmitted is accurate (Creed & Miles, 1996).

Beyond delivering on promises, leaders manage perceptions of their



integrity in the way they account for their company's performance (Whitener et al., 1998). Studies show that causal accounts can be useful in reducing internal attributions for word-deed misalignment, thereby minimizing the negative impact on the focal person's perceived integrity (Simons, 2002). However, accounts can be equivocal because CEOs can be motivated to be less transparent with, or worse misleading to, the investment community (Abrahamson & Park, 1994; Kothari et al., 2009) because they are protecting their self-interests. Baginski et al. (2000) proposed that investors might not view disclosures as credible when the CEO provides self-serving accounts.

We theorize that accounts reflecting the actor-observer perspective can lead to higher perceived CEO integrity than do self-serving accounts for three reasons. First, observers trust leaders who hold themselves accountable for outcomes or events, lessening the need for them to "cover one's back" (Clapp-Smith et al., 2009). Second, financial analysts have multiple demands on them that incentivize them to make quick and accurate decisions (Busenbark et al., 2017). Siegrist et al. (2000) outlined that it is far too demanding for observers to weigh individual pieces of evidence when judging integrity; it is more likely that observers use heuristics for these judgments, including their perceptions the other party has the same understanding of a specific situation. One factor that can drive perceived integrity and trust in others is whether the trustee shares the trustors' values and principles (Mayer et al., 1995). When CEO causal accounts reflect a similar understanding of both actor's and observer's values, we expect their congruence will enhance an analyst's evaluation of the leader's integrity.

Third, as actor-observer research has proposed, a CEO's integrity becomes highly salient to analysts because they "rely on the moral disposition of the agent to refrain from engaging in opportunistic behavior" (James, 2014, p. 57). It is one thing for CEOs to take credit for events that are favorable; it is quite another for them to hold themselves accountable when outcomes are unfavorable. This is because the CEO can risk being seen as less competent either for over-estimating the company's capabilities, or for not delivering on promises, or both. When individuals make decisions under conditions of uncertainty, the tendency for them to rely on heuristics is particularly strong (Ritter, 2003; Tversky & Kahneman, 1974). By assuming responsibility for unfavorable company performance, CEOs signal their integrity to hold themselves accountable even though doing so can carry costs. This argument is consistent with signaling costs (Bliege, Bird & Smith, 2005), which states that observers view signals as more meaningful and impactful when they are more (versus less) costly to the sender (in the present study, the leader).

We therefore propose that perceived CEO integrity relates positively to financial analysts' forecasts. First, leaders who demonstrate their willingness to take responsibility for unfavorable performance and absorb some of the risk associated with their decisions, raise analysts' confidence in the leader's integrity. Second, by demonstrating integrity via their accounts, analysts are less likely to question the CEO's motives when interpreting the company's performance. Alternatively, when the CEO accounts raise concerns about the leaders' integrity, analysts will more likely question whether the CEO's intentions are honest or deceptive. Conversely, a CEO's perceived integrity is likely to be less salient and have a weaker effect on analysts' forecasts when the company performance is positive because financial expectations have been met (Cianci & Kaplan, 2010). Moreover, since unfavorable outcomes attract greater scrutiny than favorable outcomes, the effect of CEO integrity on analysts' forecasts is predicted to be stronger when the company performs unfavorably versus favorably.

Accounts reflecting the actor-observer perspective (i.e., providing internal accounts for poor firm outcomes and external accounts when the firm performs favorably) could also reflect CEO humility. Whereas integrity refers to the tendency for CEOs to act in ways consistent with their stated principles even when results are unfavorable or in conflict with their self-interest, humility refers to a leader demonstrating (a) an awareness of one's own limitations, putting things in perspective,

acknowledging one's mistakes, (b) a willingness to keep an open mind and continuously improve (a willingness to take criticism), and (c) an appreciation of others strengths and contributions (above the domination of others) (e.g., Ou et al., 2014; Owens et al., 2013).

Ou et al. (2018) theorized and found that humility relates to firm performance through its effect on the top management team's (TMT) ambidextrous strategic orientation, showing humility related positively to the TMT's willingness to collaborate, share information, jointly make decisions, and promote a shared vision. Ou et al. (2018) explained the internal processes by which humility relates to firm performance. Our study, in contrast, tests whether CEO accounts of performance predicts external observers' assessment of the leader and their firm. We propose that CEO integrity is more relevant to analysts' forecasts than is humility because analysts are information-seeking and concerned about managing risk. Whereas humility reveals the leader's quality, integrity reflects the tendency to deliver on promises and tell the truth, even when the outcome is unfavorable. However, given the possibility that CEO accounts might also signal humility and relate to firm performance, we tested whether CEO integrity accounts for variance in our model beyond perceived CEO humility.

**Hypothesis 2:** Perceived CEO integrity mediates the effect of CEO accounts on analysts' forecasts and this effect is stronger when the company performs unfavorably versus favorably.

We used a field study and a pre-registered experiment to examine how external observers in the role of analysts judge the merits of CEOs' accounts for their company's performance. Our studies extend earlier leadership theory and research by including observers who have extensive experience in judging a CEO's leadership and integrity. Their judgements affect the value assigned to the firm and can impact a broad range of investors. Data and Supplemental Materials are available online at [https://osf.io/ue74z/?view\\_only=97041c4b22424b31987acf692e3e1c7a](https://osf.io/ue74z/?view_only=97041c4b22424b31987acf692e3e1c7a).

### 3. Study 1

#### 3.1. Sample

We matched companies with financial information in Compustat and CEO information in ExecuComp databases for the fiscal years from 2002 to 2013. During this 12-year period, we used Dow Jones Factiva to identify 37,020 quarterly earnings conference calls reported by these companies. We excluded conference calls that took place during the last year of a CEO's tenure because those years are less likely to be representative (e.g., it may have involved a dismissal of the CEO). Using data from the Institutional Brokers Estimate System (IBES), we matched the conference calls to earnings forecasts issued by analysts before and after the call (more details below). The final sample consisted of 35,676 company-quarters.

#### 3.2. Measures

**Analysts' Forecast:** Analysts' forecasts were operationalized as the revision in the consensus of analysts' forecasts of earnings per share (EPS) for each company. We focused on EPS forecasts because EPS is (a) the most widely used performance metric for organizations, and (b) forecasts of EPS are frequently updated to reflect new data (Washburn & Bromiley, 2014) more so than stock price forecasts. Analysts' forecast revisions are theoretically and practically relevant to the present research because they (a) are perceptual – they incorporate analysts' sense-making processes, (b) fluctuate independently by organization within an industry based on analysts' knowledge of those organizations, and (c) can significantly impact an organization's stock price (Womack, 1996).

To construct forecast revisions, we first identified the consensus forecast for a firm-quarter as the median of individual analysts' forecasts. To rule out "stale" forecasts, we followed prior literature (Brown

et al., 2009; Brown, 2001) and required a prior-to-announcement forecast to be no earlier than 120 days before the earnings announcement.<sup>1</sup> To isolate the effect of the CEO's account-giving and organization performance on analysts' forecasts, we measured analyst EPS consensus forecast for organization  $j$ 's EPS for quarter  $t + 1$  at two points in time: (a) immediately before organization  $j$ 's announcement of quarter  $t$ 's performance (*Pre*), and (b) seven days after the same announcement (*Post*). To remove firm-quarter-specific effects, the analysts' forecasts (i.e., *Forecast Revision*) was calculated as the residuals from a regression of the *Post*-earnings announcement forecast regressed the *Pre*-earnings announcement forecast, each divided by share price. Higher numbers signified more favorable forecasts.

**CEO Causal Accounts.** Self-serving accounts refer to providing internal accounts for favorable performance or external accounts for unfavorable performance. The actor-observer perspective refers to providing external accounts for favorable performance or internal accounts for unfavorable performance (see Fig. 2). An internal account provided for unfavorable performance is Cell A; an external account for unfavorable performance is Cell B. Similarly, an internal account for favorable performance measure is Cell C, while an external account for favorable performance measure is Cell D. Cells A and D represent behavior consistent with the Actor-Observer Perspective, whereas Cells B and C represent behavior consistent with Self-Serving Accounts.

To identify the extent to which CEO accounts are internal or external, we content-analyzed the investor conference call transcripts using both the pre-scripted and unscripted portions of the call. We coded each account as internal or external based on relevant words used (e.g., Gunsch et al., 2000). This approach is relevant to our research because investors consider words used in earnings transcripts in their analysis (Wieczner, 2015). Following Salancik and Meindl (1984), we restricted our textual analyses to sentences containing causal terms only, using the Linguistic Inquiry and Word Count (LIWC) dictionary (Pennebaker et al., 2015).

