SILVER BULLET OR RICOCHET? CEOS' USE OF METAPHORICAL COMMUNICATION AND INFOMEDIARIES' EVALUATIONS

Andreas König
University of Passau, Germany
andreas.koenig@uni-passau.de +49 851 509 2510

Jan Mammen
University of Erlangen-Nuremberg, Germany
jan.mammen@fau.de +49 911 5302 314

Johannes Luger
Copenhagen Business School, Denmark and
University of St. Gallen, Switzerland
jtl.smg@cbs.dk +45 38153030

Angela Fehn
University of Bamberg, Germany
angela.fehn@uni-bamberg.de +49 951 863 2670

Albrecht Enders
IMD International, Switzerland
albrecht.enders@imd.ch +41 21 6180568

Accepted for publication at the Academy of Management Journal

We gratefully acknowledge helpful guidance and thoughtful comments from Associate Editor Scott Graffin and three anonymous reviewers. We are thankful to Mary Benner, Jonathan Bundy, Craig Crossland, Angelo Fanelli, Thorsten Grohsjean, Donald Hambrick, Carolin Häussler, Nathan Hiller, Harald Hungenberg, Nadine Kammerlander, Vilmos Misangyi, Timothy Quigley, and Martin Weiss, as well as to participants at the 2012 Meeting of the Strategic Management Society in Prague, the 2012 VHB Meeting in Bolzano, and the 2013 Annual Meeting of the Academy of Management for comments on earlier versions of this manuscript. Furthermore, we greatly thank Yevgen Aba, Andreas Blank, Falk Bösecke, Katharina Boxleitner, Magdalena Brettner, Beatrix Burg, Christian Faller, Theresa Fehn, Alexander Ixmeier, Moritz Jenisch, Imke Krause, Junheng Liu, Christian Mende, Michael Mikesky, Daniela Nitschke, Daniel Nowak, Rainer Oehlmann, Verena Komander, Heribert de Oliveira Kuhn, Philipp Schmidt, André Steinbacher, Joanna Walton, Alexander Wessels, and Michael Wiedermann for research assistance during this project. Tina Pedersen, Beverley Lennox, Susan Stehli, and Lindsay McTeague provided editing support and Lorenz Graf-Vlachy developed text analysis software. We are grateful for the generous support for parts of this research from the Theo and Friedl Schöller Foundation, Germany, and the Swiss National Science Foundation (grant no. SNF 157026). An earlier version of this paper received the Glueck Best Paper Award from the Business Policy and Strategy Division of the Academy of Management and was published in the Academy of Management Best Paper Proceedings.

SILVER BULLET OR RICOCHET? CEOS' USE OF METAPHORICAL COMMUNICATION AND INFOMEDIARIES' EVALUATIONS

ABSTRACT

We combine literature on rhetoric and socially situated sensemaking to illuminate the challenges that emerge when chief executive officers (CEOs) try to influence infomediaries by using metaphorical communication—figurative linguistic expressions that convey thoughts and feelings by describing one domain, A, through another domain, B. Specifically, we theorize that, because different infomediaries are situated in different thought worlds, CEOs' use of metaphorical communication has contradictory effects on journalists' and securities analysts' evaluations: While it triggers more favorable statements from journalists, it prompts more unfavorable assessments from analysts. Moreover, we integrate findings from cognitive psychology to argue that these contradictory effects increase the more a firm's performance falls behind market expectations. Our hypotheses find support in an extensive analysis of 937 quarterly earnings calls in the U.S. pharmaceutical, hardware, and software industries, and of journalists' statements and analysts' earnings forecasts and recommendations. Our novel theorizing and findings suggest that the use of discursive frames, especially in the form of metaphorical communication, in firms' interactions with critical audiences creates thought-provoking and thus far neglected dilemmas. In developing and testing these thoughts, we contribute to and link ongoing conversations in management science, especially discussions of organizational reputation, executive communication, and impression management.

Keywords: CEO, metaphorical communication, infomediary, securities analyst, journalist, rhetoric, impression management

One of the vital tasks of a chief executive officer (CEO) is to communicate with infomediaries, such as journalists, analysts, and social-movement groups (Fanelli, Misangyi, & Tosi, 2009; Gao, Yu, & Cannella, 2015; Washburn & Bromiley, 2014; Westphal & Deephouse, 2011). Infomediaries inform specific audiences and the broader society about firms and, thereby, strongly influence firms' social approval, reputation, and legitimacy (Pfarrer, Pollock, & Rindova, 2010; Rindova & Fombrun, 1999; Shoemaker & Reese, 1996). The CEO's job in the firm-infomediary relationship is that of a critical sensegiver who ensures that the narrative received and forwarded by infomediaries is one that is benevolent toward the firm and consistent with the goals of the enterprise as a whole (Fanelli et al., 2009). This job is challenging because details about the firm are abundant, highly complex, and ambiguous, and a CEO typically has relatively little time to communicate directly with infomediaries and guide their interpretations (Giorgi & Weber, 2015; Healy & Palepu, 1995). As such, CEOs are hard-pressed not only to carefully select the details they wish to share with infomediaries but also to package that information in a way that reduces complexity, and swiftly and subtly steers infomediaries' attention toward a positive interpretation.

Of all of the persuasive techniques included in the canon of rhetoric (Corbett & Connors, 1998), one device appears to be particularly well suited for addressing this challenge: metaphorical communication. "Metaphorical communication [denotes all] figurative linguistic expressions that convey thoughts and feelings by describing one domain, A, through another domain, B" (König, Fehn, Puck, & Graf-Vlachy, 2017: 271), where domain A is typically an unfamiliar, difficult-to-grasp domain of knowledge and domain B is a familiar, concrete domain of knowledge (Lakoff & Johnson, 1980). For example, Warren Buffett (1985) explained the closure of Berkshire Hathaway's textile operations using metaphorical communication:

> [A] good managerial record … is far more a function of what business boat you get into than it is of how effectively you row … Should you find yourself in a chronically-leaking boat, energy devoted to changing vessels is likely to be more productive than energy devoted to patching leaks.

As highlighted by an extensive body of cognitive linguistics and organization studies (e.g., Antonakis, Fenley, & Liechti, 2011; Johnson & Lakoff, 2002; Mio, Riggio, Levin, & Reese, 2005; Ortony, 1975; Thibodeau & Boroditsky, 2011), metaphorical communication is a structural form of "discursive framing" (Cornelissen & Werner, 2014: 183) that can enable communicators to simplify messages, steer receivers' awareness, and strengthen receivers' positive attitudes toward the communicated message (for an overview, see Landau, Meier, & Keefer, 2010). Not surprisingly, therefore, a host of publications advise CEOs to use metaphorical communication to convey messages to important audiences (e.g., Antonakis, Fenley, & Liechti, 2012; Gavetti & Rivkin, 2005; Heath & Heath, 2007), arguing that it makes "something as complex, impersonal, and abstract as finance or business […] sound simple, human, and concrete" (Leith, 2014).

And yet: Is metaphorical communication really so conducive to CEOs' sensegiving toward infomediaries? There is indeed reason to suspect that CEOs and their firms might not always benefit from using metaphorical communication. Most importantly, cognitive linguists indicate that metaphorical communication might entail critical pitfalls because it compares two domains of knowledge (e.g., "business" and "seafaring" in Buffett's quote above) that are socially constructed and, a priori, never fully correspond (Black, 1962; Ibáñez & Hernández, 2011; Steen, 2011). As a result, metaphorical communication is inherently imprecise and ambiguous (for overviews, see Ramsay, 2004, and Shenkar, Luo, & Yeheskel, 2008). This could be crucial in the context of CEOs' communication with infomediaries: although some infomediaries might prefer less precise but easy-to-grasp figuratively conveyed information, others might respond more

favorably to detailed and precise literally transmitted information. Thus, intricate paradoxes could arise because the same aspects of metaphorical communication that appeal to certain infomediaries might induce other infomediaries to be more skeptical. Given that CEOs' public communication is received by multiple audiences (Gao et al., 2015), these paradoxes could have detrimental effects on the firm's approval among constituents.

In this paper, we aim to illuminate this dilemma by asking: How does the degree to which a CEO uses metaphorical communication affect the favorability of different infomediaries' assessments of the CEO's firm? To address this question, we envision infomediaries as socially situated, "constituent-minded" arbiters (Wiesenfeld, Wurthmann, & Hambrick, 2008), as they make sense of the CEO's sensegiving through the prism of giving sense to their own audiences. Moreover, we expect infomediaries' assessments to be biased by their tendency to reduce cognitive effort (Taylor, 1981), and by the norms and conventions of sensemaking and sensegiving in infomediaries' respective fields (Lamin & Zaheer, 2012). From these premises, we deduce that different infomediary groups, because their audiences differ profoundly, develop idiosyncratic preferences regarding CEOs' use of metaphorical communication.

To elaborate on our theory, we focus on two particularly important groups of infomediaries: journalists[1] and securities analysts[2]. More specifically, we hypothesize that journalists report more favorably on a firm the more a CEO uses metaphorical communication because journalists can tap into the familiar concepts evoked by such communication when writing for their mainstream audience. In contrast, we argue that analysts assess a firm less favorably the more the respective CEO uses metaphorical communication because analysts are socially situated in a

[1] We use the term "journalists" to denote those infomediaries who cover, among other areas, economic issues on behalf of the "main street" (Lamin & Zaheer, 2012). As such, we focus on generalist (business) journalists and exclude highly specialized infomediaries who report, e.g., in industry-focused media outlets (Petkova et al., 2013).

[2] In the following, we use "analysts" and "securities analysts" interchangeably.

fact-oriented "thought world" (Lamin & Zaheer, 2012: 47), and prefer detailed, unambiguous information when writing for their investor audience. By extension, we integrate findings from cognitive psychology (Baumeister, Bratslavsky, Finkenauer, & Voss, 2001) to propose that journalists' and analysts' biases related to CEOs' use of metaphorical communication intensify the more the focal firm's performance negatively deviates from market expectations.

We manually coded 937 quarterly earnings conference calls to assess CEOs' use of metaphorical communication in the U.S. pharmaceutical, hardware, and software industries from 2002 to 2011. We find support for our hypotheses when testing the effect of CEOs' use of metaphorical communication on 25,415 hand-coded statements from journalists, 6,969 analysts' earnings per share (EPS) forecasts, and 393 analyst buy-hold-sell recommendations.

Our study makes several contributions. First, we go beyond prior work on executives' strategic public language (e.g., Fanelli et al., 2009; Guo, 2014; McDonnell & King, 2013; Washburn & Bromiley, 2014) and CEO-infomediary relations (e.g., Westphal, Park, McDonald, & Hayward, 2012) by showing that the degree to which CEOs use metaphorically structured discursive frames—rather than merely the amount and content of information they provide—affects firms' approval among important constituents. Second, we add to the emerging conversation on the contextualized implications of the metaphorical communication used by corporate leaders (Cornelissen, Holt, & Zundel, 2011; König et al., 2017). In particular, we provide and preliminarily substantiate explanations for why metaphorical communication might not be a rhetorical "silver bullet" for CEOs, but can instead ricochet when CEOs use it to give sense towards certain types of audiences. Third, we add a new, rich lens to the recently intensifying debate on the potentially paradoxical role of rhetoric in firms' communication with a diverse set of infomediaries (e.g., Lamin & Zaheer, 2012; Zavyalova, Pfarrer, & Reger, 2016).

CEOS AND INFOMEDIARIES: THE FOCAL ROLE OF DISCURSIVE FRAMING

Research has long highlighted that a central task of chief executives is to construct meaning for internal and external constituents through verbal communication (Gao et al., 2015; Mintzberg, 1973). Such sensegiving (Gioia & Chittipeddi, 1991) is particularly important in CEOs' interactions with infomediaries (Deephouse & Heugens, 2009)—third-party actors who mediate and broker between firms and their external audiences by collecting, interpreting, and disseminating firm-related information (Shoemaker & Reese, 1996). Infomediaries are focal addressees of CEO communication because they strongly influence a firm's social and economic approval (Zavyalova, Pfarrer, Reger, & Shapiro, 2012), and often exert pressure on firms and their leaders (Benner & Ranganathan, 2012). Overall, enticing infomediaries to report favorably on a firm by influencing how they (re)construct meaning regarding the enterprise is a core objective for CEOs (Pfarrer et al., 2010; Rindova & Fombrun, 1999).

We assume that a key element of CEOs' sensegiving towards infomediaries is "discursive framing" (Cornelissen & Werner, 2014: 183; see also Gioia & Chittipeddi, 1991; Fiss & Zajac, 2006). As suggested in the social movement and communication literature (Benford & Snow, 2000; Entman, 1993), discursive frames are interpretive lenses that actors strategically evoke through their communication in order to shape meaning, mobilize support, and gain legitimacy (Cornelissen & Werner, 2014: 182). Discursive frames simplify and condense information, and they allow senders of communication to verbally emphasize certain aspects of a given piece of information and suppress others (Clatworthy & Jones, 2003; Entman, 1993; Fiss & Zajac, 2006; Pfarrer et al., 2010). Consequently, given the abundance, complexity, and ambiguity of firm-related information, discursive framing should be a central element of CEOs' attempts to subtly sway infomediaries to issue more favorable statements about their firms.

CEOS' USE OF METAPHORICAL COMMUNICATION: BENEFITS AND COSTS

In this paper, we focus on a particularly important, classical form of discursive framing that has already garnered widespread attention in many research disciplines, including management (Cornelissen et al., 2011; Cornelissen & Werner, 2014; Ibáñez & Hernández, 2011; Johnson & Lakoff, 2002; Weick, 1998), but has received relatively little attention in research on executives and their interactions with stakeholders: metaphorical communication.[3] Typically, metaphorical communication maps a familiar and concrete domain of knowledge, known as the source domain, onto a less familiar and more abstract domain of knowledge, known as the target domain (Lakoff & Johnson, 1980). For instance, in the phrase "an organization is a machine" (Heracleous & Jacobs, 2008), the familiar source domain of "machine" is mapped onto the less familiar target domain of "organization." In so doing, metaphorical communication highlights some characteristics of an issue while suppressing others (Entman, 1993; Thibodeau & Boroditsky, 2011)—"An organization is a machine" evokes different concepts of an organization than "an organization is a jazz ensemble" (Weick, 1998). As such, metaphorical communication is not merely a rhetorical ornament, but serves as a type of discursive framing because an issue is virtually "seen through" (Black, 1962: 41) and conceptualized by the metaphorical expression (Lakoff & Johnson, 1980).

Studies in linguistics and leadership rhetoric emphasize the benefits of metaphorical communication for influencing audiences' sensemaking processes and actions (Sopory &

[3] Similar to prior studies (e.g., Sopory & Dillard, 2002), we view metaphors, similes, metonymies, and analogies as elements of metaphorical communication, as they all compare "something unfamiliar […] with something familiar" (Corbett & Connors, 1998: 95). While a metaphor implicitly compares two issues or ideas ("A is B;" e.g., "argument is war"), a simile does so explicitly ("A is like B;" e.g., "employees are like flowers"). A metonymy does not compare A with B, but substitutes the "A" that is actually meant with a "B" that is attributive or suggestive of "A" (e.g., "The White House said…"). Finally, an analogy is an extended comparison in which a causal pattern is transferred from a familiar domain to a less familiar domain (Corbett & Connors, 1998), as in "Big companies often produce bureaucracy the way gardens produce weeds" (Kindler, 2010).

Dillard, 2002). On a cognitive level, metaphorical communication can help receivers make sense of information, as it introduces something "novel by reference to something already known" (Foster-Pedley, Bond, & Brown, 2005: 44), thereby heightening the receiver's awareness, understanding, and retention of a message (Ortony, 1975). Moreover, metaphorical communication facilitates sensegiving, as it allows senders to rhetorically distill meaning, and to form and steer stakeholders' interpretations (Cornelissen & Werner, 2014). On an affective level, metaphors link logical and emotional methods of persuasion by invoking familiarity and by referring to sensory experiences (Mio, 1997). Therefore, metaphorical communication can engender an overall positive attitude toward communicated messages and the senders of those messages, and it can help align the receiver's responses with the sender's goals (Antonakis et al., 2011; Read, Cesa, Jones, & Collins, 1990).

Notably, this positive description of metaphorical communication is echoed in an abundant stream of practitioner-oriented literature, which advises corporate leaders to use metaphorical communication when interacting with critical audiences (e.g., Antonakis et al., 2012; Den Hartog & Verburg 1997; Miller, 2012; Walz, 2014). Therefore, it is not surprising that CEOs often use metaphors in their public communication (Amernic, Craig, & Tourish, 2007; Oberlechner & Mayer-Schoenberger, 2002). In 2011, for instance, AOL's Tim Armstrong used metaphorical communication to announce a new product initiative:

> In the Groupon-like coupon business […], we can all expect *a rolling thunder* of new products from AOL. (cited by Carlson, 2011; italics added)

However, the scientific management literature lacks research that critically examines the outcomes of executives' usage of metaphorical communication in the context of firms' strategic public language. This is puzzling because a substantial body of research suggests that metaphorical communication might have significant downsides (Merkl-Davies & Koller, 2012;

Ramsay, 2004; Steen, 2011). In particular, cognitive linguists point out that the familiar source domains used as frames in metaphorical communication are a priori conceptual reductions and simplifications (Hamington, 2009) that involve little detail and precision, never fully correspond to the target domain (Black, 1962), and never encompass all facets of a given concept (Shenkar et al., 2008). For instance, conceptualizing exploration in organizations through the source domain of improvisation in a jazz ensemble neglects the fact that improvisation in jazz, in contrast to exploration in an organization, typically evolves within a relatively institutionalized structure, including a set of "standard" songs and routinized melismas or "licks" (Hatch & Weick, 1998). Moreover, although metaphorical communication can initially reduce ambiguity by focusing receivers' attention on certain attributes of an issue, it is, by design, ambiguous because it always has many "potential meanings" (Ramsay, 2004: 146). For example, the "rolling thunder" metaphor used by AOL's CEO may include not only positive associations of power and invincibility but also negative associations of violence and devastation.

