

**Welcome to the Gray Zone:
Shades of Honesty and Financial Misreporting**

Pascale Lapointe-Antunes
Goodman School of Business
Brock University
plapointe@brocku.ca

Kevin Veenstra*
DeGroote School of Business
McMaster University
veenstk@mcmaster.ca

Kareen Brown
Goodman School of Business
Brock University
kbrown6@brocku.ca

Heather Li
Nanyang Business School
Nanyang Technological University
heatherli@ntu.edu.sg

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ABSTRACT

We examine the influence of CFO/CEO honesty perceptions on earnings management for the largest publicly traded companies in America, and show that visual cues play a significant role. Specifically, after controlling for incentives (i.e. stock-based compensation, bonuses, leverage) and opportunities (i.e. auditor independence, internal control deficiencies), members of senior management perceived to be less honest engage in higher levels of both accruals management and real earnings management. Interestingly, the beneficial impact of perceived honesty on earnings quality is most pronounced when both the CFO and the CEO are perceived to be honest. Findings are consistent with our conjecture that both the CFO and CEO independently contribute to a firm's reporting environment.

Keywords: Fraud triangle, rationalization, earnings management, visual cues.

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1. Introduction

This paper explores whether and how perceived CFO and CEO honesty is associated with a firm's propensity to engage in earnings management. We focus on S&P 500 companies for which there already is significant due diligence by both external and internal auditors to explore the "gray area" of financial reporting choices. Prior research targets the most egregious instances of financial reporting misconduct by focusing on SEC enforcement actions, restatements and class action lawsuits even if few instances of fraud are detected, and ultimately prosecuted. This creates a self-selection bias that is likely to significantly understate the amount of questionable behaviour being conducted by executives (Amiram et al. 2018). Dechow et al. (2011) show an increase in abnormal accruals and a higher probability of manipulation in the years leading up to a material misstatement. Similarly, Jones et al. (2008) find that instances of fraudulent financial reporting are significantly associated with discretionary accruals and accrual estimation errors. Managing earnings within GAAP may deceive shareholders and creditors even if it is not illegal. As such, accruals and real earnings management constitute the lower end of the financial reporting misconduct continuum.

Prior research shows the CEO and CFO set the "tone at the top" for ethical behaviour. In fact, 90% of accounting fraud cases in US public companies involves the CEO and/or the CFO (Beasley et al. 2010). Financial reporting fraud is almost always perpetrated by groups of individuals, led by someone in top management (Anand et al. 2015). Research on the correlates and effects of ethical leader behavior demonstrates mainly positive relationships with a variety of followers' attitudes and behaviors, such as trust, perceived leader effectiveness, commitment and

organizational citizenship behavior (Ashforth and Anand 2003; Brown et al. 2005; Piccolo et al. 2010). Many subordinates will do as they are told without consideration of the legality or ethicality of their actions if they believe they are being loyal when they react to an edict from above to make the number at all costs (Wolfe and Hermanson 2004). As the senior manager in charge of financial reporting, the CFO is an ideal position to engage in financial misreporting. Yet, the majority of research to date focuses exclusively on the role of the CEO in influencing and propagating financial reporting fraud (Trevino et al. 2006). We concentrate on the CEO and CFO to better understand whether and how they independently contribute to a firm's financial reporting quality.

The determinants of financial reporting misconduct are well-documented in the literature. Incentives to manipulate earnings include performance-based compensation (e.g. Healy 1985; Holthausen et al. 1995; Efendi et al. 2007), financing and leverage (e.g. Sweeney 1994; Dichev and Skinner 2002; Beatty and Weber 2003), operating losses (e.g. Burgstahler and Dichev 1997; Roychowdhury 2006; Burgstahler and Eames 2010) and strings of consecutive positive earnings (Dechow, Sloan, and Sweeney 1996). Incentives can only be acted upon if opportunities to manipulate earnings exist. Prior research, for example, shows increased levels of earnings management following the disclosure of internal control deficiencies (e.g. Ge and McVay, 2005; Ashbaugh-Skaife et al., 2008; Chan, Farrell and Lee, 2008) or as the quality of board and audit committee oversight decreases (Efendi et al. 2007; Bilal, Chen, and Komal 2018). More recent research also demonstrates the importance of distinguishing between individual traits and firm characteristics to explain firm outcome measures (Bertrand and Schoar 2003, Bamber et al. 2010, Ge et al. 2011, Demerjian et al. 2013).