- *Internal Account* was operationalized as the number of times the CEO used internal references (me, I, my, mine, we, us, our) in their causal statements, divided by the total number of words in causal sentences. This approach is typical of research on organization valuation (e.g., Kim, 2013). To remove the effect of industry norms, we subtract out the mean internal account of peers during the prior five months.
- *External Account* was operationalized as the number of times the CEO referenced the external environment in their causal statements, divided by the total number of words in causal sentences of the call. Specifically, we used as keywords "competition" (compet\*), "regulation" (regulat\*), "industry", and "market" based on how leaders describe their external environment (e.g., Mintzberg, 1989). This methodology has been used effectively in other research to capture organization and industry characteristics (Li et al., 2013). To remove the effect of industry norms, we subtract out the mean external account of peers during the prior five months.

We then conducted a validation study to test our coding procedure. Two coders, who were blind to the study's hypotheses, independently coded 130 randomly selected conference calls from the sample. The coders had completed upper-level financial analysis courses plus six hours of coder training in which: (a) the terms were defined and explained, (b) coding protocols were developed, (c) the coders developed a common frame of reference and practiced coding sample reports. The coders counted the number of internal and external explanations by the CEO and recorded the pivotal sentences that led them to classify the accounts as internal and external.<sup>2</sup>

<sup>1</sup> We use the median instead of the mean to construct consensus forecasts to reduce the effect of outliers.

<sup>2</sup> Examples of pivotal sentences are provided in the Supplementary On-line Materials.

We tested whether our keywords in a sentence were associated with the likelihood of being identified as pivotal by coders (Chi-square Test for Independence). For internal accounts, we found a significantly larger proportion of pivotal sentences with first-person pronouns as compared to the overall sample ( $N = 637$ ,  $E[N] = 417$ ,  $\chi^2 = 315$ ,  $p = 0.001$ ), suggesting a significant association between the presence of first-person pronouns and the likelihood of being identified as pivotal for internal accounts. Similarly, a significantly large presence of words related to industry characteristics (compet\*, regulat\*, industry, market) was observed in the pivotal sentences used to characterize external attributions as compared to the overall sample ( $N = 198$ ,  $E[N] = 29$ ,  $\chi^2 = 1,029$ ,  $p = 0.001$ ), supporting the validity of our text analysis.

To measure the extent the CEO used internal vs external accounts, we defined *CEO Account* as the standardized value of *Internal Account* minus the standardized value of *External Account*. As an additional analysis, we used principal component analysis of Internal and External Accounts as explained in the results section.

**Company Performance:** The company performance in a fiscal quarter was coded as *Favorable* = 1 if actual EPS  $\geq$  analyst EPS consensus forecast for that quarter; 0 otherwise. In 70.2 % the earnings met or exceeded analysts' expectations, while 29.8 % of the sample had earnings that fell below expectations. These percentages are similar to prior studies (e.g., Brown et al. (2009)). We defined performance in this binary manner to be consistent with the hypothesis formulation where we predict that favorable vs unfavorable performance have different implications for how analysts interpret CEO accounts. In the analyses described below, we also include a continuous measure of performance.

**Control Variables.** We considered numerous theoretical factors and management and organization characteristics that could influence analysts' forecasts of future earnings. First, aside from the hypothesized effects of favorable vs unfavorable company performance and CEO accounts, we expected analysts' forecasts of future earnings to vary directly with actual earnings in the current quarter (Bartov et al., 2002). We defined *Unexpected Earnings* as the residual from a regression of actual EPS on analysts' consensus EPS forecast, each divided by stock price, where consensus EPS was the median of analysts' latest forecasts prior to the announcement for that company-quarter.

We controlled for organization *Size*, operationalized as the log of market value of equity, to account for size differences across organizations. We controlled for the organization's market-to-book ratio (*MTB*) to account for the market's assessment of the organization's potential growth and future value appreciation. *MTB* is the market value of the organization assets divided by their book value (Tobin's Q). We controlled for speed of organizational growth using *Sales Growth*, defined as the change in sales from the beginning of a year to the end of that year. *Company Age* is the natural logarithm of the number of years since a firm's founding.

We also controlled for *Corporate Governance* characteristics, labelled as the *entrenchment* index (Bebchuk et al., 2009), consisting of six provisions: staggered boards, limits to shareholder bylaw amendments, poison pills, golden parachutes, and supermajority requirements for mergers and charter amendments. The index takes on values from 1 to 6. These data, however, were available in a limited dataset resulting in missing data. To deal with missing data, we employed multiple imputation (30 in total) using the multivariate normality model including all other variables in the model.

We controlled for *Manager Ability* based on the leader's efficiency in generating revenues (Demerjian et al., 2012). We controlled for *Managerial Control*, defined as the percentage of words in conference calls spoken by the CEO, as opposed to other organization representatives (Li et al., 2014). *Institutional Ownership* is the percentage of firm's shares outstanding held by institutional holdings to control for the extent of external monitoring (Lewellen & Lewellen, 2022).

Approximately 11 % of the announcements pertained to the fourth fiscal quarter of a year, which adds additional complexity because they are announced with the company's annual results, providing more

|                         |               |               |
|-------------------------|---------------|---------------|
|                         | CEO Accounts  |               |
|                         | More Internal | More External |
| Unfavorable Performance | A             | B             |
| Favorable Performance   | C             | D             |

Actor-Observer Perspective includes accounts in cells A and D. Self-Serving Accounts includes behavior in cells B and C.

Fig. 2. CEO Causal Accounts.

detailed information than other quarterly reports. Thus, we included an indicator variable *Q4* to identify and control for these observations. *Bid-ask Spread* was included to control for information uncertainty. We controlled for information uncertainty to rule it out as an alternative explanation for the hypothesized relationship between the CEO pattern of causal accounting and analysts' forecast. Following Corwin and Schultz (2012), information uncertainty was coded as the average daily high-low spread estimated during the 90-day period prior to the conference call. *Restructuring* is an indicator variable that takes the value of one for non-zero restructuring costs as reported on a pre-tax basis in fiscal year *t*, and zero otherwise. *External Financing* is the sum of equity financing and debt financing scaled by total assets, measured in *t* + 1, following Ettredge et al. (2011). Equity financing equals the sales of common and preferred stock minus the purchases of common and preferred stock minus dividends. Debt financing equals long-term debt issued minus long-term debt reduction minus the change in current debt.

We controlled for litigation risk and audit quality. Following Francis et al (1994), *Litigation Risk* is an indicator variable that takes the value of one, if a firm is in a highly litigious industry (four-digit SIC industry codes 2833–2836, 3570–3577, 3600–3674, 5200–5961, or 7370–7374, and zero otherwise. For audit quality, *Big4* is an indicator variable that takes the value of one if a firm is a client of one of the Big 4 auditors, and zero otherwise; *Auditor Dismissal* is an indicator variable that takes the value of one if an auditor is dismissed in fiscal year *t*, and zero otherwise; *Auditor Tenure* is natural logarithm of the number of consecutive years during which the same auditor has audited a firm; *Material Weakness* an indicator variable that takes the value of 1 if the internal control opinion is qualified for a material weakness (as defined in SOX Sections 302 and 404), and zero otherwise.

Finally, we added fixed effects for *Industry* and *Year* to account for unknown industry and year-specific characteristics. Organization accounting data were retrieved from Compustat, price information was drawn from CRSP, and corporate governance data was drawn from Investor Responsibility Research Center and ExecuComp.

### 3.3. Results and discussion

Table 1 presents the means, standard deviations, and correlation matrix.<sup>3</sup> To test our hypotheses, we regressed our criterion variable (Analysts' Forecast Revision) on CEO causal account (i.e., internal net of external account), their two-way interaction term and the controls. The

results are given in Table 2. Model I is the baseline model without the variables of interest.

Model II includes CEO causal account, firm performance, and their interaction term. CEO accounts were coded such that larger (smaller) values signify more internal (external) accounts. Company performance for the quarter was coded such that larger values signified more favorable performance. When company performance is unfavorable, the main effect coefficient is significantly positive (coeff. = 0.169,  $p < 0.001$ ) as expected, supporting Hypothesis H1a. The interaction of *CEO Account* and *Company Performance* has a negative and significant coefficient (coeff. = -0.014,  $p < 0.05$ ). However, taking into account the main effect coefficient on *CEO account*, the combined slope nets out to  $0.019 - 0.014 = 0.005$ , which is not significantly different from zero ( $F(1, 2,402) = 2.68$ ,  $p = 0.102$ ).<sup>4</sup> In other words, when company performance is favorable, causal accounts have no discernable association with forecasts of future earnings, providing no support for H1b. Also noted in Model II, the slope of -0.014 for *CEO Account* × *Favorable* performance indicates that the effect of causal accounts on analysts' forecasts is smaller when the firm performs favorably vs unfavorably, supporting Hypothesis 1c. The R-squared of Model II is 14.04 %, which is an improvement of 1/5th over the 11.56 % in Model I, indicating that the variables of interest have meaningful explanatory power overall.