When transferred to the CEO-infomediary dyad, these facets of metaphorical communication could jeopardize processes that would otherwise be expected to sway infomediaries' assessments positively. On a cognitive level, the lack of precision and the ambiguity inherent in metaphorical communication could induce the infomediary to frame the information conveyed by the CEO differently and less favorably than intended by the CEO. On an affective level, metaphorical communication could cause the receiving infomediaries to develop negative views on the CEO and the firm. At worst, they might suspect that the CEO is attempting to downplay or even camouflage unfavorable information. Altogether, while there are good reasons to suggest that CEOs' use of metaphorical communication affects the benevolence of infomediary assessments, the *direction* of that effect is unclear.

To help resolve these apparent contradictions, we propose that CEOs' use of metaphorical communication can lead to favorable or unfavorable appraisals, depending on the type of the addressed infomediary. The key premise underlying our theorizing is Wiesenfeld, Wurthmann, and Hambrick's concept of the infomediary's work as "socially situated, [...] constituent-minded sensemaking" (2008: 232). This concept highlights that infomediaries are special in their sensemaking because, by design, they make sense of information through the prism of *giving* sense to their specific audiences. As a result, how infomediaries make and give sense depends not only on their own rational analyses and biases, but also on the analyses and biases "they anticipate in their constituents" (Wiesenfeld et al., 2008: 232).

We organize our thinking around two interrelated assumptions about how infomediaries' sensemaking and sensegiving are socially situated, both of them rooted in research on social cognition (Fiske & Taylor, 2017). First, we stipulate that infomediaries, like all humans, are "cognitive misers" who aim to minimize cognitive effort (Taylor, 1981). Thus, we expect infomediaries to interpret information conveyed by a CEO more favorably and to be positively influenced by a discursive frame evoked by a CEO, the more the form of framing is generally conducive to their own sensegiving (Brown, Call, Clement, & Sharp, 2015; Deephouse & Heugens, 2009). Conversely, infomediaries will issue less favorable assessments the more a CEO's framing is inapplicable or even counterproductive to their work.

Second, we assume that infomediaries' cognition—just as social cognition in other (professional) groups—is biased by field-specific, institutionalized norms and schemas (Bundy & Pfarrer, 2014; Lamin & Zaheer, 2012; Petkova, Rindova, & Gupta, 2013). Specifically, we suppose that infomediaries use the degree to which a piece of communication accommodates the

idiosyncratic norms and conventions of sensemaking and sensegiving that are shared in their respective fields as a "cognitive shortcut" (Fanelli & Misangyi, 2006: 1053) to judge the quality and trustworthiness of the conveyed information and the communicator, and the overall situation. Thus, if a CEO increases the degree to which his or her communication accommodates an infomediary group's institutionalized norms and conventions of sensemaking and sensegiving, members of that group should evaluate the respective firm more favorably. Moreover, infomediaries should become more skeptical regarding firm-related information the more they perceive the CEO's communication as violating their professional norms and conventions.

Building on the above premises, we assume that infomediaries' appreciation of metaphorical communication is socially situated and that it differs among various types of infomediaries because such rhetoric is likely to suit the institutionalized needs and norms of some groups of infomediaries but not those of others. In the following, we further develop and formalize this rationale using the examples of two highly important, profoundly dissimilar, and frequently studied types of infomediaries: journalists and securities analysts.

CEOs' Use of Metaphorical Communication and Journalists' Reporting

Journalists are one of the most important infomediary groups (Deephouse, 2000) and preferred addressees of CEO communication (Westphal et al., 2012) because they operate at the interface between the firm and broader society (Gamson & Modigliani, 1989). We propose that journalists' sensemaking and sensegiving are socially situated in a way that renders journalists favorable towards metaphorical communication. As described in sociological studies of journalism, journalists aim to enlighten the public in a way that goes beyond the mere reproduction of information (Shoemaker & Reese, 1996). They want to raise interest in their reporting and give "legitimacy and credibility to what they do" (Deuze, 2005: 446). To achieve

these goals, journalists must provide broad, easy-to-grasp, and engaging information about the firms they cover (Andsager, 2000; Tuchman, 1972). As suggested by the media-dependency hypothesis (Ball-Rokeach & DeFleur, 1976), journalists can give such meaning not only by relaying digestible pieces of important information (Deuze, 2005) but also by providing frames that fit the public's reality (Gamson & Modigliani, 1989) and "resonate with [its] existing underlying schemas" (Scheufele & Tewksbury, 2007: 12). Therefore, metaphorical communication is particularly suited for journalistic work because it allows journalists to forgo complex, technical explanations, and instead build on their audiences' experiences and schemas (Lakoff, 1993). Given our assumptions, then, we expect journalists to respond positively if a CEO increases his or her use of metaphorical communication because translating metaphorically framed content into their own sensegiving requires them to expend less cognitive effort than translating literally communicated content.

In light of the communicative needs of journalists' audiences, it is not surprising that metaphorical communication has long been part of their rhetorical canon—their "thought world" (Lamin & Zaheer, 2012: 47) and socialization, and their training. Notably, teachers of journalism often advocate for the use of metaphorical communication, even in business journalism (e.g., Burns, 2013; Morley, 2007). For instance, Peter Coy, economics editor of *Bloomberg Businessweek*, argues that "[t]rying to communicate without using any metaphors would be like trying to complete a paint-by-numbers canvas without red, blue, yellow and green" (2013). Metaphorical communication also resonates with the social background of most journalists, most of whom have degrees in discursive and text-focused disciplines, and work with words rather than numbers (Medsger, 2014).[4] Correspondingly, scholars have long observed the multiplicity

[4] We are grateful to leading journalists and professors of (business) journalism whom we interviewed as part of this

and variety of metaphors used by journalists, especially in business journalism (Partington, 1995). In summary, metaphorical communication is part of journalists' institutionalized norms and schemas, and journalists view this type of communication as an indication of quality, eloquence, and competence. As such, if a CEO uses more metaphorical communication, he or she better accommodates journalists' institutionalized norms of sensemaking and sensegiving, ultimately leading to more positive assessments from journalists.

Hypothesis 1 (H1): Ceteris paribus, the more a CEO uses metaphorical communication, the more favorably journalists will report about that CEO's firm.

CEOs' Use of Metaphorical Communication and Analysts' Evaluations

Analysts are focal addressees of CEO communication because they gather and interpret market- and firm-specific information to issue research reports for investors, which include earnings forecasts and advice on whether to buy, hold, or sell stocks (Giorgi & Weber, 2015). We expect analysts, in contrast to journalists, to respond negatively if a CEO increases his or her use of metaphorical communication. This is because, first, the success and status of analysts depend on whether they provide detailed, accurate, and clear recommendations and reports (Giorgi & Weber, 2015). As noted above, metaphorical communication is limited in detail, rather inaccurate, and inherently ambiguous (Ramsay, 2004). Therefore, it is inapplicable to analysts' work for the same reasons that it is applicable to journalists' work. In particular, the more a CEO uses metaphorical communication, the more cognitive effort an analyst must expend to contextualize, interpret, and ultimately translate the information into precise recommendations. Analysts also find it challenging to juxtapose metaphorical CEO communication with their own insights and forecasts. They may therefore perceive metaphorical communication as distracting

---

study. They confirmed our understanding of (business) journalists' social and educational background.

"noise." All of these factors are likely to bias analysts negatively and to reduce the odds that they will adopt the CEO's interpretations in their own sensegiving.

Second, given the requirements of the analyst's profession, metaphorical communication is not engrained in their rhetorical canon. Analysts usually hold degrees in computational disciplines, such as finance, economics, and accounting, or in computer science, physics, or engineering (Block, 1999). Many analysts have MBAs and are certified as Chartered Financial Analysts (Block, 1999; Brown et al., 2015). In contrast to journalists, analysts develop detailed presentations and financial reports, primarily by using "spreadsheets, relational databases and statistical and graphics packages" (Granville, 2014: 1). Thus, while journalists appreciate the familiarity and generalness of metaphorical frames, analysts operate in a thought world that is structured by numbers and facts (Fuller & Metcalf, 1978), which is at odds with a metaphorical representation of reality.[5] Combining these insights with our premise that infomediaries inherently respond unfavorably to communication that is incongruent with their field-specific professional norms and schemas, we conclude that analysts will generally respond skeptically the more a CEO uses metaphorical communication. We therefore hypothesize:

Hypothesis 2 (H2): Ceteris paribus, the more a CEO uses metaphorical communication, the more unfavorably analysts will evaluate that CEO's firm.

[5] We checked whether the supposed (dis-)inclination towards metaphorical communication is really reflected in journalists' and analysts' work. For two of the firms in our sample, we randomly selected 100 articles from the *New York Times* and *Wall Street Journal* that mentioned the respective firms at least once in the text, as well as 100 analyst reports covering these firms. From the newspaper articles and analyst reports, we extracted each statement containing the name of at least one of the respective firms. We then followed the coding guideline for metaphorical communication that we present in this paper and checked whether any metaphorical communication appeared in those statements. 8.7 percent (27 of 309) of journalists' statements employed metaphorical communication when referring to these firms. In contrast, only 0.08 percent of analysts' statements (7 out of 8,243) used metaphorical communication when commenting on the focal firm. In line with our theorizing, journalists used metaphors such as "$5 million […] would look like bus fare to the four big players in the stent business" or "Amgen Inc. and Johnson & Johnson have taken their long-running blood feud to Capitol Hill," which are creative and clearly non-idiomatic (see the method section for our precise definition of metaphorical communication as compared to idiomatic language). Conversely, the few metaphors used by analysts were rather common and nearly idiomatic, such as "Johnson & Johnson needs to overcome several roadblocks."

The Moderating Effect of Negative Earnings Surprises

Our theorizing is based on the notion that infomediaries use certain aspects of firms' public language—in our case, CEOs' use of metaphorical communication—as a "cognitive shortcut [in their appraisals]" (Fanelli & Misangyi, 2006: 1053). Part of what makes these biased interpretations so intriguing is that, according to both general and capital-market-specific social cognition theory (Fiske & Taylor, 2017; Gao et al., 2015; Healy & Palepu, 2001), human reliance on cognitive shortcuts varies, depending on other facets of the provided information.

We argue that, in the context of infomediaries' assessments of CEOs' public communication, information about firm performance relative to expectations will be a particularly influential moderator. Performance that positively or negatively deviates from market expectations—so-called "earnings surprises" (e.g., Brown, 2001)—is especially important information from the perspective of most infomediaries as such deviations might require them to reassess the firm and its future (Pfarrer et al., 2010; Washburn & Bromiley, 2014). Moreover, a significant body of cognitive psychology suggests that whether a given piece of information is positive or negative strongly influences human behavior, including human reliance on cognitive shortcuts (Rozin & Royzman, 2001; Taylor, 1991). More precisely, research on the "negativity bias" suggests that people who act in situations of uncertainty, ambiguity, and pressure, tend to rely more on cognitive shortcuts when they interpret negative and pessimistic information than when they interpret positive and optimistic information (Baumeister et al., 2001).[6]

[6] This effect unfolds most likely for evolutionary reasons. Generally, it is evolutionarily useful to give negative information more consideration than positive information (Baumeister et al., 2001). Moreover, when an event occurs and individuals lack comprehensive information on how to adequately respond to it, they typically interpret the event by relying on their engrained and "tried and tested" cognitive schemas (Taylor, 1991). As a result, assessments of negative events will be more biased by cognitive shortcuts than assessments of positive events (assuming a situation of evaluative uncertainty and ambiguity).

In this vein—and considering the considerable evaluative uncertainty and the omnipresent time-pressure under which infomediaries work (Fanelli et al., 2009; Tuchman, 1972)—we argue that the more that a firm's performance negatively surprises, the more infomediaries' assessments will be biased by their engrained schema regarding CEOs' use of metaphorical communication. For the case of journalists, given their favorable schema of CEOs' use of metaphorical communication, this implies that the increase in journalists' favorability that stems from an increase in the CEO's use of metaphorical communication will be greater the more the firm's performance disappoints. In particular, we envision an increased use of metaphorical communication by a CEO to subtly indicate to the journalist that the CEO is particularly ready and capable to deal with the situation. For the case of analysts, the interactive effect of metaphorical communication and negative earnings surprises on analysts' favorability will be the opposite because, as suggested in Hypothesis 2, analysts view metaphorical communication with skepticism or even as an attempt to camouflage unpleasant facts.

Hypothesis 3a (H3a): Ceteris paribus, the more negative the firm's earnings surprises, the stronger the positive marginal effect of the CEO's metaphorical communication on the favorability of journalists' reporting about the firm.

Hypothesis 3b (H3b): Ceteris paribus, the more negative the firm's earnings surprises, the stronger the negative marginal effect of the CEO's metaphorical communication on the favorability of analysts' evaluations of the firm.

METHODS

Given the systematic differences in data on journalists' and analysts' evaluations of firms, and theoretically motivated differences in the set of controls, we ran two analyses. Analysis I estimates journalists' evaluations based on their statements about firms, while Analysis II

estimates analysts' evaluations based on their (a) EPS forecasts and (b) recommendations. To allow for a comparison of Analysis I and Analysis II, we use the same sample of firms and the same measure of CEOs' use of metaphorical communication.

Sample

We drew our sample from the population of firms that operated in the U.S. pharmaceutical industry and the U.S. computer hardware and software industries between January 1, 2002, and July 31, 2011. These industries are suitable for our study because they are characterized by a high level of CEO discretion (Hambrick & Finkelstein, 1987), and they are the subject of abundant coverage by journalists and analysts. We collected data from the Osiris, Mergent, Ward's Business Directory, and Thomson SDC Platinum databases to identify all firms that met the following criteria: (1) a Global Industry Classification Standard (GICS) of 4510 or 4520 in the hardware and software industries, or a GICS of 3510 or 3520 in the pharmaceutical industry;[7] (2) headquartered in the U.S. in 2002; (3) revenue of more than USD 100 million in 2002; and (4) two or more CEOs in the period between 2002 and 2011. Criteria 1 to 3 were chosen in order to obtain a sample of comparable firms that were sufficiently large to receive substantial coverage from journalists and analysts. Nevertheless, we excluded 22 firms owing to the limited availability of conference-call transcripts, the discursive vehicle we used to capture CEOs' metaphorical communication. Criterion 4 allowed us to better discern effects at the CEO and firm levels. Subsequently, we excluded 15 extraordinary cases involving certain types of CEOs, particularly interim CEOs or co-CEOs, which might have confounded our analysis by, for instance, introducing a sampling bias toward poor performers (Krieger & Ang, 2013). After

[7] In the pharmaceutical industry, we excluded firms that derived less than 40 percent of their sales from pharmaceuticals (following the approach of Kaplan, Murray, & Henderson, 2003).

further reductions due to missing data for the controls,[8] our final samples consisted of 43 firms for Analysis I (n = 449 comparisons before/after the conference call; 98 CEOs) and 47 firms for Analysis II (n = 624 comparisons of aggregated analyst forecasts before/after the conference call, 101 CEOs; 270 comparisons of aggregated analyst recommendations, 94 CEOs).[9]

Independent Variable: CEOs' Use of Metaphorical Communication

Discursive vehicle. We selected firms' quarterly earnings conference calls as the focal discursive vehicle of our study for three reasons. First, participation in conference calls is a vital source of firm-related insights for both analysts and journalists (Bushee, Core, Guay, & Hamm, 2010; Jorgensen & Wingender, 2004; Roush, 2011).[10] Second, both infomediary groups are simultaneously and directly affected by CEO rhetoric during conference calls. Third, the use of conference calls ensures comparability between firms, and allows us to inherently control for many other potential influences on the relationship between CEOs' rhetoric and infomediaries' evaluations. For example, conference calls take place in similar settings, have a relatively standardized length, and cover similar topics across firms. We used Thomson Research and Seeking Alpha to obtain transcripts of quarterly earnings conference calls. Our final sample covered 937 hand-coded conference calls, which constituted approximately 8,000 pages of text.

Coding process. Guided by Mio et al.'s approach (2005), we iteratively developed a reliable, context-sensitive, non-computerized content-analytical instrument to identify and measure CEOs' use of metaphorical communication (Krippendorff, 2004). The coding process

[8] We tested for sample attrition and sample selection (Wooldridge, 2010) by constructing a sample-selection indicator, s_{it}, which specified whether we observed all x_{it} and y_{it}. (Notably, in our main analysis, we do not use observations when $s_{it} = 0$ because data for at least some elements of (x_{it} y_{it}) are unobserved in these cases). Fixed effects are inconsistent if the sample selection is not strictly exogenous. Therefore, the selection indicator from other time periods (e.g., s_{it+1}) should be insignificant at time t. We calculated the robust t statistic for s_{it+1} in $y_{it} = x_{it}\beta + u_{it} + s_{it+1}$ and found no significant effect for this selection indicator. Therefore, we conclude that the missing observations in our panel do not follow a systematic pattern.

[9] We reran all analyses with the overlap of the samples. The results remained consistent.

[10] Notably, journalists regularly refer directly to these conference calls in their reporting.

had three phases. In the first phase, we developed preliminary coding instructions, including concise definitions of the rhetorical ingredients of metaphorical communication (i.e., metaphors, similes, analogies, and metonymies). We provided anchoring examples, coding criteria, and inter-subjectively comparable guidelines that illustrated how to identify metaphorical communication reliably (Miles & Huberman, 1994).

In the second phase, two of the authors and three specially trained coders independently pre-tested the coding instructions by hand-coding 25 transcripts of conference calls held by U.S. pharmaceutical companies not included in the final sample. Together, these actors discussed inconsistent codings until they arrived at an agreement (Krippendorff, 2004). Thereafter, we revised the initial coding instructions and supplemented them with various examples of CEOs' metaphorical communication. We also decided to exclusively focus on what we termed "contentual" CEO communication; i.e., we excluded passages in which the CEO welcomed participants, exchanged compliments, and directed questions to other firm representatives.[11]

In the third phase, we applied the initial coding guidelines to the conference calls in the sample and optimized our coding instruments. More specifically, three two-person teams of trained coders independently coded all conference-call transcripts. The teams then met to compare and discuss every identified metaphor. As part of this process, we also specified whether metaphors were "dead metaphors" and, therefore, had to be excluded from the coding. "Dead metaphors" are metaphors that have "become so familiar and so habitual that we have ceased to be aware of their metaphorical nature and use them as literal terms" (Tsoukas, 1991:

[11] Examples of "non-contentual" communication are "… good question [!];" "Thanks for participating in all the good questions, and we look forward to seeing you at …" (both Mike Fister, Q3 2006); and "Mary Kay, why don't you go into the details of this, make sure I don't misspeak" (Robert Parkinson, Q4 2009). We excluded these statements because we theorize about CEOs' sensegiving regarding the firm, which is not the topic of non-contentual communication. Note that we use non-contentual communication as a control in our analyses.

