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ORIGINAL ARTICLE

Intermediary Perception of Narcissistic and Humble CEO Traits

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Abstract

The media plays a key role in bridging information asymmetries between parties such as CEOs and third-party observers. However, current research suggest that the media is not just a carrier of information but can actively shape the impression of the audience. An open question remains, hence, whether media reporting is affected by certain CEO traits such as narcissism or humility, two key constructs in the literature. For instance, narcissistic CEOs' belief in their own superiority may spillover to the media, thereby distorting the function as information carrier and favoring directly or indirectly certain CEO traits. Therefore, by drawing on the differential effects that narcissism and humility can have on the impression of an audience, the study employs a computer-aided content analysis of factual narcissistic and humble CEOs, identified via a video metric approach, and their evaluation through three key journalistic intermediaries (New York Times, Washington Post, and Financial Times). The quantitative data suggest that actual CEO narcissism is related negatively to external performance evaluations of CEOs in subsequent years. In addition, the data suggest that narcissism as well as humility scores increase the emotional tone employed depending on the journalistic orientation of the media outlet. Humble CEOs receive on average more media attention than narcissistic CEOs yet this result is insignificant, providing limited evidence for a systematic (i.e., number of articles) bias across and within journalistic outlets towards either narcissistic or humble CEOs. This suggests that widely considered "quality" media outlets resist to portray CEO traits in an overly positive/negative light.

Keywords Intermediary evaluation · Media · Humility · Narcissism · CEOs · Press · Computer-aided content analysis

Introduction

While case study research points to the fact that many successful companies are led by narcissistic CEOs [e.g., Steve Jobs, see Maccoby (2004)], research has gone beyond the univocal "bad" or "good" dichotomy of narcissistic leadership styles and points to the double-edged-sword nature of the leadership construct (Grijalva et al. 2015; Ham et al. 2017; Rosenthal and Pittinsky 2006). For instance, narcissistic CEOs do not stimulate company performance but increase the performance volatility of company results (e.g., Chatterjee and Hambrick 2007). Consequently, this research stream has produced a plethora of outcomes or mediating mechanisms of narcissistic CEOs, such as resource depletion (Buyl et al. 2019), M&A activities (Aktas et al. 2016), vulnerability to court suites and fraud probability (O'Reilly et al. 2018; Rijsenbilt and Commandeur 2013), firm disclosure quality (Marquez-Illescas et al. 2019), firm performance (Reina et al. 2014; Wales et al. 2013) or firm-level innovation (Kashmiri et al. 2017). While this progress in understanding the differential effects of narcissistic leadership is impressive, one overlooked aspect is the perceptual evaluation of third parties that make inferences about the CEO and their firm. This is surprising given the fact that narcissistic CEOs are (1) bolstered by social praise to maintain their high self-regard (Chatterjee and Hambrick 2011; Gerstner et al. 2013) and (2) engage in strategies that are considered noteworthy and important by *third parties* to maintain admiration of the audience (Gerstner et al. 2013). Hence, it is a logical step to ask whether this third-party perception in form of press reporting is affected by CEO traits. Media reporting itself is associated with a number of individual (e.g., CEO pay, CEO latitude, CEO mobility, Ranft et al.

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2006) and organizational level consequences including Initial Public Offering success or corporate governance practices (e.g., Bednar et al. 2015; Pollock and Rindova 2003). Therefore, media perception may enable CEOs with narcissistic tendencies to move up the career ladder while reinforcing existing CEO traits to maintain their image.

Whereas first studies point to the fact that the demographic and professional differences matter between different kinds of third-party evaluators (e.g., analysts versus journalists, König et al. 2018), I look at differences within journalistic media outlets. I depart from previous approaches by not looking at visible consequences of leadership characteristics (e.g., media awards, Hayward et al. 2004), but by looking at media coverage and its connection to CEO narcissism and humility. In other words, I want to know whether narcissistic or humble CEO traits, two related yet very distinct leadership characteristics, are favored by press coverage (in forms of quantity) but also whether there is a bias in press coverage towards narcissistic or humble CEOs. Therefore, I follow previous approaches to study leadership constructs in our "collective consciousness" by assuming that leadership constructs are themselves socially constructed (e.g., Meindl et al. 1985).

To study this issue, I exploit the conceptualization of two different leadership characteristics, namely CEO narcissism and CEO humility, that are "seemingly contradictory yet potentially complementary" (Zhang et al. 2017, p. 2). Current management approaches confirm differential effects of CEO humility on performance outcomes (Argandona 2015; Ou et al. 2016; Owens and Hekman 2016). Moreover, these results suggest that humility is a direct opposite construct of narcissism that can be studied to mitigate the adverse effects of CEO narcissism (Morris et al. 2005; Owens et al. 2015). Therefore, humility has also been described as a mid-point between the extremes of arrogance and lack of self-esteem (Vera and Rodriguez-Lopez 2004). In this sense, humility can be seen as a construct that provides sufficient theoretical differentiation from narcissism, thereby making positive correlations unlikely.

Traditional research on humility and narcissism repeatedly reports on the problems using direct and indirect measures of these hard-to-measure yet unobservable constructs, in particular regarding content validity (Koch-Bayram and Biemann 2020; McElroy-Heltzel et al. 2017). Therefore, I study the perception of actual narcissistic and humble CEOs, identified via video metrics, in three key journalistic media outlets. By doing so, I seek to contribute to the theoretical question of whether press coverage perceives two inherent leader characteristics (i.e., narcissism and humility) differently. The empirical strategy regarding the usage of a continuous scale (Likert) via video metrics enables me to distinguish between "high" and "low" states of each construct, thereby facilitating differentiation between extremes states that have very different strategic implications (e.g., Chatterjee and Hambrick 2007; Maccoby 2004). Therefore, the empirical contribution lies in using actual narcissism and humility scores of CEOs with continuous scales to distill the effect of these traits.

Theoretical Background: Journalists' Intermediary Role in the Leader–Follower Relationship

Media coverage has a direct reputational effect (Deephouse 2000) and serves to bridge information asymmetries between the sender and receiver of a message (Graf-Vlachy et al. 2019). The media is an information intermediary that broadcasts information to wide audiences and is seen as critical in making information available about firms and their leaders (Pollock and Rindova 2003). In addition, the media acts as a "social arbiter" by making positive and negative judgments about the objects they cover, which can serve as an important signal regarding the characteristics of those objects (Love et al. 2017). Deephouse (2000) states that reputation as a consequence of media coverage can lead to three or more strategic benefits for the company: the company can lower its costs, the company is able to increase prices, and the company is able to create competitive barriers with a positive reputation. Therefore, reputation is often regarded as an intangible asset with consequences for tangible outcomes, for instance, links to firm performance (Roberts and Dowling 2002). In addition, favorable media coverage can affect individual-level variables such as CEO pay or CEO job security as well as organizational-level variables such as board composition (Bednar 2012).