Fig. 3 depicts the results. The green line represents the effect of causal accounts when company performance is unfavorable, and it has a significant positive slope of 0.019 (95 % CI [0.007, 0.031]). The blue line represents the effect of causal accounts when company performance is favorable, and it has a slope of 0.005 (95 % CI [-0.001, 0.001]), indistinguishable from zero.

To test the robustness of the model, we conducted principal component analysis to develop alternative measures of the predictor variables. Because unfavorable and favorable performance are mutually exclusive, we conducted the principal component analysis for company-quarters with unfavorable performance separately from those with favorable performance. Using *Internal Accounts* and *External Accounts* as input variables, we identified one principle component for unfavorable performance with an eigenvalue > 1, labelled *AccountPC1*, and then interacted it with *Unfavorable Performance*, an indicator variable that equals 1 when performance is unfavorable and zero otherwise. Likewise, we identified one principle component for favorable performance, labelled *AccountPC2*, and interacted it with *Favorable Performance*, an indicator that equals 1 when performance is favorable and zero

<sup>3</sup> The mean of Analysts' Forecast is 0 because it was operationalized as residuals.

<sup>4</sup> The second degrees of freedom in the F-test is 2,402, which is much smaller than the sample size because of clustering at the firm level.

**Table 1**  
Study 1 Descriptive Statistics <sup>a</sup>

|    |                                      | Mean   | SD    | 1            | 2            | 3            | 4            | 5            | 6            | 7            | 8            | 9            | 10           | 11           | 12           | 13           | 14           | 15           | 16           | 17           | 18           | 19          | 20           | 21           | 22           |
|----|--------------------------------------|--------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|--------------|--------------|--------------|
| 1  | Analyst Forecast <sup>b</sup>        | 0.000  | 0.005 |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |             |              |              |              |
| 2  | CEO Account <sup>c</sup>             | 0.004  | 1.008 | <b>0.02</b>  |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |             |              |              |              |
| 3  | Company Perf <sup>d</sup>            | 0.702  | 0.457 | <b>0.25</b>  | 0.00         |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |             |              |              |              |
| 4  | AccountPC1 × Unfav Perf <sup>e</sup> | 0.002  | 1.208 | <b>-0.19</b> | <b>0.25</b>  | <b>-0.78</b> |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |             |              |              |              |
| 5  | AccountPC2 × Fav Perf <sup>f</sup>   | -0.002 | 1.104 | <b>0.14</b>  | <b>-0.50</b> | <b>0.59</b>  | <b>-0.46</b> |              |              |              |              |              |              |              |              |              |              |              |              |              |              |             |              |              |              |
| 6  | Unexpected Earnings <sup>g</sup>     | 0.001  | 0.024 | <b>0.25</b>  | 0.01         | <b>0.34</b>  | <b>-0.27</b> | <b>0.19</b>  |              |              |              |              |              |              |              |              |              |              |              |              |              |             |              |              |              |
| 7  | Size <sup>h</sup>                    | 7.168  | 1.456 | <b>0.16</b>  | <b>0.01</b>  | <b>0.11</b>  | <b>-0.09</b> | <b>0.08</b>  | <b>0.08</b>  |              |              |              |              |              |              |              |              |              |              |              |              |             |              |              |              |
| 8  | MTB <sup>i</sup>                     | 1.949  | 1.250 | <b>0.11</b>  | <b>-0.03</b> | <b>0.08</b>  | <b>-0.06</b> | <b>0.07</b>  | <b>0.05</b>  | <b>0.11</b>  |              |              |              |              |              |              |              |              |              |              |              |             |              |              |              |
| 9  | Sales Growth <sup>j</sup>            | 0.157  | 0.371 | <b>0.11</b>  | 0.01         | <b>0.08</b>  | <b>-0.06</b> | <b>0.05</b>  | <b>0.06</b>  | <b>0.02</b>  | <b>0.21</b>  |              |              |              |              |              |              |              |              |              |              |             |              |              |              |
| 10 | Company Age <sup>k</sup>             | 2.775  | 0.678 | <b>0.01</b>  | <b>0.03</b>  | <b>0.01</b>  | <b>-0.01</b> | 0.00         | 0.00         | <b>0.34</b>  | <b>-0.18</b> | <b>-0.16</b> |              |              |              |              |              |              |              |              |              |             |              |              |              |
| 11 | Governance <sup>m</sup>              | 3.076  | 1.165 | 0.00         | 0.00         | <b>-0.01</b> | <b>0.02</b>  | <b>-0.01</b> | <b>-0.01</b> | <b>-0.04</b> | <b>-0.06</b> | <b>-0.02</b> | <b>0.07</b>  |              |              |              |              |              |              |              |              |             |              |              |              |
| 12 | Manager Ability <sup>n</sup>         | 0.543  | 0.265 | <b>0.06</b>  | <b>-0.03</b> | <b>0.08</b>  | <b>-0.06</b> | <b>0.07</b>  | <b>0.06</b>  | <b>0.16</b>  | <b>0.28</b>  | <b>0.07</b>  | <b>0.03</b>  | <b>-0.05</b> |              |              |              |              |              |              |              |             |              |              |              |
| 13 | Manager Control <sup>o</sup>         | 0.563  | 0.193 | 0.00         | <b>-0.07</b> | <b>-0.01</b> | 0.00         | <b>0.03</b>  | <b>-0.01</b> | <b>-0.11</b> | <b>0.01</b>  | 0.00         | 0.00         | <b>0.03</b>  | <b>-0.05</b> |              |              |              |              |              |              |             |              |              |              |
| 14 | Inst Ownership <sup>p</sup>          | 0.498  | 0.395 | <b>0.05</b>  | <b>-0.07</b> | <b>0.05</b>  | <b>-0.04</b> | <b>0.06</b>  | <b>0.10</b>  | <b>0.07</b>  | <b>0.03</b>  | <b>-0.02</b> | <b>0.01</b>  | <b>0.05</b>  | <b>-0.01</b> | 0.01         |              |              |              |              |              |             |              |              |              |
| 15 | Quarter 4 <sup>q</sup>               | 0.205  | 0.404 | <b>-0.03</b> | 0.00         | <b>-0.01</b> | 0.01         | 0.00         | <b>-0.03</b> | <b>0.04</b>  | 0.01         | 0.01         | <b>0.02</b>  | <b>-0.02</b> | <b>0.01</b>  | <b>-0.03</b> | 0.01         |              |              |              |              |             |              |              |              |
| 16 | Bid Ask Spread <sup>r</sup>          | 0.002  | 0.004 | <b>-0.05</b> | <b>-0.01</b> | <b>-0.03</b> | <b>0.02</b>  | <b>-0.03</b> | <b>-0.02</b> | <b>-0.38</b> | <b>-0.04</b> | <b>-0.06</b> | <b>-0.13</b> | <b>-0.02</b> | <b>-0.04</b> | <b>0.02</b>  | <b>-0.06</b> | <b>-0.07</b> |              |              |              |             |              |              |              |
| 17 | Restructuring <sup>s</sup>           | 0.233  | 0.423 | <b>-0.06</b> | <b>-0.01</b> | 0.01         | <b>-0.01</b> | 0.00         | <b>0.08</b>  | <b>-0.13</b> | <b>-0.12</b> | <b>0.15</b>  | <b>0.04</b>  | <b>-0.05</b> | <b>-0.01</b> | <b>0.01</b>  | <b>0.04</b>  | <b>0.01</b>  | <b>0.01</b>  |              |              |             |              |              |              |
| 18 | External Financing <sup>t</sup>      | 0.006  | 0.128 | <b>-0.01</b> | <b>-0.02</b> | <b>-0.06</b> | <b>0.05</b>  | <b>-0.03</b> | <b>-0.05</b> | <b>-0.16</b> | <b>0.07</b>  | <b>0.19</b>  | <b>-0.15</b> | <b>0.02</b>  | <b>-0.06</b> | <b>0.03</b>  | <b>-0.05</b> | <b>-0.02</b> | <b>0.02</b>  | <b>-0.08</b> |              |             |              |              |              |
| 19 | Litigation Risk <sup>u</sup>         | 0.319  | 0.466 | <b>-0.01</b> | <b>0.02</b>  | <b>0.09</b>  | <b>-0.06</b> | <b>0.04</b>  | <b>0.03</b>  | <b>-0.13</b> | <b>0.24</b>  | <b>0.05</b>  | <b>-0.13</b> | <b>-0.07</b> | <b>0.09</b>  | <b>-0.04</b> | <b>-0.09</b> | <b>0.01</b>  | <b>0.14</b>  | <b>0.07</b>  | <b>0.02</b>  |             |              |              |              |
| 20 | Auditor BIG4 <sup>v</sup>            | 0.850  | 0.357 | <b>0.02</b>  | <b>-0.03</b> | <b>0.04</b>  | <b>-0.03</b> | <b>0.04</b>  | <b>0.03</b>  | <b>0.17</b>  | <b>-0.01</b> | <b>-0.05</b> | <b>0.06</b>  | <b>0.01</b>  | <b>-0.01</b> | <b>-0.02</b> | <b>0.22</b>  | <b>0.00</b>  | <b>-0.07</b> | <b>0.05</b>  | <b>-0.05</b> | <b>0.00</b> |              |              |              |
| 21 | Auditor Dismissal <sup>w</sup>       | 0.045  | 0.207 | <b>-0.01</b> | 0.01         | <b>-0.02</b> | <b>0.01</b>  | <b>-0.01</b> | <b>-0.01</b> | <b>-0.06</b> | <b>0.01</b>  | <b>0.01</b>  | <b>-0.01</b> | <b>-0.03</b> | <b>0.00</b>  | <b>0.01</b>  | <b>-0.02</b> | <b>0.03</b>  | <b>-0.01</b> | <b>0.02</b>  | <b>-0.01</b> | <b>0.02</b> | <b>-0.01</b> | <b>-0.04</b> |              |
| 22 | Auditor Tenure <sup>x</sup>          | 2.039  | 0.697 | 0.01         | 0.00         | <b>0.02</b>  | <b>-0.02</b> | <b>0.02</b>  | <b>0.01</b>  | <b>0.18</b>  | <b>-0.04</b> | <b>-0.08</b> | <b>0.26</b>  | <b>0.02</b>  | <b>0.00</b>  | <b>-0.03</b> | <b>0.04</b>  | <b>0.03</b>  | <b>-0.07</b> | <b>0.07</b>  | <b>-0.08</b> | <b>0.03</b> | <b>0.20</b>  | <b>-0.19</b> |              |
| 23 | Mat Weakness <sup>y</sup>            | 0.041  | 0.198 | <b>-0.04</b> | <b>0.02</b>  | <b>-0.05</b> | <b>0.05</b>  | <b>-0.03</b> | <b>-0.03</b> | <b>-0.11</b> | <b>-0.02</b> | <b>0.00</b>  | <b>-0.04</b> | <b>-0.04</b> | <b>-0.02</b> | <b>0.01</b>  | <b>-0.01</b> | <b>-0.01</b> | <b>0.06</b>  | <b>0.03</b>  | <b>0.00</b>  | <b>0.04</b> | <b>0.00</b>  | <b>0.08</b>  | <b>-0.05</b> |