568), such as "on the one hand … on the other hand."[12]

Throughout this phase, we gauged the robustness of our coding. First, we tested inter-rater agreement with satisfactory results (Krippendorff's, 2004, alpha = 0.74). Two types of inter-rater disagreement were common: one in which the codings deviated with regard to how many words should be counted as belonging to a specific metaphorical expression, and another in which metaphorical communication was only recognized by some of the coders. In cases of continued disagreement, the first author acted as an independent evaluator and made a final decision. Subsequently, the teams created a final version of each coded document.[13]

Table 1 provides examples of metaphorical communication used by the CEOs in our sample. In total, we identified 2,229 instances of metaphorical communication in our final sample of conference calls, the majority of which (95 percent) took the form of metaphors. As can be expected based on prior work (Mio et al., 2005), the CEOs in our sample used a wide variety of metaphorical communication to frame a broad range of topics including their firm's performance outlook, business partnerships, and product policies.

[Insert Table 1 about here]

Measure of CEOs' use of metaphorical communication. Our goal was to develop a measure that reflected the weight of metaphorical communication as part of the overall length of the communication. To do so, we first counted all words belonging to a coherent sentence structure (i.e., subject, predicate, object) that were necessary to make sense of a given metaphorical expression, and we classified those words as metaphorical communication. We

[12] We followed prior linguistics research (Pragglejaz Group, 2007) in classifying a metaphor as dead if it has become so conventionalized that its meaning is explained in an ordinary dictionary. We referred to the Merriam-Webster and Cambridge Dictionaries. We also treated idioms as dead metaphors, as they have ceased to be figurative and their meaning has become routine (Burbules, Schraw, & Trathen, 1989). Technical jargon, such as the term "pipeline" in the pharmaceutical industry, was treated in the same way (Lindsley, 1991).

[13] Complete coding guidelines, including the list of dead metaphors, and an extended list of examples of metaphorical communication used by the CEOs in our sample can be obtained from the authors.

then operationalized CEOs' use of metaphorical communication by dividing the total number of words in a CEO's metaphorical communication during a conference call by the total number of words in the CEO's contentual communication during the same call.[14]

Moderating Variable: Negative Earnings Surprises

To gauge the degree to which firm performance was below market expectations, we first computed deviations from market expectations (e.g., Brown, 2001; Pfarrer et al., 2010). Specifically, we calculated the difference between a firm's quarterly EPS and the mean of analysts' EPS forecasts for that quarter, scaled by the actual EPS. In line with our theoretical arguments, we splined this variable and included *negative earnings surprises* (i.e., earnings below the mean of analysts' EPS forecasts) and, as a check, *positive earnings surprises* (i.e., earnings above the mean of analysts' EPS forecasts) as moderators.[15]

Dependent Variable in Analysis I: Favorability of Journalists' Reporting

Our measure of the favorability of journalists' reporting largely follows approaches found in prior research (Deephouse, 2000; Pollock & Rindova, 2003). We gauged how journalists' assessments of firms changed from (a) the period between the prior conference call and the focal conference call to (b) the period between the focal conference call and the following conference call.[16] We conducted a manual content analysis of journalists' statements about each firm in our sample published in the *New York Times* (*NYT*) and the *Wall Street Journal* (*WSJ*), which are the top-circulating national newspapers in the United States (Wolfe, 2012). We chose to focus on

[14] Other operationalizations, such as counting instances in which metaphorical expressions are used by CEOs (Mio et al., 2005) or the absolute number of the CEO's metaphorical words in a given conference call, yielded results that were consistent with those we report here.

[15] We find more positive values and a higher mean for the positive earnings surprise spline. This is in line with the argument that firms' actively attempt to avoid negative surprises.

[16] To reduce the likelihood that confounding events biased our results, we ran robustness checks with re-calculated measures of journalists' favorability (i.e., including statements appearing only in the 60, 30, and 20 days following the focal conference call). The results were consistent with those reported here.

these leading outlets instead of randomly selecting statements from a broad range of newspapers, as doing so allowed us to avoid the bias that stems from mimetic "pack journalism" (Williams, 2011). Moreover, the experts we interviewed emphasized that journalists writing for the *NYT* and the *WSJ* use conference calls particularly intensely in their reporting.

To collect a meaningful and manageable amount of data, we first searched Factiva for all articles that appeared in either of the two newspapers between 2001 and 2011 and mentioned the firm's name at least once. We then followed the progressive article-selection process developed by Deephouse (2000).[17] This sampling procedure yielded a total of 10,155 articles. We then extracted and read each statement that contained the name of the respective firm. We also carefully read the sentence that followed the focal statement in order to extract statements with indirect but unambiguous mentions of the focal firm, such as "the company" or "the software maker." Moreover, to ensure that we only captured journalists' favorability (and not analysts' evaluations), we excluded 947 statements in which journalists directly quoted analysts. This procedure yielded a total of 25,415 statements.

Two trained coders then worked with two of the authors to develop a comprehensive coding protocol (Miles & Huberman, 1994) to reliably group the statements into three categories. The first category included statements that favorably portrayed the focal firms. The second contained statements that were ambiguous (i.e., contained both positive and negative evaluations, or messages that could be interpreted both positively and negatively). The third category included unfavorable statements about the focal firm. We first had multiple coders, including the authors, collectively assess 150 statements, after which we relied on independent coders to code the

[17] In addition to Deephouse's (2000) process, for firms that yielded more than 24 articles in a given year, we randomly selected 24 articles (the average number of articles per firm per year in our sample). The complete selection and coding guidelines can be obtained from the authors.

remainder of the statements. A systematic test (Lacy & Riffe, 1996) showed highly acceptable interrater reliability (Krippendorff's, 2004, alpha = 0.83). Nevertheless, throughout the process, the coders and the authors discussed unclear cases to ensure consistent and reliable coding.

Similar to prior studies (e.g., Pollock & Rindova, 2003), we calculated the Janis-Fadner coefficient of imbalance (Deephouse, 2000; Janis & Fadner, 1965) to measure the favorability of journalists' reporting about a firm. Given that we theorize about journalists' assessments of specific firms, we considered the individual statement as our recording unit (Deephouse, 2000), and calculated the ratio of favorable statements to unfavorable statements in the period beginning right after a focal conference call and ending just before the next conference call, while controlling for the total number of statements in that period (i.e., including statements that were neutral). In so doing, we ensured considerable temporal proximity between a CEO's communication and a journalist's assessment. Finally, as the "measurement of a dependent variable at two points in time is widely regarded a powerful tool for making causal inferences from nonexperimental data" (Allison, 1990: 93), we computed the delta of the favorability after the focal conference call to the favorability in the period before the focal call (the latter defined as the time between the prior conference call and the focal conference call).[18]

Control Variables in Analysis I

We included the following control variables in Analysis I. Table A.II in the Online Appendix summarizes the data sources for all variables.

Firm controls. We used firm fixed effects estimators to account for difficult-to-observe differences among firms that are invariant over time. We accounted for additional firm-level explanations by including the following time-variant factors that, as they change, could

[18] We ran robustness checks to account for the fact that, under some conditions, change scores may lead to inaccurate findings (Allison, 1990). See the Online Appendix for additional details.

significantly affect the favorability of journalists' reporting (Westphal & Deephouse, 2011). *Prior firm performance change* was operationalized as the change in return on assets (ROA; measured as the ratio of net income to total assets) in the 36 quarters preceding the focal quarter. *Prior firm performance volatility* was measured as the standard deviation of the ROA in the same 36 quarters (Fanelli et al., 2009). As changes in *firm size* might affect whether a company is subjected to media critique (Fang & Peress, 2009), we also included the natural logarithm of total assets at the end of the quarter preceding the focal conference call. Furthermore, we included the *number of press releases* issued by the focal firm in a given year, as press releases are intended to affect the scope and tone of reporting by journalists (Pollock & Rindova, 2003). Similar to prior studies (Chatterjee & Hambrick, 2011), we also included *media attention to the firm* by counting the total number of statements in the *NYT* and *WSJ* that mentioned the focal firm in the period after a conference call.

CEO controls. We included a set of variables that could affect how a CEO and his or her firm are perceived by infomediaries. In this regard, we controlled for *CEO age* and *CEO tenure*. Moreover, we gauged the CEO's structural power (Finkelstein, 1992) using a dummy for cases in which the CEO was also chairman of the board (*CEO duality*; coded as 1). We also controlled for an incoming CEO's status as *contender*, *outsider*, or *follower*, which could affect journalists' appraisals around the time of a succession (Shen & Cannella, 2002). A CEO was coded as a contender (coded as 1) if he or she was an insider successor replacing a CEO whose time in office ended before the age of 64. A CEO was coded as an outsider (coded as 1) if he or she was not previously employed by the firm. We classified all other CEOs as followers but omitted this category in our analysis. In line with Fanelli et al. (2009), we also measured overall *media attention paid to the CEO* by counting how often a CEO was mentioned in the *NYT* and the *WSJ*

in the quarter before the focal conference call. Relatedly, we measured *CEO celebrity* (Wade, Porac, Pollock, & Graffin, 2006) by counting the number of "American Business Awards" and "International Business Awards" a CEO received in a given year (Chatterjee & Hambrick, 2011).[19] Finally, we controlled for CEOs' functional backgrounds (Ocasio & Kim, 1999) using dummy variables for the *CEO's prior experience in sales/marketing* and the *CEO's prior experience in finance*, as both may affect CEOs' communication and infomediaries' appraisals.

Journalist controls. To account for systematic differences between newspapers (Deephouse & Heugens, 2009), we controlled for how many of the statements issued in the period after the conference call were published in the *NYT* and the *WSJ*, respectively. We labeled this variable *number of statements*.

Conference-call controls. To control for the fact that a CEO's relative involvement in a conference call could influence journalists' favorability, we included the *share of the CEO's words* of all words spoken by firm representatives during the conference call. Moreover, given the importance of the chief financial officer (CFO), especially for providing detailed information (Larcker & Zakolyukina, 2012), we controlled for *CFO involvement*, which we measured as the ratio of the words spoken by the CFO to the words spoken by the CEO.

In addition, we controlled for six aspects of CEO communication during the conference calls. First, *future orientation* (Matsumoto, Pronk, & Roelofsen, 2011) was measured as the ratio of future-oriented to present-oriented words used by the CEO. We identified these words using the "future" and "present" categories of the Linguistic Inquiry Word Count (LIWC) dictionary (Pennebaker, Booth, & Francis, 2007). Second, we applied the "primary process" subcategory of

[19] For categories of the Stevie® Awards, see www.stevieawards.com. We used a yearly measure as the awarding procedure evolves over a prolonged period every year: Finalists are announced in May, and the awards banquets take place in June and September. Winners are prominently featured on the website for the rest of the year. We expect all of these events to draw public attention and, in combination, add to a CEO's celebrity in the focal year.

WordStat's Regressive Imagery Dictionary (Martindale, 1990) to capture the share of *image-based language*, which uses certain words to create a sensory experience (Black, 1962) and has been described as influencing the favorability of receivers (Carton, Murphy, & Clark, 2014). Third, based on the assumption that infomediaries might welcome easy-to-understand communication, we controlled for the *comprehensibility of CEO communication*, which we measured using the Gunning-Fog Index (Li, 2008). Fourth, given that part of our logic is related to the informational needs of journalists and analysts, and assuming that CEOs can use metaphorical communication while simultaneously providing detailed facts and figures in other parts of the communication (Henry, 2008), we captured the CEO's fact orientation by measuring the *CEO's use of numerical language* as a proxy. To do so, we counted how often a CEO used the terms included in the LIWC "numbers" category (Pennebaker et al., 2007) and divided that sum by the number of CEO's contentual words. Fifth, as infomediaries might be swayed by CEOs' compliments and acknowledgements (Westphal & Deephouse, 2011), we controlled for the *CEOs' non-contentual communication* by counting the ratio of the CEO's non-contentual words in a call to all words spoken by the CEO. Sixth, we included the *optimism of the CEO's tone* (e.g., Guo, 2014) by employing Loughran and McDonald's (2011) dictionary to detect positive and negative words used by the CEO and then calculating the Janis-Fadner coefficient of imbalance (Deephouse, 2000; Janis & Fadner, 1965) for each conference call.

Finally, to control for additional time-specific effects not captured in our controls, we included dummy variables for all quarters covered in the sample.

Econometric Approach in Analysis I

We applied a robust firm fixed effects panel estimator using the Huber-White standard error correction (*xtreg, fe robust* in Stata), as a Wald test indicated heteroskedasticity in our fixed

effects model.[20] In all interaction tests, we mean-centered the component variables.

Dependent Variable in Analysis II: Favorability of Analysts' Evaluations

Analogous to Analysis I, we used the change in analysts' favorability from the period before the focal conference call to the period after the call as our dependent variable. As prior work has used both EPS forecasts and analyst recommendations to gauge analysts' assessments—with equally good rationales—we developed two different but complementary measures and used them in separate estimations. The first measure focuses on the change in analysts' EPS forecasts (Francis & Soffer, 1997). We searched the I/B/E/S detailed forecast database to collect all EPS forecasts issued by the analysts covering the firms in our sample. To lower the probability of alternative explanations, we only included EPS forecasts from analysts who had issued a forecast in the period between the prior conference call and the focal call ("last EPS forecast before call" in the formula below) and a forecast in the period between the focal call and the next call ("first EPS forecast after call").[21] Moreover, to ensure comparability, we only considered one-year EPS forecasts. This resulted in a sample of 6,969 before/after pairs of EPS forecasts. We calculated the difference between an analyst's first EPS forecast after the call and that analyst's last EPS forecast before the call. We standardized this measure by the share price at the close of the quarter for which the focal conference call was held (Fanelli et al., 2009). To make this analysis more comparable to Analysis I, we then aggregated the analysts' forecasts on a group level by calculating the median change in favorability across all analysts for the specific call and firm.[22]

[20] As we had missing data, we wondered whether it would be more appropriate to use pooled OLS estimation. However, for panel data, pooled OLS becomes biased when there is evidence of a fixed firm effect. Accordingly, we conducted an F-test to evaluate whether the fixed effects u_i are equal to zero in our model ($y_{it} = x_{it}\beta + u_i + e_{it}$). We find strong evidence pointing to a need to reject the null hypothesis that the fixed effects are zero ($p < 0.001$). Therefore, we are required to estimate fixed effects.

[21] If the same analyst issued more than one EPS forecast/recommendation before or after the focal conference call, we chose the evaluation that was issued closest to the call.

[22] As we describe in the Online Appendix, we also took the opportunity to test the effect of CEOs' use of

Finally, we multiplied by 100 to ensure more interpretable regression coefficients.

Our second measure of analysts' favorability focused on analyst recommendations (Fanelli et al., 2009). To be consistently conservative across our approaches, we identified those analysts issuing at least one recommendation in the period between the prior conference call and the focal call and one recommendation in the period between the focal call and the following call.[23] This yielded 393 before/after pairs of recommendations from individual analysts. Furthermore, to maximize the comparability between this examination of analysts' favorability and our examination of journalists' favorability, we first classified recommendations as positive (I/B/E/S code 1 and 2), negative (I/B/E/S code 4 and 5), or neutral (I/B/E/S code 3), and then calculated the Janis-Fadner coefficient before and after the call.[24] The final recommendation-based measure was the difference between the two scores.

Control Variables in Analysis II

Similar to Analysis I, we included a dummy for every quarter from 2002 to 2011. In addition, for both sets of estimations—the one estimating changes in EPS forecasts and the one estimating changes in the Janis-Fadner index of analysts' recommendations—we followed prior research on securities analysts by controlling for several factors.

Firm controls. As in Analysis I, Analysis II uses a firm fixed effects estimator, and includes prior firm performance change, prior firm performance volatility, firm size, the number of press

---

metaphorical communication at the individual analyst level.

[23] In our main analysis, we used the I/B/E/S detailed database on individual analysts' recommendations instead of the I/B/E/S summary database on consensus recommendations, which has been employed in prior studies (e.g., Benner & Ranganathan, 2012). We do so for two reasons. First, the summary database does not allow us to accurately distinguish recommendations issued before the call from those issued after the call. Second, using the summary database would have caused serious distortion in our models because the closest consensus estimates before and after the call are not necessarily calculated from the same group of analysts. In fact, analysts do not issue new recommendations as often as they issue EPS forecasts. As such, analysts are frequently included in consensus estimates before the call but not in consensus estimates after the call, and vice versa.

[24] An analysis that uses the median change in recommendations before and after the call to measure analysts' favorability, which is comparable to our measure based on EPS forecasts, supports our findings.

releases, and media attention to the firm. To control for changes in other time-variant firm-level indicators that are typically assumed to affect analysts' favorability (Chen & Cheng, 2006), we included the *debt-to-equity ratio, dividends per share, liquidity,*[25] and *cash flow from operating activities* in the quarter preceding the focal conference call (in billions of USD) as well as the cumulated standardized *abnormal returns* in the 10 days before the call[26]. We also included the *number of shares traded* on the day of the call relative to the number of shares outstanding (Jegadeesh, Kim, Krische, & Lee, 2004).

CEO controls. We included all CEO controls found in Analysis I.

Analyst controls. We accounted for herding effects by including the *number of analysts following* each firm, defined as the number of analysts issuing at least one EPS forecast for the firm in the corresponding year (Fanelli et al., 2009).

Conference-call controls. We used all conference-call controls included in Analysis I.

Econometric Approach in Analysis II

Similar to Analysis I, we used a robust firm fixed effects estimator with the Huber-White standard error correction. We again mean-centered the components of the interaction term.

RESULTS

Descriptive statistics

Table 2 presents means, standard deviations, and correlations among the variables for Analysis I. The strong correlations between media attention to the firm and the number of press releases (0.87), and between media attention to the firm and media attention to the CEO (0.80) can be attributed to firm size (Pollock & Rindova, 2003). This is further corroborated by the correlations between firm size and the number of press releases (0.63), and between firm size

[25] We measured liquidity as the ratio of cash and short-term investments to assets.
[26] The results were robust to changes in the timeframes of cumulative returns.

and media attention to the firm (0.57).