Capital market and contracting motivations are necessary, but not sufficient, conditions to consistently explain financial reporting misconduct (Amiram et al. 2018). When presented with seemingly identical incentives and opportunities, only some individuals will choose to commit financial reporting fraud (Wells, 2004). According to the “fraud triangle”, a framework developed by American sociologist Donald Cressey (1953), a third factor, rationalization, must also be present for an individual to commit fraud. Rationalization refers to the ability of the perpetrator to justify the fraud to them self to make it acceptable or justifiable. It is an unobservable internal cognitive process (Cressey 1953). The fraud triangle underlies many regulatory bodies’ approach to fraud risk assessment, including COSO, the ACFE, the IAASB and the AICPA. According to Wilks and Zimbelman (2004), auditors consider rationalization to be the most important component of the fraud triangle. Surprisingly, the literature to date contains very limited research on rationalization, prompting some researchers to call it a relative mystery (Hogan et al., 2008; Wells, 2004). We take advantage of recent developments in the personality literature to “open the door” behind rationalization. Our focus on the honesty dimension of personality is motivated by the work of Lee and Ashton (2012), and recent findings from Murphy (2012) that character predicts misreporting rather than traditional notions of rationalization.

In our main analyses, we use visual cues as proxies for perceived CFO and CEO honesty. While the belief that genetics, leading to both untrustworthy-looking faces and untrustworthy behavior, has been historically contentious (see Todorov and Porter 2014 for discussion), recent research by Slepian and Ames (2016) finds that face-based judgments can be used to predict trustworthiness. Jia et al. (2014) find a positive association between male CEOs’ facial

masculinity and various misreporting proxies, including SEC enforcement actions, insider trading, and option backdating.

In our robustness checks, we also use verbal cues as proxies for honesty. The importance of textual analysis in explaining firm outcomes (i.e. profitability, leverage, fraud) is well-established in the literature. For example, Larcker and Zakolyukina (2012) examine the language of deceptive executives during conference calls and find they exhibit more references to general knowledge, fewer non-extreme positive emotions, and fewer references to shareholder value.

We expect a negative association between perceived honesty and both accrual-based and real earnings management. As the CEO and CFO work as a team in an organization, we hypothesize that both individuals will independently contribute to a firm's propensity to engage in earnings management. Consistent with the adage that "one bad apple spoils the bunch", we suspect that the highest quality financial statements are observed in those organizations where both the CEO and the CFO are perceived to be more honest.

We download the photos of CEOs and CFOs from company websites, annual reports and Google Images for the S&P 500 group of companies for the years 2011, 2012 and 2013. We obtain quarterly earnings call transcripts from the Thomson Reuters Street Events database. Our complete sample consists of 950 firm-year observations for which both photos and adequate conference call data are available. Each photo is rated for perceived honesty by an average of 18 MTurk workers, a participant pool run by Amazon.com. We parse each quarterly earnings call transcript into CEO and CFO components, using textual analyses programs to assess perceived honesty.

We first examine the association between perceived honesty and earnings management for both the CEO and the CFO independently. After controlling for a number of incentives,

opportunities and control variables, we find a strong impact of CFO visual cues for perceived honesty/humility on the propensity to engage in both accrual-based and real earnings management. Interestingly, for our sample, there are no results when examining the impact of the CEO in isolation. Of all the accrual-based measures, consistent with Jones et al. (2008), we find that the Dechow and Dichev-based measures have the highest association with perceived honesty.

Further, we examine the association between perceived honesty and earnings management when CEOs and CFOs for a company are both perceived to be more (less) honest. Findings generally support the assertion that matching matters. More specifically, when both the CEO and the CFO are perceived to be more honest, the firm engages in less earnings management than when either one or both individuals is perceived to be less honest. Said another way, when both the CEO and the CFO are perceived to be less honest, the firm engages in more earnings management than when one or both individuals are perceived to be more honest.

Our paper contributes to the literature in several ways. First, through the inclusion of both CEO and CFO characteristics in our models, we address the question as to the relative importance of the CEO and the CFO in acts of earnings management. Consistent with recurring findings that one unethical individual can impact other individuals (Elias 2004, Pinto et al. 2008), we find that CFO personality moderates the relationship between CEO personality and earnings management propensity.