Notes.

<sup>a</sup> N = 35,676. Bolded correlations are significant at the  $p < 5\%$  level. <sup>b</sup> Analyst forecast refers to the revision in forecast. Forecast Revision is the residual from regression of analysts' post-announcement forecast of the firm's EPS on pre-announcement EPS forecast.

<sup>c</sup> CEO accounts are coded such that higher numbers signify accounts that are more internal and less external.

<sup>d</sup> Company Perf is coded as 1 if actual EPS is greater than or equal to EPS consensus for the current quarter, and 0 otherwise.

<sup>e</sup> AccountPC1 × Unfavorable Perf is the first component from the principal component analysis of casual accounts for firm-quarters with unfavorable performance, interacted with an indicator that equals 1 when actual EPS is less than EPS consensus forecast. Higher numbers signify accounts that are more internal and less external.

<sup>f</sup> AccountPC2 × Favorable Perf is the first component from the principal component analysis of casual accounts for firm-quarters with favorable performance, interacted with an indicator that equals 1 when actual EPS greater than or equal to EPS consensus forecast. Higher numbers signify accounts that are less internal and more external.

<sup>g</sup> Unexpected earnings is the residual from regression of actual EPS on analyst EPS consensus forecast for the current quarter.

<sup>h</sup> Firm Size is the natural logarithm of market capitalization.

<sup>i</sup> MTB is the market value of the firm assets divided by their book value (Tobin's Q).

<sup>j</sup> Sales Growth is coded as the change in sales from the beginning of a year to the end of the same year.

<sup>k</sup> Company Age is the natural logarithm of the number of years since a firm's founding.

<sup>m</sup> Governance measured as entrenchment index (Bebchuk et al., 2009).

<sup>n</sup> Manager Ability measured based on Demerjian et al., (2013).

<sup>o</sup> Manager Control is based on the percentage of words spoken by the CEO on conference calls.

<sup>p</sup> Institutional Ownership is the percentage of firm's shares outstanding held by institutional holdings.

<sup>q</sup> Quarter 4 is coded as fourth fiscal quarter (1) and first, second, or third fiscal quarter (0).

<sup>r</sup> Bid Ask Spread is the average daily high-low spread estimated during the 90-day period prior to the conference call.

<sup>s</sup> Restructuring is an indicator variable that takes the value of one for non-zero restructuring costs as reported on a pre-tax basis (RCP) in fiscal year t, and zero otherwise.

<sup>t</sup> External Financing is the sum of equity financing and debt financing scaled by total assets, measured in  $t + 1$ , following Ettredge et al. (2011). Equity financing equals the sales of common and preferred stock (SSTK) minus the purchases of common and preferred stock (PRSTKC) minus dividends (DV). Debt financing equals long-term debt issued (DLTIS) minus long-term debt reduction (DLTR) minus the change in current debt (DLCC).

<sup>u</sup> Litigation Risk is an indicator variable that takes the value of one if a firm is in a highly litigious industry (four-digit SIC industry codes 2833–2836, 3570–3577, 3600–3674, 5200–5961, or 7370–7374, and zero otherwise, following Francis et al. (1994).

<sup>v</sup> Big4 is an indicator variable that takes the value of one if a firm is a client of one of the Big 4 auditors, and zero otherwise.

<sup>w</sup> Auditor Dismissal is an indicator variable that takes the value of one if an auditor is dismissed in fiscal year t, and zero otherwise.

<sup>x</sup> Auditor Tenure is natural logarithm of the number of consecutive years during which the same auditor has audited a firm.

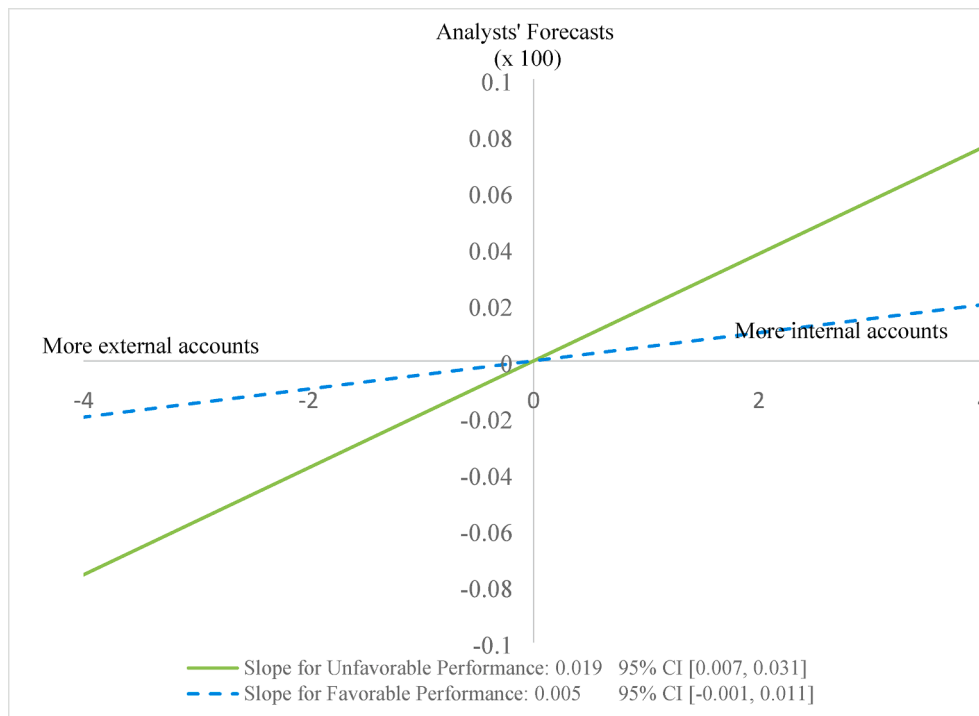
<sup>y</sup> Material Weakness is an indicator variable that takes the value of 1 if the internal control opinion is qualified for a material weakness (as defined in SOX Sections 302 and 404), and zero otherwise.