[Insert Table 2 about here]

Table 3 presents means, standard deviations, and correlations for Analysis II.[27]

[Insert Table 3 about here]

To test for potential multicollinearity, we calculated variance inflation factors (VIFs). For Analysis I, media attention to the firm, number of press releases, and media attention to the CEO had VIFs greater than 3 (8.35, 6.60, and 3.04, respectively), while the mean VIF amounted to 2.03. Although all VIFs were well below 10, we reran our models after dropping these three variables and found that the results were not materially affected. For Analysis II, media attention to the firm, firm size, number of press releases, CEO contender, and CEO outsider had VIFs higher than 3 (8.36, 6.71, 6.03, 3.62, and 3.37, respectively; mean VIF = 2.2). We reran all models after dropping these variables, but our results were unaffected.

Regression models

In Tables 4 and 5, we present three models for each of the three dependent variables: one with the control variables, one that includes CEOs' use of metaphorical communication, and one that includes the interaction of CEOs' use of metaphorical communication with the negative earnings surprise and positive earnings surprise splines. As the results are consistent across models, we only interpret the full models. Model 3 in Table 4 presents the results of the test of the impact of CEOs' use of metaphorical communication on journalists' favorability.[28] In that model, the coefficient of CEOs' use of metaphorical communication is positive and significant (p

[27] Table 3 shows the descriptive statistics for the sample that uses the EPS-based measure of analysts' favorability. The corresponding table for the recommendation-based measure, which can be requested from the authors, shows highly comparable means, standard deviations, and correlations. We also conducted the same checks for multicollinearity in that analysis and derived similar results.

[28] As heteroskedasticity suggests that the error terms are not normally distributed and, thereby, violate a core assumption of the F-test, we follow Stata and do not report F statistics. Instead, we conducted a log-likelihood ratio test.

< 0.01). This provides support for Hypothesis 1, which suggests that increases in a CEO's metaphorical communication render journalists more benevolent towards the CEO's firm.

[Insert Table 4 about here]

Models 3 and 6 in Table 5 present the results of the fixed effects panel models designed to test the effect of CEOs' use of metaphorical communication on analysts' favorability. Model 3 includes the measure based on EPS forecasts, while Model 6 includes the measure based on I/B/E/S recommendation data. In both models, the coefficient of CEOs' use of metaphorical communication is negative and significant ($p < 0.05$). This provides support for Hypothesis 2, which predicts that firms receive less favorable analyst assessments if CEOs use more metaphorical communication in a given conference call.

[Insert Table 5 about here]

Finally, we tested Hypotheses 3a and 3b, which predict that the effects of CEOs' use of metaphorical communication on infomediaries' appraisals are amplified by increasing degrees of negative earnings surprises. We find support for both hypotheses. As indicated in Model 3 in Table 4 and in Models 3 and 6 in Table 5, negative earnings surprises amplify the association between metaphorical communication and infomediaries' (dis-)favorability. This is not the case for positive earnings surprises. Figure 1a visualizes the moderating effect of negative earnings surprises (plus/minus 0.25 s.d. from the mean) on the relation between CEOs' use of metaphorical communication (mean-centered) and the favorability of journalists' reporting. Clearly, the marginal effect of CEOs' use of metaphorical communication increases the more firm earnings negatively deviate from expectations. Figure 1b shows this interactive effect for the EPS-based measure of analysts' assessments and suggests a greater marginal negative effect of metaphorical communication in the case of increasing earnings disappointment. For instance,

if the level of metaphorical communication used by the CEO is at 0.01, the favorability of analysts' evaluations is approximately 0.37 units lower in the case of a major earnings disappointment (-0.16) than in a situation with a minor earnings disappointment (0.21).[29] Figure 1c shows a corresponding effect for the recommendation-based measure of analysts' favorability. Notably, we conducted a simple slope analysis for all interactions (Aiken & West, 1991; Cohen, Cohen, West, & Aiken, 2003). For both journalists and analysts, the test indicated significant effects for low and high levels of CEO's metaphorical communication in situations involving a negative earnings surprise. This further supports our findings.

[Insert Figure 1 about here]

In order to further ensure the validity of our results, we conducted an extensive set of robustness checks. These involved, for example, the exclusion and inclusion of covariates, the re-evaluation of Analysis II at the level of the individual security analyst, and the implementation of a set of preliminary endogeneity tests. See the Online Appendix for additional details.

DISCUSSION

Our study shows that CEOs' use of metaphorical communication shapes how their firms are viewed by infomediaries. In addition, our results indicate that this effect is not uniform, but depends on the idiosyncratic social situations of different types of infomediaries. While journalists report more favorably about firms the more their CEOs rely on metaphorical communication, analysts issue more critical forecasts the more CEOs use this type of communication. Moreover, the effects of CEOs' use of metaphorical communication on journalists' and analysts' favorability grow the more firm performance fails to meet expectations.

[29] Assume a share price of USD 100 and an EPS forecast of USD 3 before the call. This number predicts that, at a level of metaphorical communication of 0.01, the EPS forecast would drop after the call by approximately 5.3 percent, to USD 2.84, in the case of a major earnings disappointment, ceteris paribus.

Classical Rhetoric and CEOs' Communication with Infomediaries

Our research contributes to the growing debate over the power of CEOs' words to influence infomediaries (e.g., Fanelli et al., 2009; Westphal et al., 2012) by directing attention to the implications of some of the most widely taught elements of classical rhetoric. Most prior work on executive communication (Westphal et al., 2012) and impression management (e.g., Elsbach, 1994) has focused on the use of specific types of words, such as image-based words (Emrich, Brower, Feldman, & Garland, 2001) and emotional words (Guo, 2014); on the content of communication, such as prosocial claims (McDonnell & King, 2013); or on a combination of the two (Carton et al., 2014). Although these studies have revealed important insights, few researchers have investigated the vital notion that CEOs' sensegiving towards infomediaries is not only about choosing certain types of words and presenting certain types of firm-related information, but also about using rhetorical instruments to provide frames that direct audiences' attention and interpretations (Amernic et al., 2007; Clatworthy & Jones, 2003). We address this gap by building on a large body of studies on cognition (Gioia, 1986) and linguistics (Steen, 2011) that have highlighted classical rhetorical devices, especially metaphorical communication, as ways of persuading critical audiences by reducing complexity and formulating "sticky" messages (Heath & Heath, 2007). In so doing, we draw attention to the potentially crucial role of the larger canon of classical rhetoric (Corbett & Connors, 1998) for our understanding of CEOs and their quest to manage the legitimacy of their firms.

Our study is also unique because it develops novel theoretical explanations for *why* CEOs' rhetoric affects infomediaries' appraisals. By integrating general theory on social cognition (Fiske & Tayler, 2017) with specific theory on infomediaries' socially situated sensemaking (Wiesenfeld et al., 2008), we emphasize that infomediaries interpret firms' and CEOs' public

language in highly charged and influential social contexts. This perspective is particularly useful because it allows us to view CEOs' communication through the idiosyncratic lenses of the various types of infomediaries—individuals who are similar in that they all work under tight constraints and all aim to serve their audiences, but who differ because they pass sense on to different recipients and because they are socially situated in fundamentally different thought worlds (Lamin & Zaheer, 2012).

Metaphorical Communication as a Metaphor: Understanding CEOs' Rhetorical Dilemmas

Our study also provides a systematic, contextualized picture of CEOs' use of metaphorical communication. While research in various domains has increasingly suggested that communicators need to consider the diverging needs of their intended audiences when using metaphorical communication (Black, 1962; Dunbar, 1995; Liu, 2002), few studies in the management domain have proposed that the effects of metaphorical communication could be more complex than typically portrayed in the practitioner-oriented literature (Cornelissen et al., 2011; König et al., 2017; Ramsay, 2004). To the best of our knowledge, our study is the first to build theory and use systematic evidence to explore how and why the use of metaphorical communication might be particularly intricate in the context of CEOs' strategic public language.

Part of what makes our findings insightful is that they reveal the *rhetorical dilemma* that CEOs face when using metaphorical communication. This dilemma is rooted in the fact that CEOs often target their communication at different infomediary groups simultaneously—in our case, journalists and analysts. Given that it is institutionally difficult to separate these groups, CEOs have to choose between two suboptimal alternatives: either they jeopardize analysts' benevolence by using more metaphorical communication or they forgo the opportunity to garner more positive journalist reporting about the firm by using less metaphorical communication.

Thus, on a broader scale, metaphorical communication might serve as a metaphor for the larger phenomenon of the rhetorical dilemmas in executive communication that emerge from the fact that executive communication is almost always received by multiple audiences with potentially contradictory interests.

Connecting Disconnected Debates in Research on Infomediaries

Our study also has more general implications for research on firms' relations with infomediaries. Most importantly, it is the first to compare the effects of one facet of CEO communication on two groups of infomediaries. In this respect, our research extends and challenges prior studies that have focused on single audiences (e.g., Fanelli et al., 2009; Zavyalova et al., 2012). In particular, it provides novel explanations for why findings on firm-intermediary discourse cannot necessarily be generalized across audiences, thereby adding to research that highlights the complex, potentially paradoxical effects of firms' communication with diverse constituents (e.g., Lamin & Zaheer, 2012; Zavyalova et al., 2016).

Finally, by showing that CEOs' rhetoric influences the benevolence of infomediaries, we further open up the black box of behavioral tendencies in infomediaries' evaluations (Mokoaleli-Mokoteli, Taffler, & Agarwal, 2009). For instance, while the extant research explains why analysts are often overly optimistic when issuing evaluations (Sedor, 2002), scholars are still unclear as to why analysts are sometimes overly *pessimistic* in their assessments (Doukas, Kim, & Pantzalis, 2002). Our findings—including those on the interactive effects of metaphorical communication and negative earnings surprises—indicate that the influence of rhetorical devices for constituent-minded sensemaking are relevant for explaining such behavior.

Practical Implications

There are important practical implications of our research. Perhaps most importantly, we

advise corporate leaders, along with their coaches and speechwriters, to view metaphorical communication and other elements of classical rhetoric as vital but equivocal levers for influencing infomediaries' evaluations. To manage the trade-offs involved in using metaphorical communication when interacting with infomediaries, CEOs might need to consider which group of infomediaries is most important at a given time and tailor their rhetoric to the preferences of that audience. Such considerations are especially important in times of poor firm performance.

FUTURE RESEARCH

We acknowledge the limitations of this study, which, in turn, point to promising avenues for future research. Most notably, given the interpretative complexities inherent in our analysis, we could only use preliminary measures to control for the degree to which CEOs' metaphorical communication was aligned with the message that was to be conveyed (Aristotle, *Rhetoric*; Booth, 1978). This is important because, according to the interaction view of metaphor (Black, 1962), audiences make sense of metaphorical language by drawing associations between the structures of the source and target domains (Zashin & Chapman, 1974). However, some metaphors might be perceived as so "bizarre" that audiences will struggle to make such associations. While we did not come across any such examples,[30] we see ample opportunities for future research into the impact of specific characteristics of CEOs' metaphorical communication in, for instance, highly diverse cultural contexts (König et al., 2017; Liu, 2002). As part of these endeavors, scholars might also find ways to build on and improve our research design. In particular, we envision research that automatizes the detection and classification of CEOs' metaphorical communication by, for example, developing dictionaries for specific source

[30] We discussed several metaphors as potentially bizarre but then decided they were sufficiently comprehensible. Such metaphors included, for instance: "They can sort of try and buy as opposed to choke down a huge hairball" (Carol Bartz, ACAD, Q3 2006), and "I don't believe you're going to see very many people with crystal balls that don't have lots of cloud and cotton and fuzz in them" (Jack London, CACI, Q3 2007).

domains, such as sports, journeys, or violence (Lakoff & Johnson, 1980). The literature on applied linguistics (e.g., Cameron & Maslen, 2010) might provide useful guidance in this regard.

Furthermore, scholars might draw a more comprehensive picture of CEO communication with infomediaries and the role of metaphorical communication in that context by analyzing other discursive vehicles, such as interviews, public speeches, corporate presentations, or roadshows (Whittington, Yakis-Douglas, & Ahn, 2016). Incorporating such sources would enhance our understanding of how infomediaries perceive CEO communication and the underlying mechanisms. Relatedly, there is ample scope for research into *how* CEOs deliver communication by including such aspects as facial expressions, gestures, and tone of voice (Cornelissen, Clarke, & Cienki, 2012; Den Hartog & Verburg, 1997; Wenzel & Koch, 2018).

We also see opportunities to examine the effects of CEOs' use of other rhetorical devices on infomediaries. We chose to focus on metaphorical communication because linguists suggest that metaphors are particularly suitable for framing complex messages under time constraints and ambiguous conditions, aspects that are at the heart of CEOs' communication with infomediaries. However, could infomediaries' social cognitions also affect the outcomes associated with other parts of CEOs' rhetoric? Moreover, given infomediaries' rhetorical biases, could the effect of metaphorical communication be amplified by other aspects of CEOs' communication? The significantly positive effect of CEOs' use of numerical language on analysts' favorability that we observe (see Model 3 in Table 5) might point in this direction (Henry, 2008). Thus, future research should address these questions—their answers might provide cues as to how firms can best approach the dilemma of communicating with diverse audiences.

Finally, subsequent research could extend the views presented here by studying the potentially divergent effects of CEOs' use of metaphorical communication and other dimensions

of classical rhetoric on other audiences. Obviously, it would be worthwhile to extend our analysis to other types of infomediaries, such as customer-advocacy groups or rating agents, which themselves have other audiences and, thus, might respond differently to metaphorical communication. Such extensions might also more directly illuminate the mechanisms through which CEOs' use of metaphorical communication affects infomediaries' appraisals, for which we only provide preliminary evidence. Moreover, it would be interesting to study the effects of metaphorical communication on different shareholder groups (Hayward & Fitza, 2016; Whittington et al., 2016), such as institutional investors, private investors, family investors, and professional investors. Each of these groups might have idiosyncratic, socially situated ways of interpreting CEOs' rhetoric, thereby giving rise to additional vexing paradoxes. We also call for more research on the effect of CEOs' use of metaphorical communication on audiences *within* firms (König et al., 2017). Future research might, for example, reveal that metaphorical communication polarizes, rather than unifies, organizational members and, as such, creates additional rhetorical dilemmas for corporate leaders.

In conclusion, we hope that our study can serve as a starting point for conversations on leaders' rhetoric in a wide range of research domains and as a first step toward a more nuanced view of the effects of CEOs' use of metaphorical communication.

REFERENCES

Aiken, L. S., & West, S. G. 1991. ***Multiple regression: Testing and interpreting interactions.*** Newbury Park, CA: Sage.

Allison, P. D. 1990. Change scores as dependent variables in regression analysis. In Sobel ME, Becker MP (eds.). ***Sociological Methodology,*** 20: 93–114.

Andsager, J. L. 2000. How interest groups attempt to shape public opinion with competing news frame. ***Journalism and Mass Communication Quarterly,*** 77: 577–592.

Antonakis, J., Fenley, M., & Liechti, S. 2011. Can charisma be taught? Tests of two interventions. ***Academy of Management Learning & Education,*** 10: 374–396.

Antonakis, J., Fenley, M., & Liechti, S. 2012. Learning charisma. Transform yourself into the person others want to follow. ***Harvard Business Review,*** 90: 127–130.

Amernic, J., Craig, R., & Tourish, D. 2007. The transformational leader as pedagogue, physician, architect, commander, and saint: Five root metaphors in Jack Welch's letters to stockholders of General Electric. ***Human Relations,*** 60: 1839–1872.

Aristotle, ***Rhetoric.*** classics.mit.edu/Aristotle/rhetoric.html.

Ball-Rokeach, S. J., & DeFleur, M. L. 1976. A dependency model of mass-media effects. ***Communication Research,*** 3: 3–21.

Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. 2001. Bad is stronger than good. ***Review of General Psychology,*** 5: 323–370.

Benford, R. D. & Snow, D. A., 2000. Framing processes and social movements: An overview and assessment. ***Annual Review of Sociology,*** 26: 611–639.

Benner, M. J., & Ranganathan, R. 2012. Offsetting illegitimacy: How pressures from securities analysts influence incumbents in the face of new technologies. ***Academy of Management Journal,*** 55: 213–233.

Black, M. 1962. ***Models and metaphors.*** Ithaca, NY: Cornell University Press.

Block, S. B. 1999. A study of financial analysts: Practice and theory. ***Financial Analysts Journal,*** 55: 86–95.

Booth, W. 1978. Metaphor as rhetoric. ***Critical Inquiry,*** 5: 49–72.

Brown, L. D. 2001. A temporal analysis of earnings surprises: Profits versus losses. ***Journal of Accounting Research,*** 39: 221–241.

Brown, L. D., Call, A. C., Clement, M. B., & Sharp, N. Y. 2015. Inside the 'black box' of sell-side financial analysts. ***Journal of Accounting Research,*** 53: 1–47.

Buffett, W. 1985. Chairman's letter. In Berkshire Hathaway Inc., ***Annual Report***. Omaha: Berkshire Hathaway Inc.

Bundy, J., & Pfarrer, M. D. 2014. ***Reputations in flux: Examining how a firm's multiple reputations influence reactions to a negative violation***. Unpublished working paper, Pennsylvania State University and University of Georgia.

Burbules, N. C., Schraw, G., & Trathen, W. 1989. Metaphor, idiom, and figuration. ***Figuration, Metaphor and Symbolic Activity,*** 4: 93–110.

Burns, L. S. 2013. ***Understanding journalism*** (2nd ed.). London: Sage.

Bushee, B. J., Core, J. E., Guay, W., & Hamm, S. J. W. 2010. The role of the business press as an information intermediary. ***Journal of Accounting Research,*** 48: 1–19.

Cameron, L. & Maslen, R. 2010. ***Metaphor analysis: Research practice in applied linguistics, social sciences and the humanities***. London: Equinox.

Carlson, N. 2011. ***Rolling thunder: AOL CEO Tim Armstrong's favorite metaphors and analogies***. http://www.businessinsider.com/rolling-thunder-aol-ceo-tim-armstrongs-favorite-metaphors-and-analogies-2011-2?IR=T, retrieved on May 23, 2016.

Carton, A. M., Murphy, C., & Clark, J. R. 2014. A (blurry) vision of the future: How leader rhetoric about ultimate goals influences performance. ***Academy of Management Journal,*** 57: 1544–157.

Chatterjee, A., & Hambrick, D. C. 2011. Executive personality, capability cues, and risk taking: How narcissistic CEOs react to their successes and stumbles. ***Administrative Science Quarterly,*** 56: 202–237.