Second, we contribute to the growing body of literature interested in the ability of the honesty/humility personality factor to account for individual differences in ethical behavior. Consistent with predictions from early work on this sixth dimension of personality, we find that

perceived honesty plays a significant role in explaining the differential levels of earnings management observed across S&P 500 companies.

Third, research on fraud supports the assertion that most instances of fraud are not one-time events. Some individuals have a pre-disposition towards unethical behaviour and likely behave unethically on a consistent basis (Murphy, 2012). Since AAERs (the focus of many other studies) only represent the most egregious unethical acts and those which the SEC has decided to prosecute, we focus our analysis by looking at other actions, namely instances of questionable financial reporting quality such as accrual-based and real earnings management. This analysis enables us to explore the evolution of unethical behaviour within a given firm's CEO/CFO management team over time, as well as explore the pervasiveness of questionable behaviour across the entire S&P500. It also addresses the call by prior researchers to differentiate between legal fraud (fraud that clearly contravenes existing laws) and moral/ethical fraud (actions that misrepresent key information in contravention of existing ethical norms) (Anand et al., 2015).

Finally, our findings have important practical implications. While the importance of textual analysis in explaining firm outcomes (i.e. profitability, leverage, fraud) has been established in the literature, a paucity of work has been done to explore the influence of visual cues on these same firm outcomes. In a world where information is critical to success (whether it be making investment decisions or extending credit to a prospective customer), we find that visual cues provide a useful source of information in assessing the quality of a firm's management team.

The remainder of this paper is organized as follows. Section 2 discusses the related literature and develops the hypotheses. Section 3 describes the data and research design. Section 4 presents the results of the empirical analysis. Section 5 concludes.

2. Literature Review and Hypotheses Development

Financial statement fraud is typically explained as a deliberate and rational choice to circumvent accounting rules, which results in financial reports that are misleading or deceptive (Siegel, 1992). It involves violating generally accepted accounting principles (GAAP), through such actions as overstatement of assets, understatement of expenses, overstatement of revenues and misclassification of financial statement asset/liability and revenue/expense items (Feroz et al., 1991; Beasley et al., 2000; Beasley et al., 2010; Dechow et al., 1996). Financial reporting choices that misrepresent key information in contravention of existing ethical norms, but do not clearly contravene existing GAAP, is considered moral/ethical fraud by Anand et al., 2015. To meet the definition of legal fraud, the misrepresentation must be material, committed negligently or with knowledge of its falsity, and causally related to the plaintiff's loss (Amiram et al., 2018). Financial statement misreporting exists along a continuum, from earnings management on the left side of the spectrum to financial reporting fraud on the right side of the spectrum. While lawsuits can be associated with discretionary reporting choices along the full spectrum, they become more likely as one moves from the left to the right (Amiram et al., 2018).

We examine the determinants of financial statement misreporting on the left side of the spectrum, using the fraud triangle as our theoretical framework. Criminologist and sociologist Donald Cressey (1953) developed the Fraud Triangle to explain the necessary conditions for fraud to occur. The triangle consists of three necessary elements: 1) incentive/pressure; 2) opportunity; and 3) rationalization. The CEO/CFO team is a natural research focus since: 1) a

large portion of their compensation is based on company financial performance (implying large incentives); and 2) they collectively possess significant proprietary information about the firm's financial position, weaknesses in internal controls and have the ability to override these controls (implying many opportunities) (Zhang et al., 2008; Schrand and Zechman, 2012). Prior research suggests that even if a CEO is not directly involved, he/she may direct or enable others to commit financial statement fraud (Ermann and Lundman, 1987; Zahra et al., 2005, 2007). While incentives and opportunities are relatively easy to identify and measure, rationalization is much more difficult to assess. We rely on work in both the accounting and psychology literatures to explore new empirical proxies for rationalization.