**Table 2**Study 1 regression results: Interactive Effects of Causal Accounts and Company Performance on Analysts' Forecast <sup>a,b</sup>.

|                         | Model I   |         | Model II <sup>c</sup> |         | Model III <sup>d</sup> |         |
|-------------------------|-----------|---------|-----------------------|---------|------------------------|---------|
|                         | Coeff     | SE      | Coeff                 | SE      | Coeff                  | SE      |
| CEO Account             |           |         | 0.019**               | (0.006) |                        |         |
| Company Perf            |           |         | 0.169***              | (0.007) | 0.191***               | (0.012) |
| Account × Perf          |           |         | −0.014*               | (0.007) |                        |         |
| AccountPC1 × Unfav Perf |           |         |                       |         | 0.008*                 | (0.004) |
| AccountPC2 × Fav Perf   |           |         |                       |         | −0.003                 | (0.002) |
| Unexpected Earnings     | 4.176***  | (0.317) | 3.174***              | (0.310) | 3.181***               | (0.310) |
| Size                    | 0.047***  | (0.003) | 0.041***              | (0.003) | 0.041***               | (0.003) |
| MTB                     | 0.020***  | (0.003) | 0.020***              | (0.003) | 0.020***               | (0.003) |
| Governance              | 0.012***  | (0.003) | 0.011***              | (0.003) | 0.011***               | (0.003) |
| Manager Ability         | 0.004     | (0.013) | −0.004                | (0.012) | −0.004                 | (0.012) |
| Manager Control         | 0.033*    | (0.015) | 0.035*                | (0.015) | 0.033*                 | (0.015) |
| Inst Ownership          | 0.023**   | (0.009) | 0.021*                | (0.008) | 0.021*                 | (0.008) |
| Quarter 4               | −0.028*** | (0.005) | −0.028***             | (0.005) | −0.028***              | (0.005) |
| Sales Growth            | 0.090***  | (0.010) | 0.075***              | (0.010) | 0.075***               | (0.010) |
| Bid Ask Spread          | 2.751**   | (1.021) | 2.616**               | (1.006) | 2.622**                | (1.006) |
| Restructuring           | −0.050*** | (0.009) | −0.048***             | (0.009) | −0.047***              | (0.009) |
| Company Age             | 0.003     | (0.006) | 0.003                 | (0.005) | 0.003                  | (0.005) |
| External Financing      | −0.035    | (0.027) | −0.014                | (0.026) | −0.014                 | (0.026) |
| Litigation Risk         | −0.018    | (0.012) | −0.026*               | (0.011) | −0.026*                | (0.011) |
| Auditor BIG4            | −0.017    | (0.010) | −0.018                | (0.010) | −0.018                 | (0.010) |
| Auditor Dismiss         | 0.001     | (0.013) | 0.002                 | (0.012) | 0.003                  | (0.012) |
| Auditor Tenure          | −0.002    | (0.004) | −0.001                | (0.004) | −0.002                 | (0.004) |
| Mat Weakness            | −0.035*   | (0.017) | −0.025                | (0.017) | −0.024                 | (0.017) |
| Constant                | −0.418*** | (0.030) | −0.482***             | (0.030) | −0.496***              | (0.031) |
| Industry fixed effects  | Yes       |         | Yes                   |         | Yes                    |         |
| Year fixed effects      | Yes       |         | Yes                   |         | Yes                    |         |
| R-squared               | 11.56 %   |         | 14.04 %               |         | 14.00 %                |         |

Notes.

<sup>a</sup> N = 35,676. Robust standard errors in parenthesis are clustered by firms. \*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05.<sup>b</sup> Analyst forecast refers to the revision in forecast. Forecast Revision is the residual from regression of analysts' post-announcement forecast of the firm's EPS on pre-announcement EPS forecast. To improve display of regression results, this variable has been multiplied by 100. For definition of other variables, see notes to Table 1.<sup>c</sup> Model 2: CEO Account is the standardized value of Internal Account minus the standardized value of External Account.<sup>d</sup> Model 3: Principal component analysis of Internal and External Accounts.**Fig. 3.** Study 1: Two-way interaction among causal account and firm performance predicting analysts' forecasts.

**Table 3**  
Study 2 Means, Standard Deviations, and Correlations.<sup>a</sup>

| Variable                            | M    | SD   | 1      | 2      | 3      | 4      | 5      | 6      | 7 | 8 | 9 |
|-------------------------------------|------|------|--------|--------|--------|--------|--------|--------|---|---|---|
| 1. Causal account <sup>b</sup>      | 1.49 | 0.50 |        |        |        |        |        |        |   |   |   |
| 2. Company performance <sup>c</sup> | 1.48 | 0.50 | 0.01   |        |        |        |        |        |   |   |   |
| 3. Analyst forecasts                | 0.84 | 0.11 | -0.10  | 0.52** |        |        |        |        |   |   |   |
| 4. CEO integrity                    | 3.87 | 0.66 | -0.14* | 0.13*  | 0.35** |        |        |        |   |   |   |
| 5. CEO competence                   | 3.32 | 0.63 | 0.15** | 0.33** | 0.23** | 0.30** |        |        |   |   |   |
| 6. CEO humility                     | 3.81 | 0.96 | -0.07  | 0.00   | 0.22** | 0.62** | 0.36** |        |   |   |   |
| 7. Information uncertainty          | 3.60 | 0.88 | 0.13*  | 0.02   | 0.07   | 0.24*  | 0.18** | 0.28** |   |   |   |

$p^* < 0.01$ ,  $p^{**} < 0.001$ , two-tailed test.

Notes.

<sup>a</sup>  $N = 307$ .

<sup>b</sup> Causal account is coded 1 (internal), 2 (external).

<sup>c</sup> Company performance is coded 1 (unfavorable), 2 (favorable).

**Table 4**  
Study 2 Moderated Mediation Results.

| Dependent variable: Perceived CEO Integrity   |                      |              |              |              |              |              |
|---|----------------------|--------------|--------------|--------------|--------------|--------------|
| R   | R <sup>2</sup>       | MSE          | F            | df1          | df2          | p            |
| 0.700   | 0.491                | 0.228        | 48.250       | 6            | 300          | 0.000        |
|   | Co-eff               | SE           | t            | p            | LLCI         | ULCI         |
| Constant  | 2.886                | 0.322        | 8.957        | 0.000        | 2.252        | 3.520        |
| Account   | -1.187               | 0.176        | -6.743       | 0.000        | -1.534       | -0.841       |
| Company Perf  | -0.882               | 0.176        | -4.993       | 0.002        | -1.230       | -0.534       |
| Account × Perf  | 0.674                | 0.110        | 6.115        | 0.000        | 0.457        | 0.891        |
| Competence  | 0.114                | 0.050        | 2.259        | 0.024        | 0.014        | 0.214        |
| Info Uncertainty  | 0.068                | 0.032        | 2.112        | 0.035        | 0.004        | 0.019        |
| Humility  | 0.501                | 0.044        | 11.398       | 0.000        | 0.414        | 0.587        |
| Test(s) of highest order unconditional interaction(s)   |                      |              |              |              |              |              |
|   | R <sup>2</sup> -chng |              | F            | df1          | df2          | p            |
| Account x Company Performance   | 0.063                |              | 37.395       | 1            | 513          | 0.000        |
| Conditional effects of the focal predictor at values of the moderator(s):   |                      |              |              |              |              |              |
| perf  | Effect               | se           | t            | p            | LLCI         | ULCI         |
| 1.000   | -0.513               | 0.079        | -6.424       | 0.000        | -0.670       | -0.356       |
| 2.000   | 0.161                | 0.077        | 2.068        | 0.039        | 0.007        | 0.314        |
| Dependent Variable: Projected Earnings Per Share Model Summary  |                      |              |              |              |              |              |
| R   | R <sup>2</sup>       | MSE          | F            | df1          | df2          | p            |
| 0.616   | 0.380                | 0.008        | 26.221       | 7            | 299          | 0.000        |
|   | Co-eff               | SE           | t            | p            | LLCI         | ULCI         |
| Constant  | 0.650                | 0.067        | 9.613        | 0.000        | 0.517        | 0.784        |
| Account   | -0.102               | 0.035        | -2.906       | 0.003        | -0.171       | -0.033       |
| Integrity   | 0.030                | 0.010        | 2.810        | 0.005        | 0.009        | 0.051        |
| Company Perf  | 0.028                | 0.034        | 0.826        | 0.409        | -0.039       | 0.095        |
| <b>Account x Perf</b>   | <b>0.056</b>         | <b>0.021</b> | <b>2.603</b> | <b>0.009</b> | <b>0.013</b> | <b>0.099</b> |
| Competence  | 0.000                | 0.009        | -0.061       | 0.951        | -0.019       | 0.018        |
| Info Uncertainty  | 0.000                | 0.006        | 0.052        | 0.958        | -0.011       | 0.012        |
| Humility  | 0.014                | 0.009        | 1.503        | 0.133        | -0.004       | 0.034        |
| Test(s) of highest order unconditional interaction(s):  |                      |              |              |              |              |              |
|   | R <sup>2</sup> -chng |              | F            | df1          | df2          | p            |
| CEO Account x Company Performance   | 0.014                |              | 6.777        | 1            | 299          | 0.009        |
| Company Performance   | Effect               | SE           | t            | p            | LLCI         | ULCI         |
| Low (1.000)   | -0.045               | 0.015        | -2.873       | 0.004        | -0.077       | -0.014       |
| High (2.000)  | 0.011                | 0.014        | 0.760        | 0.447        | -0.017       | 0.040        |
| Conditional indirect effects of CEO Accounts on Projected EPS at low (1.000) and high (2.000) Company Performance |                      |              |              |              |              |              |
| Performance   | Effect               | BootSE       | BootLLCI     | BootULCI     |              |              |
| Low (1.000)   | -0.015               | 0.006        | -0.029       | -0.003       |              |              |
| High (2.000)  | 0.004                | 0.003        | 0.001        | 0.011        |              |              |
| Index of moderated mediation (difference between conditional indirect effects):                                   |                      |              |              |              |              |              |
|   | Index                | BootSE       | BootLLCI     | BootULCI     |              |              |
| Company Performance   | 0.020                | 0.008        | 0.004        | 0.038        |              |              |