Bednar et al. (2013) find that particularly negative press coverage increases the likelihood of strategic change in companies where media itself goes beyond the information-conveying task as a direct mechanism to affect firm-level decisions. Consequently, leaders with more media coverage gain more reputational resources for themselves but also for their firms (Love et al. 2017). It is well known that narcissistic or charismatic CEOs such as Jack Welch or Steve Jobs act as "corporate saviors" and are propelled into leadership positions (Khurana 2002).

Khurana (2002, 2004) indicates that this "irrational quest" for corporate saviors can be linked to the attribution effects of followers towards certain CEOs. Consequently, followers attribute leadership attributes to top-level leaders if they incorporate rhetorical elements indicative of certain leadership styles (e.g., charisma: Jacquart and Antonakis 2015). As a consequence of attributional effects, followers perceived presidents with more vivid language as more charismatic, competent and creative (Emrich et al. 2001), while analysts assign higher recommendations if the annual report contains linguistic elements of charismatic rhetoric (Fanelli et al. 2009). Reputational mechanisms—through industry awards, media coverage, etc.—play a decisive role in reinforcing leadership images and propelling followers' attribution of leadership attributes to leaders. As third parties see the CEO as an embodiment of companies (Hambrick and Mason 1984), media coverage of visible "superstar" CEOs helps to create an image that enables the social construction of CEO profiles and therefore shapes the attributional assignment of leadership attributes (Hayward et al. 2004; Rindova et al. 2006). Empirical observations of the independent effect of CEO celebrity (i.e., beyond commonly used variables such as firm performance) indicate that perceived leader quality by the media influences the reputational of the firms they lead and that highly regarded CEOs increase firm reputation (Love et al. 2017). Further evidence suggests a reputational penalty associated with certain governance practices that affect managerial reputation (Bednar et al. 2015).

Moreover, observed CEO personalities such as the BIG5 traits do show to affect the perceived systematic risk of the firm (Harrison et al. 2019). However, whether particularly important leadership characteristics (narcissism/humility) affect key intermediaries—such as the press—remains to my best knowledge unknown. This is surprising given the long list of studies pointing to media biases that create a self-reinforcing image of leaders by attributing firm-vel outcomes to individuals (e.g., Meindl et al. 1985).

CEO Tasks and Role of the Press

One of the core tasks of CEOs is to communicate with intermediaries, such as journalists, analysts or other interest groups and to influence the content as well as the extent of external reporting about a firm or a leader (Fanelli et al. 2009; Westphal and Deephouse 2011). Therefore, media outlets are subject to content biases themselves (Entman 1993) but, on the other hand, media reports are also statements made by others about the CEO that provides unobtrusive insights into the CEO's psychological constructs and thinking worlds (e.g., Hill et al. 2013). Journalists are a different group of intermediaries because they live in different "thought worlds" whereby the same actions are evaluated differently by news outlets than by the general public or other forms of intermediaries (Lamin and Zaheer 2012).

By training, journalists look for broad, enlightening, interesting, easy-to-grasp, and engaging information about objects of interest (Andsager 2000; Deuze 2005; König et al. 2018). Therefore, they are more likely to react to rhetorical styles that have been shown to decrease information complexity (e.g., metaphors) that allow CEOs to avoid complex technical explanations and that builds on readers' prior beliefs or schemes (König et al. 2018; Lakoff 1993). As most journalists are trained in narrative and text-focused disciplines, they view this type of communication as an indication of quality, eloquence, and competence (König et al. 2018). In contrast, other intermediaries, such as analysts, are more likely to be trained in disciplines such as finance or economics, rely on numbers, facts and causal explanation, and are generally prone to anticipate biased and framed management forecasts (Fuller and Metcalf 1978). Therefore, decoding this information into accurate information requires specialized training and heightened cognitive effort.

Evaluating information about a firm or a leader and therefore decreasing information asymmetry is challenging because information is abundant, highly complex, and ambiguous (König et al. 2018), but journalists are particularly likely to be affected by information asymmetry.

However, media coverage does not cover all topics and people univocally. The economic perspective suggests that news outlets have specific preferences for topics and people, depending on the specific media slant (Gentzkow and Shapiro 2010). Factors that affect the quality and quantity of media slant on the media side are political preferences, spatial proximity, or economic dependencies such as advertising budgets (Gentzkow and Shapiro 2010; Gentzkow et al. 2014; Gurun and Butler 2012). Entman (1993) also names different aspects of frames and framing, illustrating how frames work. He defines framing as follows: "To frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described" (Entman 1993, p. 52). In addition to the universal and idiosyncratic characteristic of the media, another key insight is "that news content varies systematically with the characteristics and conflicts of interest of the source." (Gurun and Butler 2012, p. 561). Similarly, Westphal and Deephouse (2011, p. 1064) argue that "journalists assessment of a firm's leadership and strategy can be highly subjective", indicating the subjective and biased nature of coverage. In other words, the media slant is determined by topics and areas of interest both on characteristics of the news issuer, but particularly, is determined by the characteristics of the studied object. Therefore, intermediaries act as gatekeepers whereby their mediating role determines which management concepts and leadership styles diffuse in a field (e.g., Nicolai et al. 2010).

Similar to previous studies (Bednar et al. 2013; Love et al. 2017; Gentzkow and Shapiro 2010), I rely on two leading journalistic publications in, *The New York Times* and *The Washington Post,* as well as one specialized business publication, namely *The Financial Times*. These outlets have a national reach, a sufficiently large reader base, and a relatively diverse readership, and they are considered opinion leaders. Furthermore, these archives were available via standardized information retrieval platforms at the time of the study. Although these outlets are unlikely to represent "the media", they do represent a significant share of the media landscape with spillover effects to other media outlets (Bednar et al. 2015; Love et al. 2017). Notably, *The New York Times* is considered a key outlet given the number of studies analyzing this outlet (e.g., Gentzkow and Shapiro 2010; Bednar et al. 2015; Love et al. 2017). The media outlet *Wall Street Journal* was excluded from the study due to a lack of data access. Although *The Financial Times* is British, according to the Global Capital Markets Survey (2011), which measures readership habits among most senior financial decision-makers in the world's largest financial institutions, *The Financial Times* is considered the most important business read, reaching 36% of the sample population compared to 24 % of *The Wall Street Journal.*

Therefore, I analyze the two core functions of media, "disseminating information" and "evaluation making," regarding CEO narcissism and humility. In other words, after showing that narcissistic and humble CEOs may be perceived differently by the press for several reasons, I examine empirically whether narcissistic or humble CEOs generally receive more and different attention.