Rationalization is difficult to explore because it is tied to the unobservable inner thoughts and emotions of the perpetrator (Antenucci et al. 2010). A number of alternative measures have been considered over the years. Albrecht et al.'s (1984) fraud scale model replaces rationalization with personal integrity, i.e. "the personal code of ethical behavior each person adopts" (p. 18). Fraud risk assessment is one of the toughest challenges facing auditors (Carpenter, 2007; Carcello and Hermanson, 2008; Hogan et al., 2008; Beasley et al., 2010; Hammersley et al., 2011; Johnson et al., 2013; Trompeter et al., 2013). In fact, only 10% of the misconduct cases studied by Dyck et al. (2010) were detected by the external auditors. In an effort to improve external auditors' ability to detect fraud, auditing standards on fraud risk assessment (e.g. ISA 240) thus extend the rationalization component to require formal assessment of more easily observable management attitudes. The revised COSO framework adopts the same approach. Most recently, Murphy (2012) examines the relation between attitudes/character traits and rationalization. Despite the fact that attitude/rationalization constitute the same side of the fraud triangle in existing frameworks, she finds that they are

different constructs with little direct association: character predicts misreporting while rationalization is a consequence of misreporting.

Although sparse, prior research on attitude/rationalization tends to focus on the extremes of CEO personality in experimental settings. The Dark Triad focuses on three personality traits that are aversive but still within the normal range of social functioning: narcissism, Machiavellianism and psychopathy. These personality traits are associated with charismatic leadership and a better ability to achieve goals by using influence tactics, making individuals with higher levels of either trait more likely to succeed in the corporate world and hold CEO positions (Judge et al. 2009; Babiak et al. 2010). In the context of financial reporting, Majors (2016) find that managers with stronger levels of psychopathy, Machiavellianism or narcissism report more aggressively than their counterparts with lower levels of the three personality traits. Murphy (2012) finds that high Machiavellians (individuals characterized by a disregard for morality and a strong focus on self-interest and personal gain) are not only more likely to misreport in the presence of opportunity and motive, they are likely to do so in higher amounts.

These findings provide evidence that the “attitude” component of the fraud triangle holds promise in extending our ability to explain instances of financial misreporting. Little attention has been devoted to better understanding the personality of individuals that display lower levels of psychopathy, narcissism and Machiavellianism but varying levels of other personality traits that can be used to measure their character and personal integrity. Proxies that can be used in empirical settings are also needed to further our understanding of the association between character and financial misreporting and examine the generalizability of the existing experimental results. We suggest using the sixth dimension of personality, honesty/humility, to do so.

Prior to the year 2000, most personality theorists generally agreed that five trait dimensions derived from factor analyses of ratings of trait adjective pairs, the Big Five personality model, represent a reasonable compromise that is at least a partially accurate measure of people's personalities (Barrett & Pietromonaco, 1997; McCrae & Costa, 1987; Watson, 1989). However, less evidence exists regarding the relationship between personality and behaviour, particularly when it comes to financial reporting choices (e.g. Funder 2001; Plockinger et al. 2016).

Ashton and Lee (2005) add a sixth dimension – honesty/humility – to the Big Five model. Their model is commonly known as the HEXACO inventory of personality traits, or Big Six (Ashton and Lee 2005; Ashton and Lee 2008; Ashton and Lee 2010; Blickle et al. 2006, DeVries et al. 2009; Hershfield et al. 2012; Lee et al. 2005; Weller and Tikir 2011). In the words of Hilbig and Zettler (2015), honesty/humility is the “quintessential basic trait to account for individual differences in (un)ethical behavior”. Honesty-humility is associated with increased cooperativeness (Hilbig et al., 2015), fewer sexual quid pro quos (Ashton and Lee, 2008b); more moral behavior and honest reporting (Hilbig et al., 2015), and higher integrity and less counterproductive work behavior (Marcus et al., 2007; Zettler and Hilbig, 2010). Further research shows that the six personality factors can be found in all languages and cultures (Ashton and Lee, 2010; Ashton et al., 2004) and are stable across an individual's lifetime (Harris, 1995; Roberts et al., 2006). As such, the honesty/humility dimension of the Big Six model may provide important insights into the varying shades of CFO and CEO integrity and character, as proxies for attitude/rationalization, and their association with financial reporting misconduct.