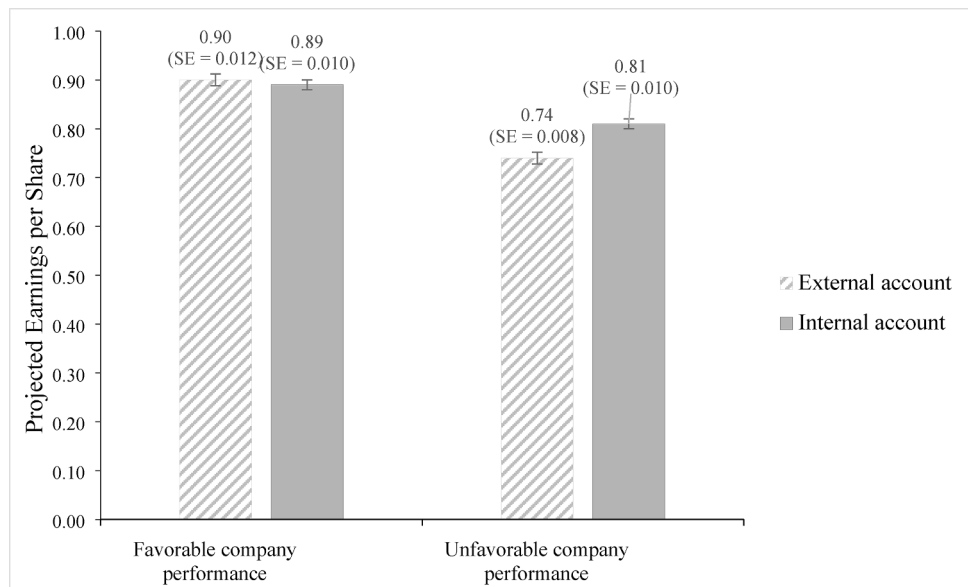


Fig. 4. Study 2: Two-way interaction of CEO accounts and company performance predicting analysts' forecasts.

otherwise. We used these two principal components as predictor variables, and the regression results are provided in Model III of Table 2. The findings are similar to those in Model II, with *AccountPC1* × *Unfavorable Performance* showing a significantly positive coefficient (0.008,  $p < 0.05$ ) while *AccountPC2* × *Favorable Performance* is not significant.

In summary, our hypotheses were partially supported by field data. When company performance was unfavorable, more internal causal accounts were associated with higher forecasts of future earnings (H1a). The effects of CEO accounts on analysts' forecast were stronger for unfavorable than favorable firm performance (H1c). However, H1(b) was not supported; when company performance was favorable, external accounts did not predict earnings forecasts. We discuss this point in our General Discussion.

Despite these findings, several limitations warrant consideration. In Study 1, the CEO account-giving measure was based on our content analysis, but we have no way of knowing whether analysts viewed the CEO's account-giving as we assumed. Second, endogenous relationships among the independent and dependent variables can confound the direction of causality. Our Study 1 design helped mitigate concerns about such endogenous relationships because of the lead-lag timing of the variables. Specifically, the independent variables involved the CEOs' accounts and the earnings performance in the quarter just completed, whereas the dependent variable was the change in analysts' forecasts about performance in the next quarter. Furthermore, analysts' forecasts are only given after the earnings announcement and the CEO's account pattern had occurred. However, it is still important to ensure endogeneity does not account for our proposed effects and test for cause-and-effect relationships. Third, replication of results is of growing importance in the organizational sciences due to such things as sampling bias, issues of reliability in measures, as well as to support the generalizability of one's findings (Pashler & Wagenmakers, 2012). We therefore conducted a follow-up experiment to test Hypothesis 2 and address these potential limitations.

## 4. Study 2

### 4.1. Method

#### 4.1.1. Sample

Participants consisted of 307 financial analysts across the United States recruited using Qualtrics data collection service (for a review, see Brandon et al., 2013) in late 2022. Based on the results of Study S1a and

1b reported in the Supplementary on-line Materials,<sup>5</sup> a small-to-medium effect size ( $f = 0.15$ ) with 90 % power yielded a target sample size of 300. Only participants from the following job titles were eligible to take part in the study: financial analyst, accountant, investment banker, stockbroker, investment trader, investment analyst, and equity researcher (analyst /associate). In addition to being screened for job title, participants were screened for (a) stock market activity ("I invest in the stock market as part of my business") and (b) personal experience in stock transactions, ("I personally research stock investments"). Anyone who answered "no" to either of these two items was screened out. Participants were further screened using two attention checks (e.g., "Please select '5' for your answer") and the data were further screened by Qualtrics for "straight-liners". Only data from participants who passed the screen tests and completed the entire survey were submitted to the researchers (i.e., no missing data). Respondents self-identified their roles as financial analysts (53.4 %), accountants (16.6 %), investment banker (11.7 %), stockbroker (4.6 %), investment trader (8.1 %), investment analysts (4.2 %) and equity researcher (1.3 %). Participants were 70.4 % male and 29.3 % female. One participant chose not to identify their gender. Their average age was 35.77 years ( $SD = 9.18$ ), and they had an average of 9.74 years ( $SD = 6.42$ ) of financial analysis experience.

### 4.2. Procedures

Participants completed the study online. They first read a script of an actual conference call from Study 1, which we modified to provide the study's manipulations (see Supplemental On-line Material). Participants were randomly assigned to a 2 (CEO internal v. external account) by 2 (company's performance: favorable v. unfavorable) factorial design. CEO accounts were coded 1 (*internal*) and 2 (*external*). Company's performance was coded 1 (*unfavorable*) and 2 (*favorable*). After reading the conference call transcript, they responded to the variables of interest, manipulation checks, and demographic information. Participants were informed that they would receive a payment of approximately \$40 (CAD) plus a bonus of \$10 for their accuracy. After completing the survey, however, all participants received \$50.

<sup>5</sup> We initially conducted a study exploring the leader's reputation for account-giving that generally supported our predictions but had various limitations. For transparency we provided full details in the Online Supplement.

#### 4.2.1. Measures

**Manipulation checks.** To test whether the company performance manipulation was effective, participants responded to the following item: “How did the company perform relative to analysts’ forecasts?” Responses consisted of a 5-point Likert-type scale ranging from 1 (*highly unfavorable*) to 5 (*highly favorable*). The CEO account manipulation check consisted of the item: “The explanation that the CEO provided for the company’s performance can be best described as an:” 1 (*internal explanation*) to 5 (*external explanation*).

**Analysts’ forecast.** Consistent with Study 1, we measured analysts’ forecast of the firm’s EPS. Participants responded to the following item: “Please provide an estimate of the HCX Q4 EPS. They used a slider ranging from a low of \$0.40 to a high of \$1.20. The slider also denoted the current EPS (\$0.80) as “the current EPS.”<sup>6</sup>

**Perceived integrity.** Following previous research (Kim et al., 2006), CEO perceived integrity was measured using Mayer and Davis (1999) 6-item integrity measure focusing on the CEO as the target of the ratings. Examples included: “I would never have to worry whether the CEO would stick to his or her word” and “Sound principles seem to guide the CEO’s behavior.” Participants responded to a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The items were averaged to form the measure, such that higher values indicated higher levels of the CEO’s perceived integrity ( $\alpha = 0.71$ ).