Empirical Setting

Hypotheses

I define CEO narcissism as non-pathological self-admiration that is characterized by tendencies toward grandiose ideas, fantasied talents, exhibitionism, and defensiveness in response to criticism, by feelings of entitlement, interpersonal exploitativeness, and a lack of empathy (e.g., Raskin and Terry 1988). Narcissistic CEOs engage in attention-grabbing company strategies (Gerstner et al. 2013), tend to display extravagant behavior (Lubit 2002) as well as are likely to employ rhetorical elements that are more likely to be perceived as charismatic (Emrich et al. 2001; Galvin et al. 2010; Post 1986). Moreover, narcissistic CEOs need media acclaim and highly regarded strategic choices to maintain their fragile self-esteem and acquire social approval assets, reinforcing their narcissistic orientation (Chatterjee and Pollock 2017). Research suggests that charisma and visionary elements are key aspects of leadership (Rosenthal and Pittinsky 2006), whereby it is linked to the subjective evaluation of leadership effectiveness (Grijalva et al. 2015). As a "master of puppets" (Chatterjee and Pollock 2017), therefore, I argue that narcissistic CEOs are particularly likely to influence different external stakeholders and their perception of them and that this fascination on the follower side is reflected in the preference for narcissistic CEOs in media outlets. Moreover, evaluation through third parties propels their existing personality inclination and reinforces the attribution of positive outcomes towards the CEO and the firm (Hayward et al. 2004). This is important as previous research reports on the role of the media not just as a carrier of information but also as a potential avenue to punish CEO actions via reporting (Bednar 2012; Bednar et al. 2015).

This effect will be relevant in journalistic evaluation because of the training and characteristics of journalistic sources as stated above. Journalists tend to look for stories and narratives to receive attention from the audience by imposing their own worldviews and biases. Therefore, the media goes beyond the function of information transmission (e.g., Bednar 2016). Narcissistic individuals tend to be outgoing, charming, confident and entertaining, making them more likely to emerge as leaders (Back et al. 2010; Grijalva et al. 2015). These CEOs individually may have the ability to paint pictures with words and rhetorically exert a vision that people want to follow (Amernic et al. 2007; Craig and Amernic 2011; Galvin et al. 2010). In addition, these CEOs attribute positive outcomes to themselves and believe in their own superiority (Chatterjee and Pollock 2017), thereby constantly confronting others with their achievements. Case study observations from practice indicate that narcissistic or charismatic CEOs such as Jack Welch or Steve Jobs are portrayed by the press prominently (Khurana 2002).

In contrast, humble leaders are not often examined compared to more glamorous leaders who are alleged to be narcissists or charismatic (Nielsen et al. 2010; Ou et al. 2016). In fact, humble leaders attribute rhetorically positive outcomes to the team, accept their own defections and acknowledge the role of luck (Ou et al. 2016; Owens and Hekman 2012), which is in sharp contrast to narcissistic CEOs. Therefore, I argue that journalists will distribute more attention to CEOs with narcissistic and bold characteristics.

Hypothesis 1: Narcissistic CEOs receive more media attention than humble CEOs

On the one hand, narcissistic individuals with low to moderate levels of narcissism are perceived by the audience as strong, charismatic, likable, a person with a vision who can attract followers (Grijalva et al. 2015). Their levels of confidence, optimism and drive for success, and the fact that narcissists can be found in leadership positions, point to the positive effects of these traits (Raskin and Terry 1988; Rosenthal and Pittinsky 2006). On the other hand, narcissists with high levels of narcissism can be seen as arrogant, unstable and less competent, as poor listeners and lacking empathy (Anglin et al. 2018; Maccoby 2004). In addition, these high levels of narcissism also can cause participants to perceive these individuals as unattractive, unlikeable or aggressive (Back et al. 2013; Dufner et al. 2013). In contrast, more practice and research-based articles, particularly after the financial crisis, are shifting towards humility (Argandona 2015; Morris et al. 2005; The Wall Street Journal 2018; Zhang et al. 2017). I define humility as an accurate assessment of one's abilities and achievements (not low self-esteem), an ability to acknowledge one's mistakes, imperfections and limitations, openness to new ideas, a relatively low self-focus, while recognizing that one is but part of the larger universe, an appreciation of the value of all things as well as awareness of the many different ways that people and things can contribute to our world (e.g., Owens and Hekman 2016; Tangney 2000). Therefore, I see humility nowadays as a more socially praised and positively perceived construct than narcissism (Nielsen et al. 2010).

Hypothesis 2a: Narcissistic CEOs receive less positive media coverage than humble CEOs

Finally, I hypothesize that narcissistic CEOs will increase the general emotional tone attributed to the CEO in line with previous research (Chatterjee and Hambrick 2007). The overall emotional tone reflects these CEOs' sensation-seeking nature and variance-inducing nature (Chatterjee and Hambrick 2007, 2011), forcing journalists to be more emotionally involved than humble CEOs.

Hypothesis 2b: Narcissistic CEOs increase the overall emotional tone compared to humble CEOs

Methods

Data and Sample

My sample includes all companies from the Fortune 500 2012 list. I obtained CEO humility and CEO narcissism characteristics based on a video metric approach from (Petrenko et al. 2019). Petrenko et al. (2019) allowed me to randomly select 63 CEOs from their original study sample, a sample size sufficient to enable empirical analysis but smaller than in the original sample. However, this sample size acknowledges the resource intensity of gathering and validating unobtrusive measures while being comparable to previous management studies (Zhang et al. 2017). I double check whether CEOs and companies were also on the Standard & Poor's (S&P) 500 list in 2012 and 2013. I use S&P COMPUSTAT identifiers to identify the CEOs and match the data with demographic, firm-level and industry data.

To obtain media coverage, I use the LexisNexis database, a commonly used database to locate third-party evaluations (Bednar et al. 2015). I chose three journalistic outlets: New York Times (NYT), Washington Post (WP) and Financial Times (WT) because of their national and international coverage, circulation and their role as opinion leaders, similar to previous research (Bednar et al. 2015; Love et al. 2017). Due to these characteristics and in line with prior research, other media outlets (e.g., magazines, specialized outlets, etc.) were omitted from the analysis.

The final sample consists of 63 CEOs with COMPUTAT identifiers, obtained humility and narcissism scores, and industry, firm-level, and demographic variables that I link with 1-year time-lagged data over 3 years (2013–2015). Humility scores stem from (Petrenko et al. 2019), and narcissism scores stem from (Petrenko et al. 2016) but were received simultaneously as part of a research project.