Chen, X., & Cheng, Q. 2006. Institutional holdings and analysts' stock recommendations. ***Journal of Accounting, Auditing, and Finance,*** 21: 399–440.

Clatworthy, M., & Jones, M. J. 2003. Financial reporting of good news and bad news: Evidence from accounting narratives. ***Accounting and Business Research,*** 33: 171–185.
Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. 2003. ***Applied multiple regression/correlation analysis for the behavioral sciences*** (3rd ed.). Mahwah, NJ: Lawrence Erlbaum.
Corbett, E. P. J., & Connors, R. J. 1998. ***Classical rhetoric for the modern student*** (4th ed.). New York: Oxford University Press.
Cornelissen, J. P., Clarke J. S., & Cienki, A. 2012. Sensegiving in entrepreneurial contexts: The use of metaphors in speech and gesture to gain and sustain support for novel business ventures. ***International Small Business Journal,*** 30: 213–241.
Cornelissen, J. P., Holt, R., & Zundel, M. 2011. The role of analogy and metaphor in the framing and legitimization of strategic change. ***Organization Studies,*** 32: 1701–1716.
Cornelissen, J. P., & Werner, M. D. 2014. Putting framing in perspective: A review of framing and frame analysis across the management and organizational literature. ***Academy of Management Annals,*** 8: 181–235.
Coy, P. 2013. ***Staggering drunks and fiscal cliffs: How Bloomberg Businessweek uses metaphors in the news***. http://niemanreports.org/articles/staggering-drunks-and-fiscal-cliffs-how-bloomberg-businessweek-uses-metaphors-in-the-news, retrieved on May 23, 2016.
Deephouse, D. L. 2000. Media reputation as a strategic resource: An integration of mass communication and resource-based theories***. Journal of Management***, 26: 1091–1112.
Deephouse, D. L., & Heugens, P. P. 2009. Linking social issues to organizational impact: The role of infomediaries and the infomediary process. ***Journal of Business Ethics***, 86: 541–553.
Den Hartog, D. N., & Verburg, R. M. 1997. Charisma and rhetoric: Communicative techniques of international business leaders. ***Leadership Quarterly,*** 8: 355–391.
Deuze, M. 2005. What is journalism? Professional identity and ideology of journalists reconsidered. ***Journalism***, 6: 442–464.
Doukas, J. A., Kim, C., & Pantzalis, C. 2002. A test of the errors-in-expectations explanation of the value/glamour stock returns performance: Evidence from analysts' forecasts. ***Journal of Finance,*** 57: 2143–2165.
Dunbar, K. 1995. How scientists really reason: Scientific reasoning in real-world laboratories. In R. J. Sternberg & J. E. Davidson (Eds.), ***The nature of insight:*** 365–395. Cambridge, MA: MIT Press.
Elsbach, K. D. 1994. Managing organizational legitimacy in the California cattle industry: The construction and effectiveness of verbal accounts. ***Administrative Science Quarterly,*** 39: 57−88.
Emrich, C. G., Brower, H. H., Feldman, J. M., & Garland, H. 2001. Images in words: Presidential rhetoric, charisma, and greatness. ***Administrative Science Quarterly,*** 46: 527–557.
Entman, R. M. 1993. Framing: Toward clarification of a fractured paradigm. ***Journal of Communication,*** 43: 51−58.
Fanelli, A., & Misangyi, V. F. 2006. Bringing out charisma: CEO charisma and external stakeholders. ***Academy of Management Review,*** 31: 1049–1061.
Fanelli, A., Misangyi, V. F., & Tosi, H. L. 2009. In charisma we trust: The effects of CEO charismatic visions on securities analysts. ***Organization Science,*** 20: 1011–1033.
Fang, L., & Peress, J. 2009. Media coverage and the cross-section of stock returns. ***Journal of Finance,*** 64: 2023–2052.
Finkelstein, S. 1992. Power in top management teams: Dimension, measurement, and validation.

Academy of Management Journal, 35: 505–538.
Fiske, S. T., & Taylor, S. E. 2017. ***Social cognition: From brains to culture*** (3rd ed.). Sage: London.
Fiss, P. C., & Zajac, E. Z. 2006. The symbolic management of strategic change: Sensegiving via framing and decoupling. ***Academy of Management Journal,*** 49: 1173–1193.
Foster-Pedley, J., Bond, D., & Brown, R. 2005. The spoken (he)art of strategy – A metaphor analysis of the strategy discourse of 10 South African business executives. ***South African Journal of Business Management,*** 36: 41–54.
Francis, J., & Soffer, L. 1997. The relative informativeness of analysts' stock recommendations and earnings forecast revisions. ***Journal of Accounting Research,*** 35: 193–211.
Fuller, R. J., & Metcalf, R. W. 1978. Management disclosures: Analysts prefer facts to management's predictions. ***Financial Analysts Journal,*** 34: 55–57.
Gamson, W. A., & Modigliani, A. 1989. Media discourse and public opinion on nuclear power: A constructionist approach. ***American Journal of Sociology,*** 95: 1–37.
Gao, H., Yu, T., & Cannella, A. A. 2015. The use of public language in strategy: A multidisciplinary review and research agenda. ***Journal of Management,*** 42(1): 21–54.
Gavetti, G., & Rivkin, J. W. 2005. How strategists really think – Tapping the power of analogy. ***Harvard Business Review***, 83: 54–63.
Gioia, D. A. 1986. Symbols, scripts, and sensemaking: Creating meaning in the organizational experience. In H. P. Sims & D. A. Gioia (Eds.), ***The thinking organization***: 49–74. San Francisco: Jossey-Bass.
Gioia, D. A., & Chittipeddi, K. 1991. Sensemaking and sensegiving in strategic change initiation. ***Strategic Management Journal,*** 12: 433–448.
Giorgi, S., & Weber, K. 2015. Marks of distinction: Framing and audience appreciation in the context of investment advice. ***Administrative Science Quarterly,*** 60: 333–367.
Granville, C. 2014. ***Becoming a financial analyst***. http://www.investopedia.com/articles/financialcareers/ 06/financialanalyst.asp, retrieved on May 23, 2016.
Guo, W. 2014. Executives' use of emotional language and investor reactions. In R. Hart (Ed.), ***Communication and language analysis in the corporate world***: 198–215. Hershey: IGI Global.
Hambrick, D. C., & Finkelstein, S. 1987. Managerial discretion: A bridge between polar views of organizational outcomes. ***Research in Organizational Behavior,*** 9: 369–406.
Hamington, M. 2009. Business is not a game: The metaphoric fallacy. ***Journal of Business Ethics,*** 86: 473–484.
Hatch, M., & Weick, K. 1998. Critical resistance to the jazz metaphor. ***Organization Science,*** 9: 600–604.
Hayward, M., & Fitza, M. 2016. Pseudo-precision? Precise forecasts and impression management in managerial earnings forecasts. ***Academy of Management Journal,*** online first, doi: 10.5465/amj.2014.0304.
Healy, P. M., & Palepu, K. G. 1995. The challenges of investor communication. The case of CUC International, Inc. ***Journal of Financial Economics,*** 38: 111–140.
Healy, P. M., & Palepu, K. G. 2001. Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. ***Journal of Accounting and Economics,*** 31: 405–440.
Heath, C., & Heath, D. 2007. ***Made to stick: Why some ideas survive and others die***. New York:

Random House.
Henry, E. 2008. Are investors influenced by how earnings press releases are written? ***Journal of Business Communication,*** 45: 363–407.
Heracleous, L., & Jacobs, C. 2008. Understanding organizations through embodied metaphors. ***Organization Studies,*** 29: 45–78.
Ibáñez, F., & Hernández, L. 2011. The contemporary theory of metaphor: Myths, developments and challenges. ***Metaphor and Symbol,*** 26: 161–185.
Janis, I., & Fadner, R. 1965. The coefficient of imbalance. In H. Lasswell, N. Leites & Associates (Eds.), ***Language of politics***: 153–169. Cambridge, MA: MIT Press.
Jegadeesh, N., Kim, J., Krische, S. D., & Lee, C. M. C. 2004. Analyzing the analysts: When do recommendations add value? ***Journal of Finance,*** 59: 1083–1124.
Johnson, M. & Lakoff, G. 2002. Why cognitive linguistics require embodied realism. ***Cognitive Linguistics***, 13: 245–263.
Jorgensen, R. D., & Wingender, J. R. 2004. A survey on the dissemination of earnings information by large firms. ***Journal of Applied Finance,*** 14: 77–84.
Kaplan, S., Murray, F., & Henderson, R. 2003. Discontinuities and senior management: Assessing the role of recognition in pharmaceutical firm response to biotechnology. ***Industrial and Corporate Change,*** 12: 203–233.
Kindler, J. 2010.To our owners. In Pfizer Inc., ***Pfizer Annual Review 2009***. New York City: Pfizer Inc.
König, A., Fehn, A., Puck, J., & Graf-Vlachy, L. 2017. Primary or complex? Towards a theory of metaphorical strategy communication in MNCs. ***Journal of World Business,*** 52: 270–285.
Krieger, K., & Ang, J. 2013. The unintended consequences of high expectations and pressure on new CEOs. ***Journal of Business Finance and Accounting,*** 40: 501–526.
Krippendorff, K. 2004. ***Content analysis: An introduction to its methodology*** (2nd ed.). Thousand Oaks, CA: Sage.
Lacy, S., & Riffe, D. 1996. Sampling error and selecting intercoder reliability samples for nominal content categories. ***Journalism and Mass Communication Quarterly,*** 73: 963–973.
Lakoff, G. 1993. The contemporary theory of metaphor. ***Metaphor and Thought,*** 2: 202–251.
Lakoff, G., & Johnson, M. 1980. ***Metaphors we live by***. Chicago: University of Chicago Press.
Lamin, A., & Zaheer, S. 2012. Wall Street vs. Main Street: Firm strategies for defending legitimacy and their impact on different stakeholders. ***Organization Science,*** 23: 47–66.
Landau, M., Meier, B., & Keefer, L. 2010. A metaphor-enriched social cognition. ***Psychological Bulletin,*** 136: 1045-1067
Larcker, D. F., & Zakolyukina, A. A. 2012. Detecting deceptive discussions in conference calls. ***Journal of Accounting Research,*** 50: 495–540.
Leith, S. 2014. ***The art of persuasion – How to do folksy like Warren Buffett***. http://www.ft.com/intl/ management/art-of-persuasion, retrieved on May 23, 2016.
Li, F. 2008. Annual report readability, current earnings, and earnings persistence. ***Journal of Accounting and Economics,*** 45: 221–247.
Lindsley, O. R. 1991. From technical jargon to plain English for application. ***Journal of Applied Behavior Analysis,*** 24: 449–458.
Liu, D. 2002. ***Metaphor, culture and worldview. The case of American English and the Chinese language.*** Lanham: University Press of America.
Loughran, T., & McDonald, B. 2011. When is a liability not a liability? Textual analysis, dictionaries, and 10Ks. ***Journal of Finance,*** 66: 35–65.

Martindale, C. 1990. ***The clockwork muse: The predictability of artistic change.*** New York: Basic Books.

Matsumoto, D., Pronk, M., & Roelofsen, E. 2011. What makes conference calls useful? The information content of managers' presentation and analysts' discussion sessions. ***Accounting Review,*** 86: 1381–1414.

McDonnell, M.-H., & King, B. 2013. Keeping up appearances: Reputational threat and impression management after social movement boycotts. ***Administrative Science Quarterly,*** 58: 387–419.

Medsger, B. 2014. ***Getting journalism education out of the way***. http://journalism.nyu.edu/publishing/ archives/debate/forum.1.essay.medsger.html, retrieved on May 23, 2016.

Merkl-Davies, D., & Koller, V. 2012. 'Metaphoring' people out of this world: A critical discourse analysis of a chairman's statement of a UK defense firm. ***Accounting Forum,*** 36: 178–193.

Miles, M. B., & Huberman, A. M. 1994. ***Qualitative data analysis: An expanded sourcebook*** (2nd ed.). Thousand Oaks, CA: Sage.

Miller, A. 2012. ***The tall lady with the iceberg: The power of metaphor to sell, persuade & explain anything to anyone.*** New York: Chiron Association Inc.

Mintzberg, H. 1973. A new look at the chief executive's job. ***Organizational Dynamics,*** 1: 20–30.

Mio, J. S. 1997. Metaphor and politics. ***Metaphor and Symbol,*** 12: 113–133.

Mio, J. S., Riggio, R., Levin, S., & Reese, R. 2005. Presidential leadership and charisma: The effects of metaphor. ***Leadership Quarterly,*** 16: 287–294.

Mokoaleli-Mokoteli, T., Taffler, R. J., & Agarwal, V. 2009. Behavioural bias and conflicts of interest in analyst stock recommendations. ***Journal of Business Finance and Accounting,*** 36: 384–418.

Morley, D. 2007. ***The Cambridge introduction to creative writing***. Cambridge: Cambridge University Press.

Oberlechner, T., & Mayer-Schoenberger, V. 2002. ***Through their own words – Toward a new understanding of leadership through metaphors*****.** Working paper no. RWP02**–**043, Kennedy School of Government, Boston.

Ocasio, W. & Kim, H. 1999. The circulation of corporate control: Selection of functional backgrounds of new CEOs in large U.S. manufacturing firms, 1981-1992. ***Administrative Science Quarterly,*** 44: 532–562.

Ortony, A. 1975. Why metaphors are necessary and not just nice. ***Educational Theory,*** 25: 45–53.

Partington, A. 1995. A corpus-based investigation into the use of metaphor in British business journalism, ***Asp. la revue du GERAS,*** 7–10: 25–39.

Pennebaker, J. W., Booth, R. J., & Francis, M. E. 2007. ***Linguistic inquiry and word count: LIWC 2007*****.** Austin, TX: LIWC.

Petkova, A. P., Rindova, V. P., & Gupta, A. K. 2013. No news is bad news: Sensegiving activities, media attention, and venture capital funding of new technology organizations. ***Organization Science,*** 24: 865–888.

Pfarrer, M. D., Pollock, T. G., & Rindova, V. P. 2010. A tale of two assets: The effects of firm reputation and celebrity on earnings surprises and investors' reactions. ***Academy of Management Journal,*** 53: 1131–1152.

Pollock, T. G., & Rindova, V. P. 2003. Media legitimation effects in the market for initial public offerings. ***Academy of Management Journal,*** 46: 631–642.
Pragglejaz Group. 2007. MIP: A method for identifying metaphorically used words in discourse. ***Metaphor and Symbol,*** 22: 1–39.
Ramsay, J. 2004. Trope control: The costs and benefits of metaphor unreliability in the description of empirical phenomena. ***British Journal of Management,*** 15: 143–155.
Read, S., Cesa, I., Jones, D., & Collins, N. 1990. When is the federal budget like a baby? Metaphor in political rhetoric. ***Metaphor and Symbol,*** 5: 125–149.
Rindova, V. P., & Fombrun, C. J. 1999. Constructing competitive advantage: The role of firm-constituent interactions. ***Strategic Management Journal,*** 20: 691–710.
Roush, C. 2011. ***Show me the money: Writing business and economics stories for mass communication*** (2nd ed.). New York: Routledge.
Rozin, P., & Royzman, E. B. 2001. Negativity bias, negativity dominance, and contagion. ***Personality and Social Psychology Review,*** 5: 296–320.
Scheufele, D. A., & Tewksbury, D. 2007. Framing, agenda setting, and priming: The evolution of three media effects models. ***Journal of Communication,*** 57: 9–20.
Sedor, L. M. 2002. An explanation for unintentional optimism in analysts' earnings forecasts. ***Accounting Review,*** 77: 731–753.
Shen, W., & Canella Jr., A. A. 2002. Revisiting the performance consequences of CEO succession: The impacts of successor type, postsuccession senior executive turnover, and departing CEO tenure. ***Academy of Management Journal,*** 45: 717–733.
Shenkar, O., Luo, Y., & Yeheskel, O. 2008. From 'distance' to 'friction': Substituting metaphors and redirecting intercultural research. ***Academy of Management Review,*** 33: 905–923.
Shoemaker, P. J., & Reese, S. D. 1996. ***Mediating the message: Theories of influences on mass media content.*** White Plains, NY: Longman Publishers.
Sopory, P., & Dillard, J. 2002. The persuasive effects of metaphor: A meta-analysis. ***Human Communication Research,*** 28: 382–419.
Steen, G. J. 2011. The contemporary theory of metaphor – Now new and improved! ***Review of Cognitive Linguistics,*** 9: 26–64.
Taylor, S. E. 1981. The interface of cognitive and social psychology. In J. H. Harvey (Ed.), ***Cognition, social behavior, and the environment:*** 189–211. Hillsdale, NJ: Lawrence Erlbaum Associates.
Taylor, S. E. 1991. Asymmetrical effects of positive and negative events: The mobilization-minimization hypothesis. ***Psychological Bulletin,*** 110: 67–85.
Thibodeau, P., & Boroditsky, L. 2011. Metaphors we think with: The role of metaphor in reasoning. ***PLoS ONE***, 6: e16782.
Tsoukas, H. 1991. The missing link: A transformational view of metaphors in organizational science. ***Academy of Management Review,*** 16: 566–585.
Tuchman, G. 1972. Objectivity as strategic ritual: An examination of Newsmen's notions of objectivity. ***American Journal of Sociology,*** 77: 660–679.
Wade, J. B., Porac, J. F., Pollock, T. G., & Graffin, S. D. 2006. The burden of celebrity: The impact of CEO certification contests on CEO pay and performance. ***Academy of Management Journal,*** 49: 643–660.
Walz, J. 2014. ***Speak performance: Using the power of metaphors to communicate vision, motivate people, and lead your organization to success***. New York: Business Expert Press.
Washburn, M., & Bromiley, P. 2014. Managers and analysts: An examination of mutual

influence. ***Academy of Management Journal,*** 57: 849–868.
Weick, K. 1998. Introductory essay: Improvisation as a mindset for organizational analysis. ***Organization Science***, 9: 543–555.
Wenzel, M., & Koch, J. 2018. Strategy as staged performance: A critical discursive perspective on keynote speeches as a genre of strategic communication. ***Strategic Management Journal,*** forthcoming.
Westphal, J. D., & Deephouse, D. L. 2011. Avoiding bad press: Interpersonal influence in relations between CEOs and journalists and the consequences for press reporting about firms and their leadership. ***Organization Science***, 22: 1061–1086.
Westphal, J. D., Park, S. H., McDonald, M. L., & Hayward, M. L. 2012. Helping other CEOs avoid bad press social exchange and impression management support among CEOs in communications with journalists. ***Administrative Science Quarterly,*** 57: 217–268.
Whittington, R., Yakis-Douglas, B., & Ahn, K. 2016. Cheap talk? Strategy presentations as a form of chief executive officer impression management. ***Strategic Management Journal,*** 37(12): 2413–2424.
Wiesenfeld, B. M., Wurthmann, K. A., & Hambrick, D. C. 2008. The stigmatization and devaluation of elites associated with corporate failures: A process model. ***Academy of Management Review,*** 33: 231–251.
Williams, K. 2011. ***International journalism.*** London: Sage
Wolfe, M. 2012. Putting on the brakes or pressing on the gas? Media attention and the speed of policymaking. ***Policy Studies Journal,*** 40: 109–126.
Womack, K. L. 1996. Do brokerage analysts' recommendations have investment value? ***Journal of Finance,*** 51: 137–167.
Wooldridge, J. M. 2010. ***Econometric analysis of cross section and panel data.*** Cambridge, MA: MIT Press.
Zashin, E., & Chapman, P. C. 1974. The uses of metaphor and analogy. ***Journal of Politics,*** 36: 290–326.
Zavyalova, A., Pfarrer, M. D., & Reger, R. K. 2016. Celebrity and infamy? The consequences of media narratives about organizational identity. ***Academy of Management Review,*** online first doi:10.5465/amr.2014.0037.
Zavyalova, A., Pfarrer, M. D., Reger, R. K., & Shapiro, D. L. 2012. Managing the message: The effects of firm actions and industry spillovers on media coverage following wrongdoing. ***Academy of Management Journal***, 55: 1097–1101.