**Control variables.** We considered that higher (versus lower) financial performance could potentially be attributed to the CEO’s *perceived competence*. Thus, to account for this alternative explanation, and to control for the potential for a general positive impression of internal accounts, we controlled for perceptions of the leader’s competence. We used Mayer and Davis (1999) 6-item capability measure reworded to focus on the CEO. Sample items include: “The CEO is very capable of performing the job”; “I feel very confident about the CEO’s skills”. Participants responded to a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The items were averaged such that higher values indicated higher levels of the leader’s perceived competence ( $\alpha = 0.85$ ).

We also controlled for analysts’ perception of *information uncertainty*, defined as “ambiguity with respect to new information for a firm’s value” (Zhang, 2006a p. 567). As explained above, internal accounts can raise perceptions that the CEO understands the company’s internal workings, which can positively influence analysts’ forecasts. Studies typically use company-level factors such as dispersion in forecasts in analysts’ valuation (Zhang, 2006b) and bid-ask spread (Corwin & Schultz, 2012) as measures of information uncertainty. The validity of this approach is limited, however, because it does not directly assess analysts’ actual perceptions of information uncertainty. Because a direct measure of information uncertainty did not currently exist, we developed a six-item scale based on the definitions provided by accounting and finance researchers (Beneish et al., 2008; Cheng et al., 2011; Zhang, 2006a, 2006b) and refined for our context. Examples included: “Considerable ambiguity exists with respect to the company’s value”; “In my assessment, the dispersion in analyst earnings forecasts is likely to increase”. Participants responded using a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) ( $\alpha = 0.89$ ). The items were averaged and coded such that higher values indicated less information uncertainty. Last, to account for alternative explanations for the effects of CEO accounts on analysts’ forecasts, we controlled for analysts’ perceptions of the CEO’s *humility*. Humility was measured using a 19-item validated scale by Ou et al. (2014) ( $\alpha = 0.93$ ).<sup>7</sup>

<sup>6</sup> We also asked participants to forecast whether the EPS would increase or decrease. The results are identical to those reported here. We report actual forecasts of EPS as a more rigorous dependent variable.

<sup>7</sup> We also controlled for CEO trustworthiness, ethicality, and transparency. The results held with and without these controls, hence we report the results without the added controls.

#### 4.3. Results and discussion

Analysis of Variance (ANOVA) results showed participants rated the company performance manipulation check higher in the favorable ( $M = 4.13$ ;  $SD = 0.66$ ) than unfavorable ( $M = 3.12$ ;  $SD = 1.13$ ) performance condition,  $F(1, 305) = 90.30$ ,  $p = 0.001$ ,  $\eta_p^2 = 0.22$ . Participants also rated the CEO accounts manipulation check higher in the external ( $M = 4.07$ ;  $SD = 0.76$ ) than internal ( $M = 2.46$ ;  $SD = 0.75$ ) condition,  $F(1, 305) = 345.35$ ,  $p = 0.001$ ,  $\eta_p^2 = 0.53$ . We concluded that the manipulations were effective and in the intended direction.

The means, standard deviations, and correlations of the study variables are given in Table 3. Table 4 provides results for all analyses including controls. As shown in bold, the interaction of Account  $\times$  Performance was a significant predictor of Projected EPS ( $b = 0.056$ ,  $p = 0.009$  (95 %  $CI = 0.013, 0.099$ ) after inclusion of the control variables. Fig. 4 depicts the results of the two-way interaction between CEO causal account and company performance predicting analysts’ forecasts, which was significant  $F(1, 303) = 14.70$ ,  $p < 0.001$ ,  $\eta_p^2 = 0.046$ . Comparing analysts’ forecasts at low and high performance, when company performance was unfavorable, analysts’ forecasts was higher for internal versus external accounts ( $M = 0.81$ ,  $SD = 0.09$  versus  $M = 0.74$ ,  $SD = 0.07$ ,  $F(1, 153) = 23.89$ ,  $p < 0.001$ ,  $\eta_p^2 = 0.135$ ), supporting H1a. This difference was not significant when the company performed favorably ( $M = 0.89$ ,  $SD = 0.09$  versus  $M = 0.90$ ,  $SD = 0.10$ ,  $F(1, 150) = 0.95$ ,  $p = 0.33$ ,  $\eta_p^2 = 0.006$ ). Thus, H1b was again not supported. Table 4 shows the conditional effect of accounts on EPS was significant only when the company performed unfavorably, supporting H1C.

Hypothesis 2 stated CEO integrity mediates the effect of CEO accounts on analysts’ forecasts, with the mediation effects expected to be stronger when company performance was unfavorable versus favorable. We tested this hypothesis using Preacher et al. (2007) moderated mediation macro (Model 8) using 10,000 resamples. Control variables included perceptions of the CEO’s competence, aspects of the CEO’s character (humility, transparency, ethicality, trustworthiness), and information uncertainty. The results are given in Table 4.

The index of moderated mediation was significant ( $b = 0.020$ ,  $SE = 0.008$  (95 %  $CI = 0.004, 0.038$ ). When the company performed favorably, the indirect effect of CEO account on analysts’ forecasted EPS via perceived CEO integrity was  $b = 0.004$ ,  $SE = 0.003$  (95 %  $CI = -0.001, 0.011$ ). Because the confidence intervals included zero, CEO integrity was deemed non-significant as a mediator when firm performance was favorable. When the firm performance was unfavorable, in contrast, the indirect effect of CEO accounts predicting forecasted EPS via perceived CEO integrity was  $b = -0.015$ ,  $SE = 0.006$ , (95 %  $CI = -0.029, -0.003$ ). Thus, CEO integrity was a significant mediator in the effect of account on EPS when the company performed unfavorably, but not when the company performed favorably, supporting Hypothesis 2. Importantly, the results held after controlling for numerous alternative theoretical explanations for our theory. It is important, however, to note that the direct effects were still significant in the presence of significant indirect effects, indicating partial rather than full mediation.

In addition to EPS, we asked participants to forecast the company’s future stock price in four weeks. The results mirrored the findings reported for EPS and are provided in the Supplementary On-line Material.

#### 5. General discussion

Despite growing media attention and research on the importance of leaders holding themselves accountable for their company’s performance, empirical evidence shows that when reporting their company performance to the financial community, CEOs instead tend to attribute favorable outcomes to themselves and unfavorable outcomes to external factors. Studies on the actor-observer asymmetry, however, suggest observers can have the opposite view and tend to attribute favorable outcomes to situational factors and unfavorable outcomes to the actor. In terms of advancing theory, our findings contribute to consensus-



shifting by challenging this common practice of self-serving account-giving and comparing it to the actor-observer perspective. This integrative perspective contributes important findings to research, as CEO accounts are a highly relevant factor in determining the valuation of a company by analysts, whose job it is to understand and help interpret a company's activities and performance for investors. Financial analysts are essential intermediaries between the company and its investors; the forecasts they provide have considerable influence on the company's ability to raise capital and the demand for and the price of a company's shares. While considerable theory and research has explored how firm- and industry-level factors relate to financial analysts' evaluation of a company's value (e.g., Bowen et al., 2008), relatively less is known about how CEO accounts affect external stakeholders' perceptions of and judgments on a company's value. Our research also responds to the suggestion brought forth by Waldman et al. (2019) that accountability research should focus on both negative and positive outcomes to determine how taking account for each might be construed by different stakeholders, and what the impact would be on their evaluations of the leader and the firm.

The present paper makes three important contributions to research on leadership accounts, company valuation, and perceived integrity. First, although previous behavioral integrity research reports that benefits can accrue when a leader delivers on promises, less is known about the consequences of occasions when the results do not meet the expectations as previously set out by the leader. One common result of unfavorable company performance is that stakeholders (e.g., analysts) will lower their valuation of the company (e.g., their forecast). As seen in Figs. 3 and 4, this lowering of company forecast for unfavorable company performance was less severe when CEOs took responsibility for these outcomes via their causal accounts. Importantly, and consistent with attribution research (e.g., Weiner, 1986), the differences between the accounts becomes non-significant when company performance is favorable. In addition, deflecting responsibility for unfavorable performance appears to weigh on analysts' judgments the most, more so than CEOs taking credit for favorable performance.

Second, we extend theory by proposing that providing internal accounts for unfavorable outcomes is likely to be rewarded by analysts because they align with the analysts' view of the situation and in doing so, the leader is evaluated as having more integrity. The relationships, however, are more complex than simply saying "more is always better." Internal CEO accounts resulted in higher perceived CEO integrity only under the condition where internal accounts were potentially costly to the sender, namely, when the company performed unfavorably. We theorize that although the CEO might view internal accounts for unfavorable performance as costly, they are deemed more credible and reflect the quality of the CEO, potentially offering significant benefits to the CEO's reputation. Although previous research shows that accountability relates to integrity and trust among employees (e.g., Thomas et al., 2002), the present research suggests these effects also extend to external stakeholders.