Measures

Independent Variables

Studying unobservable CEO traits without validated psychometric scales is challenging. Although previous research both on narcissism as well as humility employs a number of unobtrusive measures that do not require the participation of the CEO via archival data (Chatterjee and Hambrick 2007) or questioning of subordinates or colleagues (Ou et al. 2016), these approaches are resource intensive and may jeopardize convergent and content validity (Hill et al. 2014). Therefore, I rely on videometrics. The general idea of videometrics is to use psychometrically validated instruments with complete strangers and publicly available video recordings of research objects to measure individual constructs, combining insights from complementary areas of organizational research (Hill et al. 2019). Videometrics allows for assessing instrument reliability and validity (e.g., via interrater correlation) while at the same time gaining access to cohorts that are hard to access via traditional large-scale empirical measures such as questionnaires (Hill et al. 2019). Based on a long tradition of unobtrusive measures (Webb 1966), previous management scholars have shown that these measures can be applied and validated in CEOs cohorts (e.g., Chatterjee and Hambrick 2007) to utilize the advantages the method has to offer (e.g., avoidance of interviewer bias; availability of numerous, longitudinal data). Petrenko et al. (2016, 2019) applied the method of video metrics of public CEO video records through third-party ratings using widely utilized and validated psychometric scales both for humility (HEXACO scale, Lee and Ashton 2005) and narcissism (NPI scale, Raskin and Terry 1988). The approach demonstrates sufficient validity and robustness properties. For instance, Petrenko et al. (2016) show that video rating of CEOs using a short-measure of the NPI for narcissism demonstrated high coefficient alpha reliability ($\alpha = 0.95$), high agreement on their ratings of CEO narcissism among expert raters as well as sufficient correlation between an important alternative measure of CEO narcissism with a subsample (0.404, $p < 0.001$, Chatterjee and Hambrick 2007). The authors also impose several conditions to ensure the feasibility of the task (e.g., video length, rater experience) and perform several robustness tests (e.g., time stability and additional discriminant validity checks). More information about the data collection method can be found in the literature (Hill et al. 2019; Petrenko et al. 2016; Petrenko et al. 2019).

Dependent Variables

Number of Newspaper Articles (Hypothesis 1)

To measure our dependent variable media coverage, I count the number of articles in year *t* referring to the chosen CEO in the LexisNexis database, similar to previous research (Love et al. 2017). I use the COMPUTAT identifier and the COMPUTSTAT name to search for the respective CEO in LexisNexis. I then chose the automatic person recognition in LexisNexis to ensure that the CEO is registered in the database to avoid misattribution. I manually inspected search results and chose to include CEOs if the automatic classification to a person of interest is at least > 50% to ensure that the article is mainly about the CEO of interest. I then chose the option "newspapers" in LexisNexis to capture only newspaper articles about the CEO and exclude other sources such as newswires. To capture not just the number of general newspaper coverage, I filter the source options in LexisNexis for our three opinion leaders and create separated variables for each year and each publication outlet. The final variables are standardized for the 3 years. The second variable, "number of articles_sum," is calculated by summing up the number of articles in each year.

Sentiment of Newspaper Articles (Hypothesis 2a and Hypothesis 2b)

As I am interested in the favorability of media coverage, I assess the degree of negative and positive coverage quantitatively using the obtained articles for each publication outlet separately. I employ the linguistic software and dictionary Linguistic Enquirer and Word Count (LIWC, Pennebaker et al. 2003; Tausczik and Pennebaker 2010), a dictionary tool that has been psychometrically validated across narratives (e.g., blogs, newspapers) and that is frequently employed in management research (Bednar et al. 2015; Love et al. 2017). I use the "emotion words" category, a master variable grouping together several word categories that reflect emotion words. Finally, I employ the categories "positive emotions" (e.g., love, nice, sweet) and "negative emotions" (e.g., hurt, ugly, nasty) to capture the extent of positive and negative sentiment towards the CEO, following previous research (Bednar 2012; Love et al. 2017). Variables are created separately for each year and publication and are standardized for the number of words.

Control Variables

I included several control variables. CEO tenure has been a continuous variable since inception as CEO. CEO Gender is a dummy variable (1 = male, 0 = female). CEO Age is a continuous variable counting from the birth year of the CEO. CEO Dual is a dummy variable if the CEO is chairperson and CEO. CEO cash compensation, restricted stock compensation and total compensation are the absolute numbers in Dollars similar to Benischke et al. 2018). This is collected from Thomson Reuters Eikon. CEO education is a Likert scale from 1 high school or less to 5 = PhD (Harrison et al. 2019). MBA Dummy is a dummy variable if the CEO holds an MBA (1 = yes; 0 = otherwise). Nationality is a dummy if the CEO is born in the US (1 = yes; 0 = otherwise). Firm age is a continuous variable as the number of years since foundation. Firm size is the number of total assets in year *t*, similar to previous research (Harrison et al. 2019). High Discretion is a count variable based on (Hambrick and Abrahamson 1995). The tech industry is a control variable (0 = not classified; 4 = high) based on (OECD 2009). EBIT, Book Value per Share, Cash Flow per Share, Cash per Share, Total Equity, Total Net Income, Total assets per share, and EBITDA are fixed accounting terms in year *t*. ROA is calculated as Net Income divided by Total Assets in the respective year. Total assets are a proxy for firm size, similar to previous studies (Harrison et al. 2019). The personality of the CEO is another variable that may affect the perception of intermediaries. I gather the letter to shareholders in the annual report of the respective companies in year *t*, transform them into a machine-readable format and employ a validated machine learning tool of personality developed by Harrison et al. (2019) via the program *R*. Performance and size variables come from ADVFN, an investor service covering quarterly and annual performance data. CEO information is hand-collected from "Marquis Who is Who" "Bloomberg," and "Thomson Reuters Eikon." Superstar dummy is a dummy variable if the CEO appeared on the "*Harvard Business Review best CEOs in the world*" list in 2013, 2014 or 2015.

Results

The distribution of narcissism and humility scores usually shows distributed (e.g., via boxplot) scores with low standard deviations for both variables. One significant correlation exists between narcissism/humility and the personality traits via CEO consciousness and CEO narcissism ($r = -0.258$, $p = 0.041$), thereby supporting the argument that narcissism/humility are unique characteristics and not just part of the general personality traits. Descriptive analysis of the mean standardized number of articles and the sum of articles, indicates a highly left-skewed distribution. This indicates that most of the CEOs in the sample receive low coverage over the chosen period of time, while a few CEOs receive a high number of articles. On average, FT published more articles on the chosen CEOs than NYT and WP. The emotional tone is highest in NYT and has the highest ratio between positive

Table 1 Correlations

	Variable	Mean	1	2	3	4	5	6	7	8	9
1	Narcissism	3.52	1	−0.317*	−0.276*	0.113	0.254*	0.067	0.098	0.170	0.198
2	Humility	3.70	−317*	1	0.217	0.103	0.129	0.269*	0.090	0.077	0.203
3	Superstar_dummy	0.19	−0.276*	0.217	1	0.124	−0.133	0.105	0.130	0.054	−0.119
4	NYT_Emotional Tone	18.58	0.113	0.103	0.124	1	0.251*	0.574**	0.979**	0.734**	0.284*
5	FT_ Emotional Tone	4.11	0.254*	0.129	−0.133	0.251*	1	0.330**	0.251*	0.231	0.943**
6	WP_ Emotional Tone	8.43	0.067	0.269*	0.105	0.574**	0.330**	1	0.586**	0.594**	0.379**
7	Positive Emotion_NYT	0.83	0.098	0.090	0.130	0.979**	0.251*	0.586**	1	0.827**	0.290*
8	Negative Emotion_NYT	0.35	0.170	0.077	0.054	0.734**	0.231	0.594**	0.827**	1	0.293*
9	Positive Emotion_FT	0.25	0.198	0.203	−0.119	0.284*	0.943**	0.379**	0.290*	0.293*	1
10	Negative Emotion_FT	0.13	0.168	0.221	−0.059	0.256*	0.881**	0.347**	0.260*	0.266*	0.967**
11	Positive Emotion_WP	0.36	0.039	0.272*	0.085	0.578**	0.400**	0.974**	0.597**	0.606**	0.420**
12	Negative Emotion_WP	0.13	0.018	0.335**	0.015	0.467**	0.562**	0.754**	0.498**	0.548**	0.687**
13	Total Number of Articles_Average	100.68	0.032	0.220	−0.067	0.280*	0.586**	0.454**	0.279*	0.231	0.559**
14	Total Number of Articles_Sum	302.06	0.032	0.220	−0.067	0.280*	0.586**	0.454**	0.279*	0.231	0.559**
15	NYT_Total Number of Articles	4.11	0.059	0.210	−0.045	0.466**	0.555**	0.584**	0.470**	0.423**	0.525**
16	FT_ Total Number of Articles	4.03	0.040	0.218	−0.073	0.308*	0.578**	0.470**	0.309*	0.263*	0.549**
17	WP_ Total Number of Articles	2.53	−0.027	0.161	0.191	0.319*	0.257*	0.526**	0.291*	0.236	0.236