TABLES AND FIGURES

TABLE 1

Examples of Metaphorical Communication Used by CEOs in Conference Calls*

CEO Statement	Type of Figure	CEO (Company/ Year/ Quarter)	Target Domain
"We didn't tell you what it was, and you will have to wait until we announce it. Just like Christmas. But Santa is coming."	Analogy	Michael Dell (Dell/2004/ Q3)	Product launch
"…it's a little bit like breaking in a new Maserati. The first thousand miles, you are not going to step on the gas too hard."	Analogy	Howard Pien (Chiron/ 2005/Q3)	Restructuring process
"Both parties have input on a plan, a detailed plan, so I would say we are both in the front seat of the car. In Phase I, we are in the driver's seat; in the Phase II, they take over the driver's seat. But each is navigating with the other."	Metaphor	Daniel Welch (InterMune/ 2007/Q1)	Business partnership
"It feels like we just finished the preseason and we're suited up now and ready to play the Super Bowl again this year."	Metaphor	Brad Smith (Intuit/2007/ Q1)	Performance outlook
"We've been actually watching that fairly closely because otherwise you build a kind of a ticking time bomb, and certainly we don't want to do that […]."	Metaphor	Norman Schwartz (Bio-Rad/ 2008/Q4)	Inventory level
"It is not a fixed panel or closed system. I like to think about it just like the i-Tunes music model, where customers can pick and choose their own play lists and [are] not necessarily constrained to buying an entire album when all they want to purchase is a subset of the information."	Analogy	Kevin King (Affymetrix/ 2009/Q3)	Product policy
"We are lean, but we have, I would say, good muscles. We are in good shape. We should be able to run pretty fast whenever it's required."	Metaphor	Lukas Braun-schweiler (Dionex/2009/Q3)	Performance outlook
"So look, at the end of the day, our customers want a cheaper price, we want a higher price, so the battle will be fought in that basis […]."	Metaphor	Steve Dubin (Martek/2009/Q4)	Pricing
"That's the biggest dark cloud that we're continually looking at, and then the sunshine that's lurking behind that is the commercial refresh and the rate at which that progresses. There is a moon there as well which is the strength in Asia, which is significant."	Analogy	John Coyne (Western Digital/ 2010/Q4)	Performance outlook
"And then, on the front of that, Todd, if you think about Bayesian-type forecasting algorithms, which is how they forecast hurricanes. Being from South Louisiana, I know all about that. You watch every day and see how it moved and then how -- where it's expected to strike landfall, and the Clinical trial is the same way."	Analogy	Joseph Herring (Covance/ 2011/Q1)	R&D

* In chronological order.

TABLE 2
Correlations and Descriptive Statistics of Analysis I[a]

	Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Favorability of journalists' reporting	0.03	0.32	1.00																			
2	CEO's use of metaphorical communication	0.01	0.01	0.00	1.00																		
3	Prior firm performance change	0.01	0.12	–0.06	0.00	1.00																	
4	Prior firm performance volatility	0.09	0.09	–0.04	–0.02	0.13*	1.00																
5	Negative earnings surprise	0.05	0.15	0.03	–0.09*	–0.01	0.06	1.00															
6	Positive earnings surprise	0.16	0.29	0.07	0.05	0.11*	0.16*	–0.17*	1.00														
7	Firm size	8.66	1.65	–0.10*	0.12*	–0.19*	–0.35*	–0.30*	–0.22*	1.00													
8	Number of press releases	441.34	556.05	–0.05	0.01	–0.22*	–0.25*	–0.15*	–0.10*	0.63*	1.00												
9	Media attention to the firm	149.28	241.77	–0.06	0.07	–0.18*	–0.22*	–0.11*	–0.09	0.57*	0.87*	1.00											
10	CEO age	52.74	6.51	0.00	0.05	0.03	–0.03	–0.07	–0.15*	0.26*	–0.07	–0.03	1.00										
11	CEO tenure	3.61	3.60	0.00	–0.06	0.09	0.05	0.01	0.06	–0.15*	–0.06	–0.08	0.10*	1.00									
12	CEO duality	0.50	0.50	–0.03	–0.08	–0.02	0.01	–0.16*	–0.03	0.21*	0.14*	0.15*	0.21*	0.29*	1.00								
13	Contender	0.49	0.50	0.00	–0.02	0.01	0.15*	0.03	0.03	–0.12*	–0.20*	–0.22*	0.04	–0.26*	–0.17*	1.00							
14	Outsider	0.34	0.47	0.00	0.01	0.09	–0.15*	0.02	–0.05	–0.02	0.08	0.03	–0.01	0.04	0.00	–0.70*	1.00						
15	Media attention to the CEO	2.97	7.24	–0.03	0.08	–0.12*	–0.16*	–0.05	–0.07	0.37*	0.65*	0.80*	–0.11*	–0.07	0.07	–0.18*	0.03	1.00					
16	CEO celebrity	0.00	0.05	0.02	–0.01	–0.02	–0.03	–0.01	–0.02	0.10*	0.10*	0.03	0.04	–0.03	–0.05	0.05	–0.03	0.01	1.00				
17	CEO background (Sales & Marketing)	0.40	0.49	–0.02	0.00	0.06	0.06	0.13*	0.13*	–0.18*	0.03	–0.05	–0.39*	–0.08	–0.15*	0.05	0.07	–0.05	–0.04	1.00			
18	CEO background (Finance)	0.14	0.35	0.04	0.15*	–0.04	0.06	–0.05	–0.06	0.09*	0.01	0.05	0.19*	–0.05	–0.01	0.02	–0.10*	0.02	0.12*	–0.11*	1.00		
19	Number of statements WSJ	7.70	8.78	–0.14*	0.08	–0.06	–0.12*	–0.12*	–0.11*	0.29*	0.32*	0.26*	0.00	–0.05	–0.05	–0.05	0.06	0.23*	–0.01	0.00	–0.03	1.00	
20	Number of statements NYT	4.55	8.43	–0.07	0.08	–0.02	–0.07	–0.10*	–0.03	0.21*	0.24*	0.30*	0.08	0.06	0.06	–0.04	0.04	0.26*	–0.01	–0.10*	0.08	0.17*	1.00
21	Share of the CEO's words	0.38	0.15	–0.05	0.16*	0.01	–0.01	0.13*	0.07	–0.15*	–0.07	–0.13*	–0.22*	–0.21*	–0.16*	0.03	0.12*	–0.10*	0.06	0.36*	0.05	–0.12*	–0.08
22	CFO involvement	1.15	2.07	0.02	–0.15*	0.09	0.04	–0.04	0.05	0.03	0.01	0.02	0.04	0.21*	0.15*	0.01	–0.06	0.00	–0.01	–0.05	–0.04	0.05	0.03
23	CEO future orientation	0.14	0.07	0.05	–0.10*	0.13*	0.18*	0.01	0.07	–0.15*	–0.14*	–0.10*	0.09	0.06	0.12*	0.06	–0.05	–0.04	0.04	–0.13*	0.05	0.01	0.00
24	CEO image-based language	0.05	0.01	–0.09	0.15*	–0.03	–0.13*	–0.02	0.07	0.07	0.10*	0.06	–0.20*	0.01	–0.18*	–0.03	0.04	0.07	–0.09	0.10*	–0.07	0.02	–0.06
25	CEO comprehensibility	14.32	1.81	–0.03	–0.12*	0.05	0.10*	–0.11*	–0.04	–0.04	–0.13*	–0.18*	0.09	–0.14*	0.02	0.08	–0.09	–0.14*	0.02	0.00	–0.04	–0.04	–0.14*
26	CEO numerical language	0.02	0.01	0.02	–0.07	0.12*	0.07	0.00	0.01	–0.14*	–0.17*	–0.12*	0.05	0.03	0.08	0.13*	–0.09	–0.06	–0.06	–0.07	0.01	–0.09	0.08
27	CEO non-contentual words	0.13	0.13	0.04	–0.12*	0.13*	0.11*	0.00	–0.03	–0.03	–0.04	0.05	0.18*	–0.02	0.08	0.01	0.04	0.08	0.00	–0.11*	0.05	0.03	0.08
28	CEO optimism	0.31	0.22	–0.03	0.12*	0.00	0.02	–0.14*	0.07	0.05	0.19*	0.11*	–0.04	–0.05	0.02	–0.09	0.10*	0.07	0.01	0.08	–0.06	0.08	0.03

	Variable	21	22	23	24	25	26	27	28
21	Share of the CEO's words	1.00							
22	CFO involvement	–0.44*	1.00						
23	CEO future orientation	–0.17*	0.13*	1.00					
24	CEO image-based language	0.09	–0.05	–0.37*	1.00				
25	CEO comprehensibility	0.01	–0.20*	0.16*	–0.23*	1.00			
26	CEO numerical language	–0.05	–0.02	0.26*	–0.15*	–0.04	1.00		
27	CEO non-contentual words	–0.37*	0.15*	0.39*	–0.45*	0.16*	0.40*	1.00	
28	CEO optimism	–0.07	–0.25*	–0.15*	0.12*	0.21*	–0.07	0.03	1.00

[a] Dummies for running quarters are not included in this table. N = 449.
* $p < .05$.

TABLE 3

Correlations and Descriptive Statistics of Analysis II[a]

	Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	Favorability of analysts' evaluations	0.20	1.26	1.00																					
2	CEO's use of metaphorical communication	0.01	0.01	–0.07*	1.00																				
3	Prior firm performance change	0.02	0.12	0.12*	–0.01	1.00																			
4	Prior firm performance volatility	0.11	0.13	0.02	–0.08*	0.12*	1.00																		
5	Negative earnings surprise	0.07	0.20	–0.32*	–0.08*	0.00	0.09*	1.00																	
6	Positive earnings surprise	0.19	0.34	0.24*	–0.07	0.13*	0.18*	–0.20*	1.00																
7	Firm size	7.85	1.88	–0.03	0.22*	–0.14*	–0.32*	–0.27*	–0.20*	1.00															
8	Number of press releases	290.63	466.26	0.00	0.10*	–0.17*	–0.21*	–0.17*	–0.10*	0.65*	1.00														
9	Media attention to the firm	91.33	194.87	0.00	0.15*	–0.14*	–0.18*	–0.13*	–0.09*	0.57*	0.87*	1.00													
10	Debt–to–equity ratio	1.80	2.55	0.01	0.01	0.15*	0.05	0.01	0.04	–0.14*	0.01	0.04	1.00												
11	Dividends per share	0.05	0.13	–0.04	0.13*	0.02	–0.07*	–0.11*	–0.15*	0.45*	0.21*	0.20*	–0.17*	1.00											
12	Liquidity	0.37	0.24	0.04	–0.20*	0.22*	0.40*	0.21*	0.12*	–0.64*	–0.33*	–0.29*	0.14*	–0.25*	1.00										
13	Cash flow from operating activities	0.89	2.42	0.00	0.05	–0.09*	–0.14*	–0.12*	–0.13*	0.59*	0.59*	0.57*	–0.09*	0.36*	–0.28*	1.00									
14	Abnormal returns	–0.05	3.33	0.09*	0.00	–0.02	–0.07	–0.07	–0.02	0.04	0.03	–0.01	0.02	–0.04	–0.01	0.03	1.00								
15	Number of shares traded	23.46	28.28	–0.01	–0.06	0.12*	0.09*	0.27*	0.05	–0.17*	–0.13*	–0.10*	0.21*	–0.13*	0.15*	–0.14*	0.01	1.00							
16	CEO age	53.03	6.06	0.03	0.01	–0.02	–0.07	–0.04	–0.12*	0.18*	0.01	0.05	–0.07*	0.33*	–0.10*	0.15*	0.01	–0.08*	1.00						
17	CEO tenure	3.74	3.62	0.01	–0.09*	0.02	–0.02	–0.01	0.04	–0.13*	–0.10*	–0.12*	0.03	–0.05	0.14*	–0.09*	0.01	0.15*	0.17*	1.00					
18	CEO duality	0.44	0.50	–0.04	–0.01	–0.01	–0.05	–0.12*	–0.03	0.26*	0.17*	0.15*	–0.02	0.16*	–0.17*	0.21*	–0.03	0.07	0.17*	0.27*	1.00				
19	Contender	0.48	0.50	–0.01	–0.03	0.04	0.13*	0.01	0.05	–0.07	–0.14*	–0.16*	–0.03	0.04	0.13*	–0.04	–0.09*	0.10*	0.07	–0.29*	–0.08*	1.00			
20	Outsider	0.38	0.49	0.02	0.02	0.03	–0.09*	0.03	–0.07	–0.06	0.07*	0.04	0.06	–0.10*	–0.11*	–0.02	0.08*	–0.07	–0.10*	0.02	–0.04	–0.76*	1.00		
21	Media attention to the CEO	1.79	5.90	–0.01	0.13*	–0.09*	–0.13*	–0.06	–0.07	0.36*	0.63*	0.79*	0.03	0.10*	–0.18*	0.39*	–0.02	–0.05	–0.05	–0.10*	0.06	–0.12*	0.04	1.00	
22	CEO celebrity	0.00	0.04	0.00	–0.01	–0.02	–0.02	–0.01	–0.02	0.09*	0.12*	0.04	–0.02	0.04	–0.04	0.18*	0.02	–0.01	0.03	–0.03	–0.04	0.04	–0.03	0.02	1.00
23	CEO background (Sales & Marketing)	0.37	0.48	0.00	0.02	0.01	–0.02	0.04	0.06	–0.06	0.09*	0.01	0.00	–0.17*	0.12*	–0.05	0.03	–0.01	–0.45*	–0.14*	–0.09*	0.05	0.03	0.01	–0.03
24	CEO background (Finance)	0.16	0.37	0.03	0.12*	–0.03	0.05	0.01	–0.02	0.02	0.01	0.07	–0.06	0.19*	0.02	0.11*	0.04	0.00	0.19*	–0.09*	–0.05	0.00	–0.06	0.03	0.09*
25	Number of analysts following	19.19	10.08	0.03	0.12*	–0.09*	–0.19*	–0.21*	–0.12*	0.61*	0.53*	0.52*	0.10*	0.07	–0.21*	0.34*	0.07*	0.00	–0.02	–0.01	0.05	–0.07	–0.08*	0.37*	0.03
26	Share of the CEO's words	0.42	0.16	–0.01	0.04	0.00	0.04	0.09*	0.06	–0.29*	–0.10*	–0.13*	–0.16*	–0.06	0.10*	–0.06	0.06	0.00	–0.24*	–0.20*	–0.19*	–0.02	0.17*	–0.09*	0.04
27	CFO involvement	0.96	1.12	–0.03	–0.13*	0.04	–0.04	–0.03	0.03	0.13*	0.00	0.01	0.03	0.08*	–0.10*	–0.01	–0.06	–0.03	0.14*	0.18*	0.17*	–0.02	–0.07	–0.01	–0.02
28	CEO future orientation	0.15	0.07	0.04	–0.16*	0.12*	0.12*	0.08*	0.08*	–0.19*	–0.14*	–0.10*	–0.07	–0.02	0.18*	–0.11*	–0.04	0.08*	0.07	0.15*	0.10*	0.06	–0.08*	–0.04	0.02
29	CEO image-based language	0.05	0.01	0.00	0.22*	–0.06	–0.19*	–0.10*	0.00	0.11*	0.06	0.02	–0.01	–0.05	–0.15*	–0.04	0.00	–0.05	–0.12*	–0.03	–0.15*	–0.05	0.06	0.03	–0.07
30	CEO comprehensibility	14.32	1.82	0.10*	–0.06	0.02	0.07	–0.08*	–0.04	0.02	–0.05	–0.11*	–0.03	–0.04	0.09*	–0.08*	–0.04	0.00	0.05	–0.14*	0.01	0.19*	–0.18*	–0.08*	0.01
31	CEO numerical language	0.02	0.01	0.04	–0.10*	0.10*	–0.01	–0.01	0.00	–0.16*	–0.14*	–0.09*	0.03	–0.09*	–0.13*	–0.12*	–0.02	0.13*	0.02	0.04	0.04	0.11*	–0.07*	–0.04	–0.05
32	CEO non-contentual words	0.13	0.12	0.04	–0.14*	0.13*	0.14*	0.06	0.00	–0.04	–0.02	0.07	0.05	0.02	0.03	–0.03	–0.02	0.19*	0.14*	0.10*	0.07	0.04	–0.02	0.09*	–0.01
33	CEO optimism	0.30	0.21	0.06	0.09*	0.00	–0.04	–0.09*	0.02	0.05	0.14*	0.05	0.08*	–0.13*	0.00	0.02	0.02	–0.06	0.00	–0.02	–0.03	0.01	0.01	0.03	0.01

	Variable	23	24	25	26	27	28	29	30	31	32	33
23	CEO background (Sales & Marketing)	1.00										
24	CEO background (Finance)	–0.17*	1.00									
25	Number of analysts following	0.12*	0.01	1.00								
26	Share of the CEO's words	0.27*	0.07	–0.31*	1.00							
27	CFO involvement	–0.13*	–0.05	0.11*	–0.58*	1.00						
28	CEO future orientation	–0.07	0.03	–0.13*	–0.08*	0.10*	1.00					
29	CEO image-based language	0.11*	–0.05	0.12*	0.08*	–0.08*	–0.38*	1.00				
30	CEO comprehensibility	0.01	–0.08*	0.06	–0.03	–0.07*	0.10*	–0.16*	1.00			
31	CEO numerical language	–0.07	0.01	–0.23*	–0.01	0.07	0.23*	–0.11*	–0.11*	1.00		
32	CEO non-contentual words	–0.16*	0.05	–0.06	–0.31*	0.20*	0.41*	–0.45*	0.07	0.38*	1.00	
33	CEO optimism	0.12*	–0.13*	0.11*	–0.12*	–0.03	–0.08*	0.09*	0.20*	–0.03	0.03	1.00

[a] Dummies for running quarters are not included in this table. N = 624.