Third, in addition to showing CEO accounts can impact perceived CEO integrity, our results also show that higher CEO integrity can result in higher analysts' forecasts. We propose that analysts observe the way CEOs explain their companies' performance at a more than surface level; causal accounts reveal something real about a CEOs' integrity, character, and how they manage the company. These findings are reflected in our supplemental studies where we explored account patterns as opposed to individual instances of reporting events, thus this effect is more than a one-time public relations exercise and CEOs who more often engage in such accounts will have the predicted effects. Our conclusion is not that analysts will be biased to be more favorable or unfavorable when CEOs display one account or another, but that analysts on average correctly give higher (lower) forecasts that correspond to a higher (lower) quality CEO, which has implications for the company's financial value.

We note that Hypothesis 1b, proposing that analysts would provide

higher forecasts for external (versus internal) accounts when the firm performs favorably, was not supported in either study. These results are consistent with evidence showing observers weigh negative (versus positive) information more heavily, especially in decisions involving risk (Baumeister et al., 2001; Graham et al., 2005; Mishina et al., 2010). The results affirm Malle (2006) meta-analysis reporting weak support for the actor-observer asymmetry when outcomes were positive as opposed to negative. We speculate that in the present context, analysts tend to have relatively more information about a firm's external environment than its internal workings, thus external accounts simply carry less novel information and have less impact on their forecasts. Another possible explanation is that when the company performs favorably, analysts' concerns about risk are lowered, lessening the attention paid to CEO accounts. Which explanation is most efficacious warrants further study.

Although our research focuses on leaders and analysts judging their performance, our conceptual model is relevant to a variety of leaders, organizations, and external stakeholders. Examples include how senior leaders with political appointments account for policies and legislation and how they attribute economic growth (or lack of growth) in their regions or nations. In terms of the "analyst" role here, this can include voters, donors, and volunteers, as well as the pundits who support or reject them as candidates. Similarly, we could apply our conceptual model to coaches in college or professional sports, who regularly provide accounts for wins and losses, which for most sports today, have significant consequences on how coaches are judged, compensated, and retained by their teams/institutions. "Analysts" in this context would refer to people who might support these athletic programs, including fans, sports casters, recruiters, investors, and agents working to bring athletes to their teams. In short, our model should be tested for its relevance wherever external stakeholders evaluate a leader's account of an organization's performance.

### 5.1. Financial and practical implications

One of our unique contributions is to quantify the financial implications of a CEO's account-giving. In Study 1, when company performance was unfavorable, an account that is 1 SD internal versus 1 SD external account resulted in higher projected earnings of approximately 3.83 % ( $2SD \times 1.008/SD \times 0.019$  coeff., see Tables 1 and 2).<sup>8</sup> In Study 2, the CEO's internal account amid unfavorable company performance resulted in an 8.6 % higher projected EPS (\$0.07/\$0.81). These effects are non-trivial to a firms' value (Stickel, 1985).

In terms of practical implications, CEOs should be encouraged to hold themselves accountable when the company performs poorly because analysts are likely to view this as a reflection on their integrity. The leader's perceived integrity seems to be most vulnerable when the potential costs of doing so are high. We do not propose that CEOs fabricate an internal explanation when an external account is more accurate. However, the tendency to blame external factors for unfavorable performance might not fare well with astute external observers not just in terms of analysts, but across a variety of domains of leadership from coaching to politics.

### 5.2. Strengths, limitations, and future research

The studies reported here and in the additional Supplemental On-line Material complemented each other in several respects. Study 1 tested *whether and when* CEO accounts are more likely to relate to higher analysts' forecasts, and Study 2, as well as Supplemental S1a and S1b, together explored *why and how* these effects occur. Our studies also

<sup>8</sup> The dependent variable is EPS forecast revision deflated by stock price, scaled up by 100. For a company with an annual price-to-earnings (P/E) ratio of 25, the quarterly P/E ratio is 100, so the factors of 100 cancel out. The 0.019 coefficient is therefore equivalent to 1.9% of earnings.

complemented each other in terms of (a) the use of archival data, where the variables were measured, and in follow-up experimental designs where the variables were manipulated; (b) analysts' forecasts were operationalized in different ways: projected EPS in Studies 1 and 2, and projected share price (Study 1b Supplemental On-line Material); (c) the data were drawn from qualified participants; and (d) different companies and industries were studied. For instance, whereas Study 1 comprised a broad set of industries, the experiments consisted of technology (Study 2), beverage (Study S1a) and hardware (Study S1b) sectors. Furthermore, significant results were observed after controlling for numerous alternative explanations, bolstering our contribution to promoting consensus building on prior research and advancing theory. Finally, the results were consistent across studies, raising confidence these findings did not occur by chance.

Our findings should also be interpreted considering several potential limitations. Analysts' forecasts can be influenced by numerous factors including the CEO's vision (Fanelli et al., 2009), style (e.g., being charismatic, innovative, adaptable) (Grant et al., 2018; Waldman et al., 2001), communication tone (Henry & Leone, 2016) and affect (Mayew & Venkatachalam, 2012). These factors were not controlled in the present studies. Also, the content analysis in Study 1 used words (I, me) to measure internal accounts that can also signal CEO narcissism, typically viewed as a negative leadership quality. Future research needs to consider how causal accounts relate to analyst forecasts considering these factors. Also, Barton and Mercer (2005) showed that higher earnings forecasts and stock valuations occurred when external accounts were deemed plausible (see also Kimbrough & Wang, 2014). We did not include a measure of account plausibility in our studies, which could be included in future research. Also, although our measure of information uncertainty was developed based on prior research, its validity as a psychological construct warrants empirical testing and further development. Also, in Study 2, participants used a sliding scale for the forecasts, which might have influenced their responses one direction or another. Their forecasts, however, showed a normal distribution with no indication of skew, so this does not appear a concern in these data.

Beyond the opportunity to address the potential limitations, the present research opens several new avenues for study. For example, during conference calls, it is not uncommon for the CEO to present alongside a team of other corporate executives (e.g., CFO, COO), and differentiating their collective contribution to the call is difficult to discern in the data we had available. However, given the level of typical coordination among the top management team (TMT) in preparing quarterly reports for analysts, we would expect the executive team to provide similar accounts in their presentations. Nevertheless, future research should examine not only the CEOs, but also the additional impact of TMT accounts on analysts' forecasts.

Second, numerous factors can affect how external audiences assess CEO integrity, including how they treat employees and stockholders (Wang et al., 2019), how they handle crises, and their track record on such things as the environment, corporate social responsibility, equity diversity, and inclusion. Also, many macro factors such as strategy, operational excellence, industry dynamics, and larger economic factors could potentially impact these results. Research is also needed to explore whether analysts' characteristics, including their industry experience and expertise, could moderate these results. Each of these factors warrant study.

Third, in recent years, online video disclosures are becoming increasingly common, especially for non-professional investors (Basoglu & Hess, 2014). Elliott et al. (2012) found that CEO presentations had stronger effects on investment recommendations when an online video was used compared to a text-based press release. Hence, our text-based research may provide a conservative test of our hypotheses. Last, future research needs to explore whether our findings generalize beyond professional analysts to other "infomediaries" such as journalists and social-movement groups (König et al., 2018; Washburn & Bromiley, 2014; Westphal & Deephouse, 2011), who can impact how the company is

viewed by its various stakeholders.

In conclusion, in both an archival field study and experiments we find different CEO accounts result in higher analysts' forecast as a function of company performance. Self-serving accounts (external accounts for unfavorable performance) relates to lower analysts' forecasts in comparison to accounts that reflect the actor-observer perspective (internal accounts for unfavorable performance). We also show that the latter approach to CEO account-giving positively affects perceived CEO integrity, which in turn has a positive effect on analysts' forecasts. Differences in account-giving approaches were observed only under conditions of unfavorable (versus) favorable company performance.

## CRediT authorship contribution statement

**Daniel Skarlicki:** Conceptualization, Methodology, Writing – original draft, Formal analysis. **Kin Lo:** Conceptualization, Methodology, Writing – review & editing. **Rafael Rogo:** Data curation, Formal analysis. **Bruce J. Avolio:** Conceptualization, Writing – review & editing. **CodieAnn DeHaas:** Writing – review & editing.

## Funding

This research was supported by the Social Sciences and Humanities Research Council of Canada (SSHRC) awarded to the first author Grant Number: 435-2022-0280.

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Data availability

Data will be made available on request.

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