	Variable	Mean	10	11	12	13	14	15	16	17
1	Narcissism	3.52	0.168	0.039	0.018	0.032	0.032	0.059	0.040	−0.027
2	Humility	3.70	0.221	0.272*	0.335**	0.220	0.220	0.210	0.218	0.161
3	Superstar_dummy	0.19	−0.059	0.085	0.015	−0.067	−0.067	−0.045	−0.073	0.191
4	NYT_Emotional Tone	18.58	0.256*	0.578**	0.467**	0.280*	0.280*	0.466**	0.308*	0.319*
5	FT_ Emotional Tone	4.11	0.881**	0.400**	0.562**	0.586**	0.586**	0.555**	0.578**	0.257*
6	WP_ Emotional Tone	8.43	0.347**	0.974**	0.754**	0.454**	0.454**	0.584**	0.470**	0.526**
7	Positive Emotion_NYT	0.83	0.260*	0.597**	0.498**	0.279*	0.279*	0.470**	0.309*	0.291*
8	Negative Emotion_NYT	0.35	0.266*	0.606**	0.548**	0.231	0.231	0.423**	0.263*	0.236
9	Positive Emotion_FT	0.25	0.967**	0.420**	0.687**	0.559**	0.559**	0.525**	0.549**	0.236
10	Negative Emotion_FT	0.13	1	0.387**	0.695**	0.504**	0.504**	0.466**	0.489**	0.208
11	Positive Emotion_WP	0.36	0.387**	1	0.801**	0.494**	0.494**	0.639**	0.507**	0.535**
12	Negative Emotion_WP	0.13	0.695**	0.801**	1	0.532**	0.532**	0.606**	0.531**	0.460**
13	Total Number of Articles_Average	100.68	0.504**	0.494**	0.532**	1	1.000**	0.943**	996**	0.493**
14	Total Number of Articles_Sum	302.06	0.504**	0.494**	0.532**	1.000**	1	0.943**	0.996**	0.493**
15	NYT_Total Number of Articles	4.11	0.466**	0.639**	0.606**	0.943**	0.943**	1	0.955**	0.578**
16	FT_ Total Number of Articles	4.03	0.489**	0.507**	0.531**	0.996**	0.996**	0.955**	1	0.483**
17	WP_ Total Number of Articles	2.53	0.208	0.535**	0.460**	0.493**	0.493**	0.578**	0.483**	1

$N = 63$

*Correlation is significant at the 0.05 level (2-tailed)

**Correlation is significant at the 0.01 level (2-tailed) and negative emotions. The correlative results suggest that being a narcissistic CEO is highly negatively related to the external evaluation of performance in subsequent years. Negative correlations between narcissism and humility ($p < 0.05$) confirm the distinct nature of the constructs. Further descriptive results can be obtained upon request from the authors. Correlative results can be found in Table 1.

Surprisingly, correlative results on a $p < 0.10$ significance level indicate that humble CEOs receive, on average more media attention than narcissistic CEOs regarding the total number of articles across outlets. Moreover, the results suggest that NYT and FT publish more on average on humble CEOs ($p < 0.10$). In contrast, narcissism and the number of articles remain highly insignificant across outlets ($p > 0.10$).

Correlative results suggest that the emotional tone in WP increases with humble CEOs ($p < 0.10$). In contrast, in FT, humble CEOs increase the emotional tone with narcissistic CEOs ($p < 0.10$). The results indicate that both outlets portray and describe humble and narcissistic CEOs very differently. There are no significant results for CEO narcissism and CEO humility in the NYT, suggesting a balanced style. The results point to differential effects whereby media slant leads journalistic publication outlets to favor either humble or narcissistic CEOs. Surprisingly, this effect appears not to be univocal but different depending on the media bias. The media bias appears not to be univocal across media outlets. However, the fact that the same narcissistic CEO is linked to positive correlations ($p < 0.05$) with emotional tone in the FT and that humble CEOs are linked to heightened emotional tone ($p < 0.06$) in the WP but not FT suggests that there are stark differences in the perception across intermediaries. Surprisingly, the results indicate strong negative correlations with the superstar dummy variable ($p < 0.05$), or whether these CEOs received favorable evaluation of their performance in the subsequent time period by external parties.

Interestingly, NYT appears to show very similar Pearson coefficients and significance levels (emotional tone, positive emotions) between narcissistic and humble CEOs. At the same time, NYT appears to have a preference in the number of articles for humble CEOs ($r = 0.21$, $p = 0.09$) but not narcissistic CEOs ($r = 0.059$, $p = 0.064$). A similar preference for humble CEOs regarding the quantity of media coverage appears to be prevalent in the FT ($r = 0.218$, $p = 0.087$).

The OLS regression results using the narcissism scores can be found in Table 2, and using humble scores in Table 3.

The results suggest that the models are specified adequately with constantly high-adjusted R squares. Both narcissism and humility scores remain insignificant in the final model. The results suggest that company success, measured by performance variables such as EBIT and EBITDA, are significant predictors of the number of articles in the media outlets. In these models, humble CEOs (unstandardized $b = 46.073$, $p > 0.05$) receive, on average more media attention than narcissistic CEOs (unstandardized $b = -30.83$, $p > 0.05$), yet this effect is insignificant. Since Owens et al. (2015) elaborate on the possible interaction effects between narcissism and humility, an interaction term is additionally created after standardization. The results can be found in Table 4 and indicate that an interaction effect does not appear to drive the statistical results.

Similar to the total number of articles, the number of articles in the NYT does not show differences between humble and narcissistic CEOs. Surprisingly, the superstar dummy remains an insignificant variable across the media to predict the number of articles. Emotional tone with the NYT and narcissism scores indicate that narcissism becomes insignificant when controlled for other variables. The results indicate that the emotional tone in the NYT is mainly driven by firm performance. Although non-significant, the results indicate that narcissistic CEOs ($b = 7.30$, $p > 0.05$) increase their emotional tone compared to humble CEOs ($b = 1.60$, $p > 0.05$).