* $p < .05$.

TABLE 4

Results of Robust Fixed–Effects Analysis of CEOs' Use of Metaphorical Communication on the Favorability of Journalists' Reporting[a]

	Journalists' Favorability		
Variable	**(1)**	**(2)**	**(3)**
Prior firm performance change	–0.26^{+}	–0.31^{+}	–0.27^{+}
	(0.15)	(0.15)	(0.16)
Prior firm performance volatility	–0.10	–0.06	–0.04
	(0.27)	(0.26)	(0.27)
Negative earnings surprise†	0.03	0.05	0.21
	(0.15)	(0.15)	(0.15)
Positive earnings surprise†	0.07	0.06	0.08
	(0.08)	(0.08)	(0.08)
Firm size	–0.04	–0.03	–0.03
	(0.05)	(0.05)	(0.05)
Number of press releases	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)
Media attention to the firm	–0.00	–0.00	–0.00
	(0.00)	(0.00)	(0.00)
CEO age	–0.00	–0.00	–0.00
	(0.00)	(0.00)	(0.00)
CEO tenure	–0.00	–0.00	–0.00
	(0.01)	(0.01)	(0.01)
CEO duality	–0.04	–0.04	–0.05
	(0.04)	(0.04)	(0.04)
Contender	0.01	0.02	0.02
	(0.04)	(0.04)	(0.04)
Outsider	0.00	0.01	–0.01
	(0.06)	(0.05)	(0.06)
Media attention to the CEO	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)
CEO celebrity	0.20	0.19	0.18
	(0.12)	(0.12)	(0.12)
CEO background (Sales & Marketing)	–0.04	–0.04	–0.04
	(0.05)	(0.05)	(0.05)
CEO background (Finance)	–0.01	–0.02	–0.01
	(0.05)	(0.05)	(0.05)
Number of statements WSJ	–0.01***	–0.01***	–0.01***
	(0.00)	(0.00)	(0.00)
Number of statements NYT	–0.00	–0.00	–0.00
	(0.00)	(0.00)	(0.00)
Share of CEO's words	–0.31	–0.37	–0.39^{+}
	(0.22)	(0.23)	(0.22)
CFO involvement	0.00	0.01	0.01
	(0.01)	(0.01)	(0.01)
CEO future orientation	0.17	0.17	0.18
	(0.25)	(0.26)	(0.26)
CEO image-based language	–2.78^{+}	–3.01*	–2.85*
	(1.45)	(1.42)	(1.39)
CEO comprehensibility	–0.02	–0.02	–0.02
	(0.01)	(0.01)	(0.01)
CEO numerical language	3.40	3.41	3.06
	(2.74)	(2.57)	(2.50)
CEO non-contentual words	–0.28	–0.26	–0.28
	(0.19)	(0.19)	(0.18)
CEO optimism	0.01	–0.02	–0.01
	(0.10)	(0.10)	(0.09)
CEO's use of metaphorical communication†		6.16*	7.64**
		(2.82)	(2.75)
CEO's use of metaphorical communication x Negative earnings surprise			53.57*
			(22.49)
CEO's use of metaphorical communication x Positive earnings surprise			–0.16
			(11.23)
N	449	449	449
R^2 within	0.15	0.16	0.18
Log likelihood	–75.99	–69.16	–63.74
LR χ^2 against null model	70.23***	77.99***	88.83***

$^{+}$ p < .1; * p < .05; ** p < .01; *** p < .001.

[a] Robust standard errors in parentheses. Models include dummies for each quarter from 2002 to 2011.

† Variable is centered at its mean.

TABLE 5
Results of Fixed–Effects Analysis of CEOs' Use of Metaphorical Communication on the Favorability of Analysts' Evaluations[a]

	Analysts' Favorability					
	EPS forecast measure[b]			Recommendation measure[c]		
Variable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Prior firm performance change	0.40	0.50	0.49	–0.50	–0.42	–0.25
	(0.53)	(0.52)	(0.52)	(0.49)	(0.53)	(0.47)
Prior firm performance volatility	–0.62^{+}	–0.67^{+}	–0.60	–0.50	–0.53	–0.59
	(0.35)	(0.36)	(0.36)	(0.65)	(0.65)	(0.63)
Negative earnings surprise†	–2.30***	–2.29***	–2.60***	–0.34	–0.23	–0.30
	(0.38)	(0.37)	(0.31)	(0.42)	(0.40)	(0.40)
Positive earnings surprise†	0.67*	0.68*	0.70**	0.29*	0.27*	0.35*
	(0.27)	(0.27)	(0.26)	(0.13)	(0.13)	(0.16)
Firm size	–0.43^{+}	–0.41^{+}	–0.40^{+}	0.02	0.12	0.11
	(0.23)	(0.22)	(0.22)	(0.28)	(0.26)	(0.26)
Number of press releases	0.00	0.00	0.00	–0.00	–0.00	–0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Media attention to the firm	0.00	0.00	0.00	–0.00	–0.00	–0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Debt–to–equity ratio	0.02	0.02	0.02	0.01	0.02	0.03
	(0.01)	(0.01)	(0.01)	(0.04)	(0.04)	(0.03)
Dividends per share	–0.76^{+}	–0.71^{+}	–0.79^{+}	–0.40	–0.04	–0.01
	(0.39)	(0.41)	(0.41)	(1.23)	(1.08)	(1.17)
Liquidity	–0.78^{+}	–0.79^{+}	–0.77	0.96^{+}	1.05*	1.06^{+}
	(0.44)	(0.43)	(0.47)	(0.56)	(0.52)	(0.56)
Cash flow from operating activities	–0.02	–0.02	–0.02	0.00	–0.00	0.00
	(0.02)	(0.02)	(0.02)	(0.00)	(0.00)	(0.00)
Abnormal returns	0.03	0.03	0.03	0.02	0.02	0.02
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Number of shares traded	0.01	0.01	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
CEO age	–0.01	–0.00	–0.01	–0.01	–0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)
CEO tenure	–0.02	–0.02	–0.02	0.05^{+}	0.04^{+}	0.04
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
CEO duality	–0.15	–0.14	–0.11	0.19	0.27	0.29
	(0.15)	(0.15)	(0.15)	(0.22)	(0.19)	(0.19)
Contender	–0.08	–0.10	–0.08	0.22	0.20	0.25
	(0.21)	(0.21)	(0.21)	(0.32)	(0.31)	(0.30)
Outsider	0.01	0.03	0.08	–0.02	–0.15	–0.14
	(0.21)	(0.22)	(0.21)	(0.27)	(0.27)	(0.29)
Media attention to the CEO	–0.01	–0.01	–0.01	0.00	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
CEO celebrity	–0.72	–0.73	–0.64	0.04	0.05	0.00
	(0.59)	(0.60)	(0.60)	(0.64)	(0.59)	(0.60)
CEO background (Sales & Marketing)	–0.07	–0.05	–0.05	0.39^{+}	0.31	0.27
	(0.15)	(0.15)	(0.16)	(0.23)	(0.23)	(0.24)
CEO background (Finance)	0.21	0.22	0.19	–0.09	–0.08	–0.06
	(0.17)	(0.18)	(0.18)	(0.26)	(0.25)	(0.28)
Number of analysts following	–0.01	–0.01	–0.01	0.01	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)
Share of CEO's words	–0.29	–0.27	–0.39	–0.72	–0.50	–0.65
	(0.55)	(0.55)	(0.54)	(0.61)	(0.61)	(0.59)
CFO involvement	–0.04	–0.05	–0.05	–0.02	–0.02	–0.02
	(0.04)	(0.04)	(0.04)	(0.02)	(0.02)	(0.02)
CEO future orientation	–0.09	–0.09	–0.24	–1.00	–1.17	–1.38
	(1.13)	(1.12)	(1.08)	(1.28)	(1.24)	(1.21)
CEO image-based language	–1.09	–0.05	0.76	1.46	2.85	3.59
	(3.64)	(3.87)	(3.81)	(8.70)	(8.53)	(8.39)
CEO comprehensibility	0.09**	0.09**	0.08**	0.04	0.03	0.03
	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)
CEO numerical language	13.38^{+}	13.77^{+}	14.63*	–3.56	–6.71	–9.71
	(7.09)	(6.98)	(7.18)	(11.04)	(10.64)	(10.78)
CEO non-contentual words	0.28	0.22	0.29	–0.96	–1.03	–1.04
	(0.66)	(0.64)	(0.63)	(0.81)	(0.76)	(0.73)
CEO optimism	0.39	0.45	0.35	–0.03	0.04	–0.06
	(0.34)	(0.34)	(0.34)	(0.29)	(0.28)	(0.27)
CEO's use of metaphorical communication†		–13.76*	–15.42*		–15.79^{+}	–19.35*
		(6.41)	(5.88)		(8.55)	(7.79)
CEO's use of metaphorical communication x Negative earnings surprise			–120.25**			–107.30*
			(35.51)			(50.80)
CEO's use of metaphorical communication x Positive earnings surprise			14.96			34.04^{+}
			(24.32)			(19.40)
N	624	624	624	270	270	270
R^2 within	0.29	0.29	0.30	0.29	0.31	0.34
Log likelihood	–907.09	–905.13	–899.91	–223.56	–220.66	–214.84
LR χ^2 against null model	209.86***	213.79***	224.22***	92.98***	98.79***	110.43***

$^{+}$ p < .1; * p < .05; ** p < .01; *** p < .001.
[a] Robust standard errors in parentheses. Models include dummies for each quarter from 2002 to 2011.
[b] Based on 6,969 before/after the conference call comparisons of individual analysts' EPS forecasts.
[c] Based on 393 before/after the conference call comparisons of individual analysts' recommendations.
† Variable is centered at its mean.

FIGURE 1

The Interaction Effects of CEO's Use of Metaphorical Communication and Negative Earnings Surprise on the Favorability of Infomediaries' Evaluations

FIGURE 1a

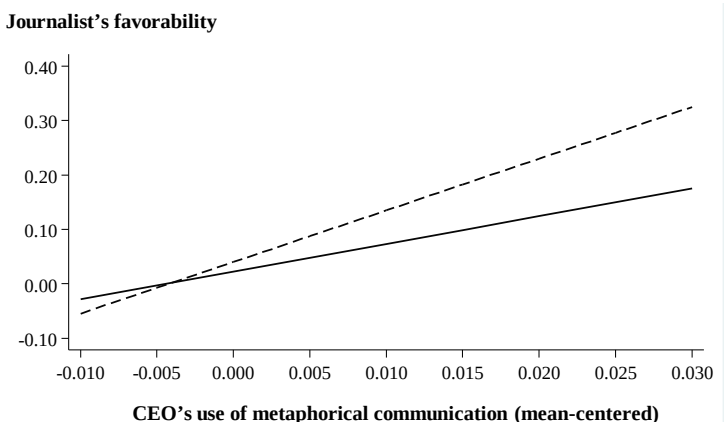


FIGURE 1b

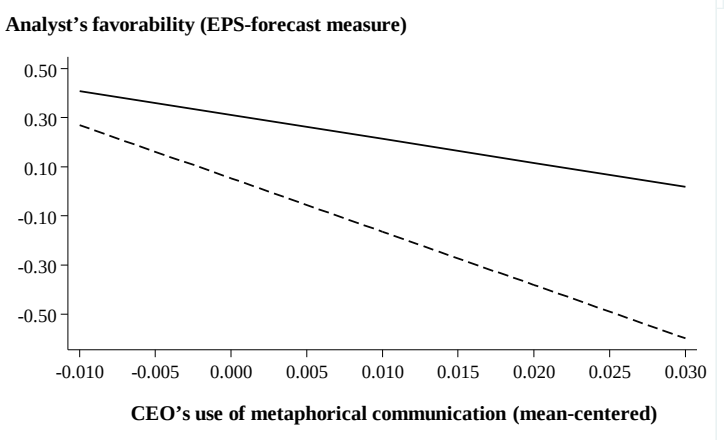
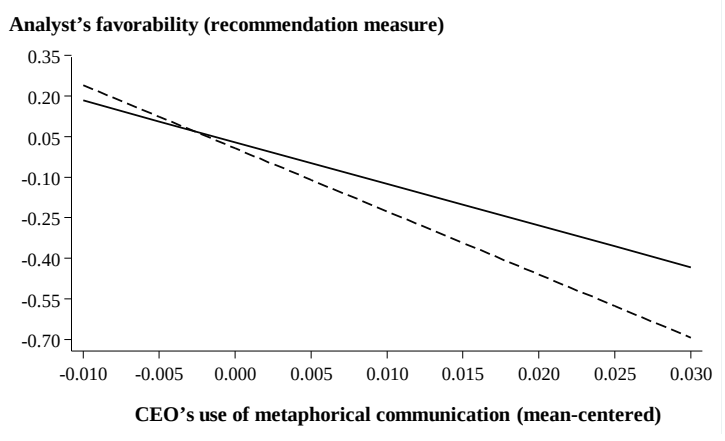


FIGURE 1c



ONLINE APPENDIX:

FURTHER ROBUSTNESS CHECKS AND INFORMATION, AND DATA SOURCES

Additional Robustness Checks

Although our research design addresses numerous concerns regarding other possible explanations for our findings, such as omitted variables, simultaneity, measurement errors, and inconsistent inferences (Antonakis, Bendahan, Jacquart, & Lavie, 2010), we ran extensive additional robustness tests.

In-/exclusion of covariates. Generally, even though the econometric literature indicates that a higher number of covariates might produce more *conservative* estimations (Wooldridge, 2010)[31], we wished to ensure that our estimates were not sensitive to the inclusion of a large number of covariates.

In particular, apart from the variables removed when checking for multicollinearity, we reran Analyses I and II without firm size, CEO age, CEO tenure, CEO duality, contender, outsider, media attention to the CEO, both CEO background variables, CFO involvement, CEO future orientation, CEO non-contentual words, and CEO optimism. In addition, we removed the number of press releases and media attention to the firm in Analysis I. In Analysis II, we removed the debt-to-equity ratio, liquidity, cash flow from operating activities, abnormal returns, and number of shares traded. The results were unaffected in terms of the direction and significance of the coefficients.

In another check, we reran the models in Analysis I and included additional variables from Analysis II, such as the debt-to-equity ratio, liquidity, and operating cash flow. The results were again similar to those of the main analysis. Moreover, as the use of ratios or

[31] A reader might view testing for sensitivity to the inclusion of many covariates as particularly important for Analysis I given the non-significant pairwise correlation between the CEOs' use of metaphorical communication and the favorability of journalists' reporting (see Table 2). However, it is crucial to note that a pairwise correlation $(\rho_{x,y})$ is quasi a priori a biased parameter because it only represents a scaled regression coefficient $\left(\beta_1 \frac{\sigma_x}{\sigma_y}\right)$ from the simple model $y = \beta_0 + \beta_1 x + e$. If y is influenced by any other factor (e.g., z) that is correlated with x, then both $\rho_{x,y}$ and β_1 present biased estimators. Therefore, we disregard the non-significant pairwise correlation in the test of Hypothesis 1.

proportions with similar input variables may cause spurious outcomes (Wieseman, 2010), we dropped those proportions and still obtained results similar to those of our main analysis. Finally, following Benner's (2010) argument that infomediaries might respond negatively if incumbents increase investments in discontinuous technologies, we included a measure of strategic investments in the focal quarter (Benner & Ranganathan, 2012): the natural logarithm of the sum of capital and R&D expenditures. In line with conventional practice, we included a dummy variable, *no reported R&D expenditures*, which was set equal to 1 for quarters in which R&D expenditures were not reported. The results remained the same.

Individual analysts' effects. We ran a particularly detailed check of Analysis II to examine whether individual effects at the analyst level might provide alternative explanations for our group-level findings. In this analysis, we used multilevel modelling (*xtmixed, mle* in Stata), and included not only dummies to control for unobservable effects of each analyst and each analyst's firm (Deephouse & Heugens, 2009) but also a control for time-variant, individual-analyst forecast ability (Fanelli et al., 2009). Given the sizes of our samples, we only used the EPS-based data on analysts' favorability for the robustness check at this level.[32] In line with the data structure, we specified a three-level model with multiple observations over time (level 3) nested within CEOs (level 2), who were nested within firms (level 1). As crossed effects occur for the time dimension, we followed Rabe-Hesketh and Skrondal (2008) in creating an artificial level in which all firms, CEOs, and quarters are nested.[33] We added new controls to those included in our main analysis. First, we controlled for unobservable

[32] Given the significantly lower number of observations for changes in recommendations (n = 393 pairs of individual recommendations before/after the call) than for changes in EPS forecasts (n = 9,076), the number of predictors in this robustness check with multiple dummy variables added is too high relative to the number of observations of analysts' recommendations to achieve meaningful results. This was indicated by warnings in Stata's *xtmixed* command. However, our hypothesized predictions were supported for recommendations when we reduced the model's complexity by dropping the dummy variables for analysts, analysts' firms, and industry.