In the WP, narcissism remains a significant positive driver of the emotional tone ($p < 0.10$) but becomes insignificant in the final model 3. Generally, the highest Beta values can be attributed to the NYT's emotional tone and narcissistic CEOs.

In the NYT, positive emotions are not significantly driven by humility, while narcissistic CEOs receive, on average, more positive emotions (Model 2 $b = 0.354$; $p < 0.05$). Results on positive emotions can be found in Tables 5 and 6.

In contrast, NYT results suggest narcissistic CEOs do not receive significantly negative emotions (model 2: $b = 0.116$; $p > 0.10$). Similarly, humble CEOs do not receive significantly more negative emotions in the NYT. OLS results in the FT suggest that humble CEOs do not receive significantly more positive emotions. The same holds true for narcissistic CEOs in the FT sample and the negative emotion categorization. Further results on positive emotions (humility scores) as well as on the emotional tone can be found in Table 7 of Appendix 1 and Table 8 of Appendix 2.

Discussion and Conclusion

The quantitative results indicate limited evidence of a highly skewed attention towards narcissistic or humble CEOs. The results suggest that a small number of CEOs receive overproportional attention from the media. Surprisingly, CEOs with the humility trait receive more attention from two media outlets, NYT and FT, in the bivariate specification, which contradicts Hypothesis 1. In theory, with their bold and visionary strategies, narcissistic CEOs should be more inclined to receive media attention than humble CEOs. The

Table 2 Number of articles with narcissism

Variables	Model 1		Model 2		Model 3	
	b	p-value	b	p-value	b	p-value
(Constant)		0.504		0.375		0.746
Narcissism	0.175	0.286	0.036	0.715	− 0.160	0.270
CEO tenure			− 0.017	0.870	− 0.004	0.978
CEO Dual			0.099	0.287	− 0.004	0.973
CEO cash compensation in Dollar			0.078	0.441	0.188	0.159
CEO restricted stock compensation			− 0.360	0.013	− 0.243	0.117
Total compensation			− 0.207	0.057	− 0.293	0.046
CEO education			− 0.001	0.990	0.057	0.617
MBA Dummy (1 = MBA; 0 = otherwise)			0.089	0.373	− 0.064	0.627
Nationality dummy (1 = US; 0 = otherwise)			− 0.298	0.017	− 0.416	0.011
Firm age			− 0.055	0.584	0.055	0.643
High Discretion (Hambrick and Abrahamson 1995)			0.075	0.394	0.034	0.718
Tech Industry industry (OECD 2009)			− 0.015	0.886	0.130	0.374
Return on Assets (Net Income/total assets) 2012			− 0.111	0.344	− 0.225	0.122
Total Assets Per Share 2012			− 0.140	0.439	0.151	0.558
Cash Per Share 2012			0.194	0.241	0.115	0.574
Cash Flow Per Share 2012			0.009	0.982	0.200	0.639
Book Value Per Share 2012			0.538	0.287	− 0.013	0.982
Total Equity 2012			0.647	0.353	1.110	0.177
Total Assets 2012			0.149	0.772	− 1.089	0.213
Total Net Income 2012			1.871	0.019	1.862	0.035
EBIT 2012			− 0.739	0.029	− 0.576	0.115
EBITDA 2012			− 1.700	0.070	− 1.088	0.315
CEO Gender			0.062	0.534	0.002	0.981
Superstar_Dummy			0.021	0.813	− 0.064	0.547
Neuro					0.194	0.340
Extraversion					− 0.168	0.384
Openness					0.190	0.521
Agreeableness					0.371	0.319
Conscientiousness					− 0.403	0.148
R^2	0.03		0.95		0.96	
Adj. R^2	0.04		0.868		0.87	

Dependent Variable: Total number of newspapers_average

$n = 63$

first correlative results point to preferences of media outlets, sometimes called media slant, towards CEOs' traits such as humility. It also appears to support anecdotal evidence, such as the previously cited Wall Street Journal (2018) article entitled "The Best Bosses Are Humble Bosses," that media preferences are ingrained in the organization.

In the OLS specification, however, the number of articles and the tone appears to be driven by the size and performance effects of the respective companies. Therefore, if supplemented with more data and controls, the results point to a CEO-firm matching whereby journalistic attention is attributed towards large, successful companies but not per se towards certain CEOs with distinct personalities. The data suggest that humble CEOs receive more attention than narcissistic CEOs across the general media and within individual outlets (e.g., NYT, WP) in the correlative setting. However, this effect becomes insignificant with size variables (Hypothesis 1). The results also indicate that narcissistic CEOs increase the emotional tone attributed to these CEOs compared to humble CEOs (Hypothesis 2b). This aligns with previous research that narcissistic CEOs' attention-seeking and irrational behavior indirectly affect (Chatterjee and Hambrick 2007).

However, regarding the positive tone, the results are very mixed (Hypothesis 2a). Based on unstandardized Beta values, NYT attributes more positive emotions to humble leaders than narcissistic leaders, while the opposite is the case for WP. This indicates that NYT describes a humble

Table 3 Total number of articles humble

Variables	Model 1 *b*	Model 1 *p*-value	Model 2 *b*	Model 2 *p*-value	Model 3 *b*	Model 3 *p*-value
(Constant)		0.487		0.266		0.434
Humble	0.164	0.318	0.184	0.192	0.183	0.186
CEO tenure			0.098	0.517	−0,077	0.656
CEO Dual			−0.084	0.551	−0.007	0.966
CEO cash compensation in Dollar			−0.173	0.228	−0.098	0.524
CEO restricted stock compensation			−0.191	0.313	−0.095	0.606
Total compensation			−0.085	0.594	−0.211	0.253
CEO education			0.048	0.745	0.004	0.980
MBA Dummy (1 = MBA; 0 = otherwise)			−0.058	0.659	−0.085	0.487
Nationality dummy (1 = US; 0 = otherwise)			−0.138	0.417	−0.295	0.117
Firm age			0.007	0.961	0.009	0.951
High Discretion (Hambrick and Abrahamson 1995)			0.090	0.509	0.085	0.504
Tech Industry industry (OECD 2009)			−0.024	0.884	0.068	0.681
Return on Assets (Net Income/total assets) 2012			0.051	0.711	−0,036	0.798
Total Assets Per Share 2012			0.159	0.413	0.089	0.631
Cash Per Share 2012			0.566	0.009	0.464	0.045
EBIT 2012			0.243	0.227	0.288	0.153
EBITDA 2012			−0.023	0.922	−0.045	0.840
CEO Gender			0.206	0.207	0.165	0.294
Superstar_Dummy			−0.136	0.349	−0.164	0.277
Neuro					0.252	0.372
Extraversion					0.046	0.848
Openness					0.659	0.075
Agreeableness					0.631	0.098
Conscience					−0.295	0.371
R^2	0.027		0.813		0.889	
Adj. R^2	0.001		0.626		0.699	

Dependent variable: total number of newspaper articles_average

$n = 63$

Table 4 Regression analyses testing interaction effects of CEO narcissism and CEO humility

Dependent variables	Total mean number of newspaper articles		Total number of articles in NYT		Emotional tone NYT	
	b	*p*-value	*b*	*p*-value	*b*	*p*-value
(Constant)	−913.05	0.111	−21.15	0.118	−8.95	0.647
CEO narcissism	70.13	0.379	1.99	0.292	3.55	0.198
CEO humility	209.94	0.60	4.95	0.61	4.32	0.257
Interaction						
CEO narcissism × CEO humility	36.40	0.624	0.30	0.866	3.11	0.226
F	1.34	0.270	1.30	0.281	1.22	0.311
R^2	0.06		0.06		0.06	

$n = 63$

trait more positively, reflecting its values of fairness and honesty, which can also be found in the humility definition. WP reflects stereotypical, positive associations with narcissism and a positive tone (Hypothesis 1). In contrast, FT shows almost equal Beta values (narcissism: $b = 0.25$ versus humble $b = 0.27$), indicating a very balanced style that fulfills its mission of information transmitting. Based on Beta values, NYT and WP also increase beta values for

Table 5 Positive emotions in NYT

Variables	Model 1		Model 2		Model 3	
	b	*p*-value	*b*	*p*-value	*b*	*p*-value
(Constant)		0.750		0.438		0.460
Humble	0.120	0.468	−0.051	0.763	−0.021	0.895
CEO tenure			0.094	0.612	−0.052	0.797
CEO Dual			−0.013	0.940	−0.077	0.701
CEO cash compensation in Dollar			0.331	0.067	0.551	0.007
CEO restricted stock compensation			−0.157	0.498	0.086	0.692
Total compensation			−0.539	0.012	−0.488	0.034
CEO education			0.250	0.178	0.100	0.622
MBA Dummy (1 = MBA; 0 = otherwise)			0.030	0.851	0.045	0.756
Nationality dummy (1 = US; 0 = otherwise)			−0.442	0.044	−0.485	0.035
Firm age			0.193	0.267	0.149	0.408
High Discretion (Hambrick and Abrahamson 1995)			0.169	0.319	0.173	0.257
Tech Industry industry (OECD 2009)			−0.058	0.769	0.158	0.420
Return on Assets (Net Income/total assets) 2012			−0.047	0.781	−0.050	0.765
Total Assets Per Share 2012			0.078	0.743	−0.076	0.724
Cash Per Share 2012			0.636	0.016	0.423	0.110
EBIT 2012			0.170	0.487	0.075	0.743
EBITDA 2012			0.537	0.078	0.420	0.125
CEO Gender			−0.434	0.038	−0.438	0.028
Superstar_Dummy			0.175	0.327	0.065	0.709
Neuro					0.629	0.070
Extraversion					0.291	0.309
Openness					0.221	0.592
Agreeableness					0.264	0.537
Conscience					0.060	0.875
R^2	0.014		0.717		0.847	
Adj. R^2	−0.012		0.434		0.584	

Dependent variable: positive emotion NYT

$n = 63$

narcissistic leaders regarding the emotional tone, but this is not the case for FT.

Generally, the results have important implications. Since narcissistic CEOs need external acclaim and social approval, the results hint that the analyzed media outlets do not provide these praises based solely on the CEO's perceived narcissistic/humble orientation. Therefore, at least media outlets considered by conventional wisdom "quality" media fulfill their information-disseminating task, neglecting potential "noise" that may distort the information-transmitting process. According to the data, this appears particularly true for specialized media outlets such as FT, while the data suggests a slant towards humility in the NYT and towards narcissism in WP. Another term instead of slant to describe this might be ideology or bias. It is important to know for stakeholders, shareholders, or public policy makers whether the inflated abilities of these CEOs are spilled over to the media. Ultimately, market failure can be its consequence.

The results may hint at differences within one group of intermediaries, journalists, whereby general news outlets have a different preference than specialized financial media outlets. For instance, generalist media outlets such as NYT may be more prone to evaluate CEOs' "soft" and broader characteristics, thereby making them more likely to be "seduced" by these effects. Hence, future studies might analyze different or more media outlets than this study. This may include non-specialized media outlets (e.g., "USA today"), regional non-specialized media outlets (e.g., "Boston Globe", "Denver Post") or other specialized business outlets (e.g., "Wall Street Journal"). Moreover, future studies may explicitly choose media outlets that are considered to be "yellow" presses. Since this is the first study—to my best knowledge—to study CEO narcissism/humility in the media context, there is ample opportunity for future research to causally inspect underlying reasons of different media outlets.

Table 6 Comparison model 3 with narcissism scores

Variables	FT (Model 3)		NYT (Model 3)		WP (Model 3)	
	b	*p*-value	*b*	*p*-value	*b*	*p*-value
(Constant)		0.069		0.412		0.260
Narcissism	− 0.124	0.601	0.291	0.108	0.002	0.994
CEO tenure	− 0.282	0.207	− 0.230	0.154	− 0.203	0.378
CEO Dual	0.119	0.574	0.050	0.736	− 0.027	0.904
CEO cash compensation in Dollar	0.432	0.066	0.331	0.050	0.291	0.214
CEO restricted stock compensation	0.128	0.600	0.259	0.158	− 0.159	0.540
Total compensation	− 0.486	0.049	− 0.476	0.012	− 0.509	0.050
CEO education	0.234	0.242	0.194	0.177	0.134	0.513
MBA Dummy (1 = MBA; 0 = otherwise)	− 0.016	0.940	0.170	0.293	0.126	0.591
Nationality dummy (1 = US; 0 = otherwise)	− 0.678	0.013	− 0.507	0.010	− 0.461	0.078
Firm age	0.116	0.561	0.230	0.126	0.131	0.533
High Discretion (Hambrick and Abrahamson 1995)	− 0.114	0.477	0.313	0.019	0.402	0.036
Tech Industry industry (OECD 2009)	− 0.032	0.894	0.208	0.242	0.287	0.275
Return on Assets (Net Income/total assets) 2012	− 0.159	0.491	− 0.038	0.816	− 0.393	0.127
Total Assets Per Share 2012	− 0.340	0.438	0.047	0.878	0.991	0.051
Cash Per Share 2012	− 0.313	0.372	1.047	0.002	1.146	0.010
Cash Flow Per Share 2012	− 0.243	0.734	− 1.083	0.056	− 0.403	0.595
Book Value Per Share 2012	0.533	0.588	0.857	0.236	− 0.905	0.390
Total Equity 2012	0.374	0.776	− 2.617	0.018	1.247	0.379
Total Assets 2012	0.123	0.930	0.041	0.967	− 4.008	0.022
Total Net Income 2012	1.032	0.435	− 1.661	0.097	− 1.274	0.364
EBIT 2012	− 0.460	0.430	0.775	0.081	0.441	0.471
EBITDA 2012	− 0.769	0.666	3.977	0.010	3.992	0.056
CEO Gender	0.050	0.774	− 0.370	0.013	− 0.713	0.003
Superstar_Dummy	0.067	0.710	0.030	0.813	0.110	0.563
Neuro	0.044	0.896	0.561	0.038	0.430	0.242
Extraversion	− 0.546	0.111	0.367	0.129	− 0.347	0.314
Openness	0.633	0.219	0.752	0.054	0.415	0.432
Agreeableness	1.209	0.072	0.844	0.076	1.095	0.114
Conscience	− 1.183	0.022	− 0.093	0.768	− 0.596	0.221
R^2	0.912	S	0.85		0.903	
Adj. R^2	0.630		0.60		0.589	