[33] As a check, we inverted the structure and used the analysts, their firms, and time as levels while controlling for CEOs and firms with dummies. The results were not affected by this change in model specification. Notably, a higher-order model with five levels (i.e., CEO, firms, analysts, employers, and time) would be problematic, as there would be additional crossed effects between analysts and CEOs (e.g., analysts who issue EPS forecasts for different firms in our sample in the same quarter).

effects of each analyst and each analyst's firm (Deephouse & Heugens, 2009) by including dummies. These dummies also account for the data structure. Second, we controlled for each analyst's forecast ability, assuming that particularly accurate analysts might be less impressionable (Fanelli et al., 2009). We calculated this variable using the *mean forecast error* for each analyst in the year of the focal call:

$$Mean\ forecast\ error\ of\ analyst = \frac{1}{N}\sum_{i=1}^{N}\left|\frac{Actual\ EPS_i - EPS\ Forecast_i}{EPS\ Forecast_i}\right|$$

where N denotes the total number of one-year EPS forecasts the analyst issued about any firm within the given year. Third, we used a dummy variable on the eight-digit GICS level to control for any industry effects. The results of these robustness checks corroborate our findings and can be found in Table A.I. The sequence of the models follows the same logic as our main analyses.

[Insert Table A.I about here]

Additional controls. In another robustness check for Analysis II, we accounted for the idea that analysts' favorability could be affected by whether management provides forecast guidance during the conference call. In this regard, we followed recent research (e.g., Chen, Crossland, & Luo, 2015) in collecting data from First Call's Company Issued Guidelines database (CIG). We created a binary variable that took a value of "1" if a firm in our sample issued forecast guidance on the date of a conference call. We included this variable in Analysis II as an additional control, with results similar to those reported in our main analysis.

Even though CEOs rarely use stories as a rhetorical tool in conference calls (and, if so, almost exclusively in the Q&A part of the call), we also re-ran our models with a control for the number and length of stories told by CEOs. In contrast to metaphors, stories a priori feature agonists that are part of a sequence of interrelated events (Toolan, 1988) and they have been found to be influential in a financial-market context (Martens, Jennings, & Jennings, 2007). However, we observed no change in the results.

In other robustness checks, we included dummy variables for CEOs' prior experience in production and operations, technology R&D and science, legal and compliance, human resources, and strategy. In addition, we tested for CEOs' educational backgrounds by including dummy variables for CEOs' degree (i.e., MBA, BS/MSc, BA/MA, LLB/JD, CPA/CFA/CMA, and PhD/MD). Our main results were unaffected.

Simultaneity. Simultaneity concerns might be relatively non-critical in our study because CEOs are relatively unlikely to be able to anticipate changes in the evaluations of journalists or analysts after a given conference call. Nevertheless, in Analyses I and II, we tested for the possibility that CEOs might use more metaphorical language *during* a conference call in response to favorable journalist reporting *before* a conference call. We did so by regressing CEOs' use of metaphorical communication on the respective measures of favorability of infomediaries' reporting$_{t-1}$. After controlling for the same sets of variables included in Analyses I and II, respectively, we did not find any indications that prior favorability in infomediaries' reporting significantly determines CEOs' use of metaphorical communication.

Endogeneity. One particularly important alternative explanation for our results could be that CEOs' use of metaphorical communication might be driven, in part, by the same factors that also affect infomediaries' favorability. Such endogeneity is important because it inherently limits our ability to make causal claims based on our data. Moreover, given the current state of knowledge on metaphorical communication, it is impossible to entirely rule out such endogeneity. Apart from marginally related systematic evidence, no research exists that allows us to develop a clear and comprehensive theoretical model of the drivers of CEO's

use of metaphorical communication.[34] As such, developing a baseline first-stage model of the drivers of the use of metaphorical communication is outside the scope of our paper. Furthermore, we are unable to randomly assign "metaphorical communication" across CEOs through an experiment. However, to at least tentatively scrutinize whether such endogeneity taints our results, we examined the outcomes of our simultaneity analyses and found that no theoretically intuitive factors included in our data set, such as strategic change (Benner & Ranganathan, 2012; Kotter, 1996), significantly predicted CEOs' use of metaphorical communication. Moreover, considering that CEOs might feel tempted to use metaphorical communication in complex circumstances, we regressed CEOs' use of metaphorical communication on two measures of complexity that were not included in our set of controls: (1) external complexity in the form of munificence, instability, and complexity[35] (Keats & Hitt, 1988); and (2) internal complexity as measured by the number of business segments in the focal firm (Markarian & Parbonetti, 2007). None of these variables had a significant influence on CEOs' use of metaphorical communication (at $p < 0.1$), regardless of whether we included our existing control variables in the models.

In an additional attempt to cope with potential endogeneity, we followed Wiersema and Zhang (2011). More specifically, for Analyses I and II, we first regressed CEOs' use of

[34] We conducted an extensive, systematic review of the literature in cognitive linguistics and related domains to determine whether it was possible to derive a theoretical model predicting CEOs' use of metaphorical communication. Overall, we concluded that a full, generalizable picture of the drivers of metaphorical communication is lacking from a linguist's perspective. Most of the work we identified indicates that certain contextual factors could influence the frequency of metaphor use, especially: (1) whether one communicates with oneself ("inner speech") rather than with others (Fussell & Krauss, 1989); (2) whether the communicator talks about emotions, especially sadness, rather than behavior (e.g., Fainsilber & Ortony, 1987; for overviews, see Fussell & Moss, 1998, and Kronrod & Danziger, 2013); (3) whether the communicator tries to integrate unfamiliar perspectives (Corts & Pollio, 1999); (4) the purpose of the communication (e.g., whether the speaker aims to make a speech more interesting or to clarify an issue (Roberts & Kreuz, 1994); and (5) whether the communicator is addressing a general or specialist audience (Skorczynska & Deignan, 2006). We do not see any obvious, non-speculative reason why these constructs should bias our results. Notably, the fact that we are studying a relatively homogeneous group of CEOs in a relatively homogeneous setting (i.e., conference calls) should account for some of these factors (e.g., the purpose of the communication or the intended audience). Moreover, many of the theories and results found in prior research are hardly generalizable to the CEO-infomediary context (e.g., Fussell & Kreuz, 1998). While we understand that this finding does not rule out endogeneity, it does make us more confident that we did not miss fundamentally important antecedents of metaphorical communication that would bias our results.

[35] We tested all elements separately and as a factor score of all three elements.

metaphorical communication on all control variables in the respective models and then calculated residual values of CEOs' use of metaphorical communication.[36] We then reran Analyses I and II, replacing the observed values of CEOs' metaphorical communication with the residuals. As such, we tested whether the component of CEOs' metaphorical communication that was uncorrelated with our control variables had a significant effect on infomediaries' favorability. In support of our findings, the coefficient of the residuals was positive and significant ($p < 0.05$) for Analysis I, and negative and significant ($p < 0.05$) for Analysis II.

Other checks. We also tested calendar-year dummies and quarter dummies instead of a dummy variable for each unique quarter in our dataset. Our results remained robust. Moreover, we tested whether the moderating effects of negative earnings surprises were due to outliers by winsorizing the negative earnings surprises variable at the 1 percent and 5 percent levels. Our results were not affected by those changes. Further, while the hypothesis that all firm fixed effects are zero was strongly rejected, we recalculated our models using pooled regression with standard errors clustered at the firm level and found consistent results.

Finally, we used change scores for our dependent variables because these scores are "regarded a powerful tool for making causal inferences with nonexperimental data" (Allison, 1990: 93). Despite these advantages, change scores have been criticized for producing inaccurate results, mostly due to potential reliability concerns and concerns related to regression toward the mean (Bergh & Fairbank, 2002). In order to account for both concerns, we implemented regressor variable models (Allison, 1990) in Analyses I and II, which yielded results similar to those obtained from the change-score models.

Additional Information on CEOs' Use of Metaphorical Communication

Readers might be interested in more descriptive details on CEOs' use of metaphorical

[36] To avoid an arbitrary choice of predictors in the first-stage regression, we also ran the endogeneity test with different subsets of predictors. All of them had robust results.

communication. In this regard, fourteen CEOs, used it in two percent or more of their contentual communication. Fourteen CEOs in our sample did not use metaphorical communication at all. The remaining CEOs are approximately normally distributed between these two values. Not surprisingly, the more contentual words a CEO speaks in a conference call, the higher the overall number of metaphorical words in the call (correlation of 0.56). Finally, there does not seem to exist a time trend regarding CEOs' use of metaphorical communication, as it does not systematically increase or decrease along a CEO's tenure.

Overview of Data Sources

Table A.II summarizes the data sources for all variables.

[Insert Table A.II about here]

Table A.I
Results of Multilevel Analysis of CEOs' Use of Metaphorical Communication on the Favorability of Individual Analysts' Evaluations[a]

Variable	(1)	(2)	(3)
Prior firm performance change	0.39***	0.42***	0.42***
	(0.11)	(0.11)	(0.11)
Prior firm performance volatility	0.07	0.07	0.08
	(0.14)	(0.14)	(0.14)
Negative earnings surprise†	–1.45***	–1.46***	–1.78***
	(0.09)	(0.09)	(0.10)
Positive earnings surprise†	0.55***	0.54***	0.54***
	(0.04)	(0.04)	(0.04)
Firm size	0.03	0.04	0.04
	(0.04)	(0.04)	(0.04)
Number of press releases	0.00*	0.00+	0.00+
	(0.00)	(0.00)	(0.00)
Media attention to the firm	–0.00	–0.00	–0.00
	(0.00)	(0.00)	(0.00)
Debt–to–equity ratio	0.01+	0.01+	0.02*
	(0.01)	(0.01)	(0.01)
Dividends per share	–0.02	0.01	–0.07
	(0.15)	(0.15)	(0.15)
Liquidity	–0.02	0.02	0.07
	(0.13)	(0.13)	(0.13)
Cash flow from operating activities	–0.01+	–0.01+	–0.01+
	(0.01)	(0.01)	(0.01)
Abnormal returns	0.02***	0.02***	0.02***
	(0.00)	(0.00)	(0.00)
Number of shares traded	0.00***	0.00***	0.00*
	(0.00)	(0.00)	(0.00)
CEO age	–0.00	–0.00	–0.00
	(0.01)	(0.01)	(0.01)
CEO tenure	0.00	0.00	0.00
	(0.01)	(0.01)	(0.01)
CEO duality	–0.10+	–0.08	–0.08
	(0.06)	(0.06)	(0.06)
Contender	–0.08	–0.09	–0.10
	(0.12)	(0.12)	(0.12)
Outsider	0.09	0.10	0.09
	(0.12)	(0.12)	(0.12)
Media attention to the CEO	–0.00	–0.00	0.00
	(0.00)	(0.00)	(0.00)
CEO celebrity	–1.21***	–1.23***	–1.19***
	(0.27)	(0.27)	(0.27)

(continued)

APPENDIX A.I (continued)

CEO background (Sales & Marketing)	–0.09	–0.08	–0.08
	(0.09)	(0.09)	(0.09)
CEO background (Finance)	0.60***	0.60***	0.60***
	(0.08)	(0.08)	(0.08)
Number of analysts following	–0.01*	–0.01*	–0.01**
	(0.00)	(0.00)	(0.00)
Mean forecast error	–0.03	–0.03	–0.03
	(0.02)	(0.02)	(0.02)
Share of CEO's words	0.06	0.05	0.09
	(0.15)	(0.15)	(0.15)
CFO involvement	–0.02+	–0.03*	–0.02+
	(0.02)	(0.02)	(0.02)
CEO future orientation	–0.37+	–0.39*	–0.47*
	(0.19)	(0.19)	(0.19)
CEO image-based language	–1.37	–1.01	–0.55
	(1.17)	(1.17)	(1.16)
CEO comprehensibility	0.06***	0.06***	0.06***
	(0.01)	(0.01)	(0.01)
CEO numerical language	4.65*	4.65*	5.97**
	(2.18)	(2.18)	(2.17)
CEO non-contentual words	0.12	0.07	0.11
	(0.15)	(0.15)	(0.15)
CEO optimism	0.33***	0.37***	0.30***
	(0.07)	(0.07)	(0.07)
CEO's use of metaphorical communication†		–7.24***	–6.85***
		(1.71)	(1.72)
CEO's use of metaphorical communication x Negative earnings surprise			–75.47*** (14.19)
CEO's use of metaphorical communication x Positive earnings surprise			34.92*** (4.73)
N	6'969	6'969	6'969
Log likelihood	–7913.52	–7904.63	–7852.94
LR χ^2 against null model	1819.30***	1842.13***	1973.74***

+ p < .1; * p < .05; ** p < .01; *** p < .001.

[a] Based on EPS–forecast measure of analysts' favorability. Standard errors in parentheses. Models include dummies for each quarter from 2002 to 2011, 8–digit GICS levels, and analyst firms.

† Variable is centered at its mean.

Table A.II
Data Sources and Corresponding Data / Variables

Thomson Reuters IBES (Institutional Brokers Estimates System) - Favorability of analysts' evaluations - Negative earnings surprise - Positive earnings surprise - Number of analysts following
Factiva (Dow Jones) - Favorability of journalists' reporting - Media attention to the firm - Media attention to the CEO
Seeking Alpha and Thomson Reuters Eikon - Transcripts of quarterly earnings conference calls
Compustat - Prior firm performance change - Prior firm performance volatility - Firm size - Debt-to-equity ratio - Dividends per share - Liquidity - Cash flow from operating activities
Marquis Who's Who; Publicly available information (annual reports, company information, Bloomberg Executive Profiles and Biography) - CEO age - CEO tenure - CEO duality - Contender - Outsider - CEO background (Sales & Marketing) - CEO background (Finance)
www.stevieawards.com - CEO celebrity
Business Wire - Number of press releases
Eventus (based on CRSP data) - Abnormal returns
Center for Research and Security Prices (CRSP) - Number of shares traded

*****

References Not Included in the Main Paper

Antonakis, J., Bendahan, S., Jacquart, P., & Lalive, R. 2010. On making causal claims: A review and recommendations. ***The Leadership Quarterly,*** 21: 1086–1120.

Benner, M. J. 2010. Securities analysts and incumbent response to radical technological change: Evidence from digital photography and internet telephony. ***Organization Science,*** 21: 42–62.

Bergh, D. D., & Fairbank, J. F. 2002. Measuring and testing change in strategic management research. ***Strategic Management Journal,*** 23: 359–366.

Chen, G., Crossland, C., & Luo, S. 2015. Making the same mistake all over again: CEO overconfidence and corporate resistance to corrective feedback. ***Strategic Management Journal,*** 36: 1513–1535.

Corts, D. P., & Pollio, H. R. 1999. Spontaneous production of figurative language and gesture in college lectures. ***Metaphor and Symbol,*** 14: 81–100.

Fainsilber, L., & Ortony, A. 1987. Metaphorical uses of language in the expression of emotions. ***Metaphor and Symbol,*** 2: 239–250.

Fussell, S. R., & Krauss, R. M. 1989. Understanding friends and strangers: The effects of audience design on message comprehension. ***European Journal of Social Psychology,*** 19: 509–525.

Fussell, S. R., & Moss, M. M. 1998. Figurative language in emotional communication. In S. R. Fussell & R. J. Kreuz (Eds.), ***Social cognitive approaches to interpersonal communication:*** 113–141. Mahwah, NJ: Lawrence Erlbaum.

Keats, B. W., & Hitt, M. A. 1988. A causal model of linkages among environmental dimensions, macro organizational characteristics and performance. ***Academy of Management Journal,*** 31: 570–598.

Kronrod, A., & Danziger, S. 2013. "Wii will rock you!" The use and effect of figurative language in consumer reviews of hedonic and utilitarian consumption. ***Journal of Consumer Research***, 40: 726–739.

Markarian, F., & Parbonetti, A. 2007. Firm complexity and board of director compositions. ***Corporate Governance: An International Review,*** 15: 1224–1243.

Martens, M. L., Jennings, J. E., & Jennings, P. D. 2007. Do the stories they tell get them the money they need? The role of entrepreneurial narratives in resource acquisition. ***Academy of Management Journal,*** 50: 1107–1132.

Rabe-Hesketh, S., & Skrondal, A. 2008. ***Multilevel and longitudinal modeling using Stata.*** STATA press.

Roberts, R., & Kreuz, R. 1994. Why do people use figurative language? ***Psychological Science,*** 5: 159–163.

Skorczynska, H., & Deignan, A. 2006. Readership and purpose in the choice of economics metaphors. ***Metaphor and Symbol,*** 21: 87–104.

Toolan, M. 1988. ***Narrative: A critical linguistic introduction***. London: Routledge.

Wiersema, M. F., & Zhang, Y. 2011. CEO dismissal: The role of investment analysts. ***Strategic Management Journal,*** 32: 1161–1182.

Wiseman, 2010. On the use and misuse of ratios in strategic management research. In D. D. Bergh & D. J. Ketchen (Eds.), ***Research methodology in strategy and management,*** 5: 75–110. Bingley: Emerald Group Publishing Limited.

Andreas König (andreas.koenig@uni-passau.de) is Chaired Professor of Strategic Management, Innovation, and Entrepreneurship at the University of Passau. He received a Ph.D. from the University of Erlangen-Nuremberg and a Master of Music in trumpet performance from the Royal Academy of Music in London. His research focuses on organizational transformation, upper echelons theory, and executive communication.

Jan Mammen (jan.mammen@fau.de) is Manager for Financial Analytics at Beiersdorf AG and Lecturer at the University of Erlangen-Nuremberg. He received his Ph.D. from the University of Erlangen-Nuremberg. His research focuses on corporate restructuring, firm risk, executive communication, and artificial intelligence in management science.

Johannes Luger (jtl.smg@cbs.dk) is an assistant professor of strategic management and globalization at the Copenhagen Business School and an affiliated scholar at the University of St. Gallen. He holds a Ph.D. from the University of St. Gallen. In his work, Johannes develops and tests models based on behavioral theories to explain organizational actions and decisions such as investment decisions, resource allocations, divestitures, and others.

Angela S. Fehn (angela.fehn@uni-bamberg.de) currently holds a Deputy Professorship of Organization Science at the University of Bamberg. She received her Ph.D. from the University of Passau. Her research interests include upper echelons theory, impression management, and interdisciplinary inquiries at the nexus of the administrative sciences, psychology, and cognitive linguistics.

Albrecht Enders (albrecht.enders@imd.org) is a Professor of Strategy and Innovation at IMD, Lausanne. He holds a Ph.D. in Strategic Management from the Leipzig Graduate School of Management. His major research interest is the responses of organizations to radical changes in their environment and the role of top executives in these processes.