Dependent variable: positive emotions

It would also be interesting for future studies to differentiate between journalistic outlets and countries. For instance, cultural values and country-based industry characteristics may determine how the press perceives and portrays these CEOs. This avenue appears to be particularly promising given that humility might be more pronounced in non-western societies (e.g., Zhang et al. 2017). Following this research, it is likely that humility cues might be more positively perceived by non-western countries and their press. Even cultural micro-level and meso-level characteristics of outlets (e.g., number of journalists from non-western countries) in certain countries might determine whether humility is more leaned on and cherished.

Given that I find perceptual differences between the media outlets in terms of emotional tone and positive emotions, as well as the overall importance of this group of intermediaries on firm-level outcomes (Graf-Vlachy et al. 2020), future research could further investigate reasons for this. For instance, ethnographic studies could elaborate on the sensemaking processes of journalists, particularly within media outlets. Endogenous practices (e.g., hiring) may perpetuate prevailing norms and perceptions of these outlets, providing a more nuanced picture than a macro view of media outlets as used in this study.

Appendix 1

See Table 7.

Table 7 Comparison model 3 with humility scores.

Variables	FT (Model 3)		NYT (Model 3)		WP (Model 3)	
	b	*p*-value	*b*	*p*-value	*b*	*p*-value
(Constant)		0.003		0.460		0.497
Humble	0.267	0.065	−0.021	0.895	−0.029	0.893
CEO tenure	−0.376	0.046	−0.052	0.797	0.028	0.922
CEO Dual	0.115	0.505	−0.077	0.701	−0.119	0.666
CEO cash compensation in Dollar	0.238	0.136	0.551	0.007	0.277	0.272
CEO restricted stock compensation	0.252	0.189	0.086	0.692	−0.620	0.053
Total compensation	−0.445	0.026	−0.488	0.034	−0.267	0.369
CEO education	0.174	0.325	0.100	0.622	−0.064	0.819
MBA Dummy (1 = MBA; 0 = otherwise)	−0.096	0.439	0.045	0.756	0.330	0.111
Nationality dummy (1 = US; 0 = otherwise)	−0.649	0.003	−0.485	0.035	−0.329	0.271
Firm age	0.048	0.755	0.149	0.408	−0.161	0.516
High Discretion (Hambrick and Abrahamson 1995)	−0.061	0.633	0.173	0.257	0.516	0.023
Tech Industry industry (OECD 2009)	0.040	0.811	0.158	0.420	−0.077	0.774
Return on Assets (Net Income/total assets) 2012	−0.126	0.385	−0.050	0.765	−0.218	0.348
Total Assets Per Share 2012	−0.166	0.380	−0.076	0.724	−0.030	0.921
Cash Per Share 2012	−0.066	0.760	0.423	0.110	0.497	0.169
EBIT 2012	0.271	0.180	0.075	0.743	−0.050	0.873
EBITDA 2012	−0.072	0.748	0.420	0.125	0.634	0.097
CEO Gender	0.232	0.152	−0.438	0.028	−0.435	0.099
Superstar_Dummy	−0.111	0.463	0.065	0.709	0.279	0.256
Neuro	0.223	0.432	0.629	0.070	0.232	0.610
Extraversion	−0.391	0.122	0.291	0.309	0.139	0.721
Openness	1.060	0.008	0.221	0.592	−0.136	0.810
Agreeableness	1.572	0.001	0.264	0.537	−0.063	0.915
Conscience	−1.059	0.005	0.060	0.875	0.056	0.916
R^2	0.887		0.847		0.707	
Adj. R^2	0.692		0.584		0.205	

Appendix 2

See Table 8.

Table 8 Comparison model 3 with narcissism scores

Variables	FT (Model 3)		NYT (Model 3)		WP (Model 3)	
	b	*p*-value	*b*	*p*-value	*b*	*p*-value
(Constant)		0.029		0.413		0.665
Narcissism	−0.066	0.761	0.223	0.285	0.367	0.191
CEO tenure	−0.417	0.090	−0.098	0.655	−0.054	0.853
CEO Dual	0.248	0.308	0.053	0.812	−0.008	0.979
CEO cash compensation in Dollar	0.120	0.567	0.461	0.030	0.245	0.352
CEO restricted stock compensation	0.251	0.297	0.088	0.691	−0.593	0.058
Total compensation	−0.472	0.058	−0.495	0.036	−0.170	0.559
CEO education	0.194	0.366	0.069	0.729	−0.061	0.818
MBA Dummy (1 = MBA; 0 = otherwise)	−0.222	0.244	0.194	0.275	0.566	0.026
Nationality dummy (1 = US; 0 = otherwise)	−0.546	0.030	−0.435	0.059	−0.261	0.371
Firm age	0.085	0.668	0.043	0.817	−0.246	0.329
High Discretion (Hambrick and Abrahamson 1995)	−0.072	0.668	0.251	0.124	0.581	0.013
Tech Industry industry (OECD 2009)	0.173	0.425	0.204	0.318	−0.175	0.516
Return on Assets (Net Income/total assets) 2012	−0.191	0.290	−0.044	0.790	−0.242	0.280
Total Assets Per Share 2012	−0.199	0.399	−0.139	0.527	−0.090	0.756
Cash Per Share 2012	0.098	0.749	0.706	0.025	0.626	0.117
EBIT 2012	0.430	0.097	0.106	0.645	−0.200	0.518
EBITDA 2012	−0.199	0.524	0.193	0.507	0.668	0.099
CEO Gender	0.186	0.313	−0.552	0.005	−0.462	0.056
Superstar_Dummy	−0.118	0.508	0.045	0.786	0.399	0.087
Neuro	0.144	0.688	0.639	0.073	0.055	0.903
Extraversion	−0.218	0.480	0.448	0.133	0.189	0.621
Openness	1.238	0.017	0.244	0.578	−0.474	0.420
Agreeableness	1.704	0.003	0.229	0.617	−0.369	0.546
Conscience	−1.076	0.019	0.343	0.381	0.292	0.571
R^2	0.812		0.835		0.709	
Adj. R^2	0.490		0.553		0.210	

Dependent variable: emotional tone

Dependent variable: positive emotions

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Declarations

Conflict of interest The authors have no relevant financial or non-financial interests to disclose

Informed Consent The consent is not required as information is anonymized and the submission does not include information that involves direct human participation.

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