Honesty/humility would ideally be measured by having sample CEOs and CFOs complete the HEXACO personality survey (see Appendix D). Since this is not feasible in a

large-scale empirical study, we turn to research from trait theorists on the ability of face-based judgments to predict trustworthiness and honesty. Research shows that inferences of trustworthiness occur within 38 seconds and are virtually unchanged as exposure increases (Baker et al. 2015). The face, often referred to as the window to the soul, is used to communicate intentions and emotions and scrutinized by others during encounters (Porter et al. 2008). Facial appearance based on unchanging aspects of facial structure, as displayed in photos, is as successful as dynamic emotional expression in helping the observer form an impression of trustworthiness (Baker et al. 2015). First impressions of trustworthiness are also shown to form the basis of judgments of honesty (Baker et al. 2015).

Whether genetics can lead to both untrustworthy-looking faces and behavior has historically been more contentious (see Todorov and Porter 2014 for a discussion). Non-verbal behavior, including gestures and facial expressions, can accurately convey a range of information, including values, opinions, physical states such as fatigue, cognitive states such as confusion or comprehension and emotions (Helfat and Peteraf 2015). However, stereotypical responses to faces may shape the social environment, leading to self-fulfilling prophecy effects. For example, people with facial features that elicit attributes of agreeableness may be treated as more trustworthy and may perhaps consequently develop more agreeable personality characteristics (Slepian and Ames 2016). Chronic exposure to elevated levels of hormones, such as cortisol, growth hormone and estrogen is also shown to lead to changes in facial appearance that are correlated with behavioral dispositions (Jia et al. 2014). Research by Porter et al. (2008) finds that initial judgments of trustworthy faces are more accurate than judgments of untrustworthy faces.

Taken together, the findings to date suggest that face-based judgments of perceived CFO and CEO honesty could be used as proxies for attitude/rationalization. CFOs and CEOs perceived to be more honest should be less likely to manage earnings within GAAP to deceive investors. Hence, our first research hypothesis:

H1: Visual cues for perceived CFO(CEO) honesty are negatively associated with the propensity to engage in earnings management.

Personality research reveals that friends are somewhat similar in their levels of honesty and openness to experience, but not in their levels of emotionality, extraversion, agreeableness, and conscientiousness (Ashton, 2013). In addition, the honesty and openness to experience personality factors are shown to underlie our choices regarding goals that are worth pursuing. Not surprisingly, many CEOs replace the CFO with someone of their own personal choice at the time of commencing employment at a new firm, perhaps as a result of divergences in opinion caused by differing levels of honesty and/or openness to experience. We explore whether CFOs and CEOs who are both perceived to be more (less) honest based on visual and verbal cues engage in less (more) financial reporting misconduct. This leads to our second research hypothesis, stated in the alternative form:

H2: The association between visual cues and earnings management is more pronounced when the CFO and CEO cues are consistent.

3. Method

Sample and data

We obtain a list of companies included in the S&P 500 index for the years 2011, 2012 and 2013. Due to data availability issues for a number of CEOs and CFOs, our sample is

restricted to a total of 950 firm-year observations for which both CEO and CFO photos and sufficient conference call data is available. We download photographs of all CEOs and CFOs from their respective company websites as well as from historical annual reports and Google Images when required. Perceived facial honesty is assessed using ratings obtained from Amazon Mechanical Turk workers, as detailed below. Earnings management proxies are calculated using Compustat data, executive compensation data is obtained from Execucomp, and internal control deficiency/audit fee data is obtained from Audit Analytics.

Models

Honesty and earnings management

We use the following regression model to examine the association between visual cues for perceived honesty/humility and earnings management:

$$\begin{aligned}
 EM_{i,t} = & VISUAL_{i,t} + STOCKCOMP_{i,t} + BONUS_{i,t} + LOSS_{i,t} + LEVERAGE_{i,t} \\
 & + SECTION302_{i,t} + PERCAUDITFEES_{i,t} + SIZE_{i,t} + MTB_{i,t} + ROA_{i,t} \\
 & + GENDER_{i,t} + YEAR + \varepsilon_{i,t}
 \end{aligned} \tag{1}$$

Model (1) is estimated for both CFOs and CEOs independently. *EM* is one of two measures for accruals management and two measures for real earnings management. *VISUAL*, *STOCKCOMP*, *BONUS* and *GENDER* are CFO- and CEO-specific measures. CFOs and/or CEOs are expected to manage earnings if they have incentives and the opportunities to do so. *STOCKCOMP*, *BONUS*, *LOSS* and *LEVERAGE* are proxies for incentives to manage earnings while *SECTION302* and *PERCAUDITFEES* measure opportunities to do so. If visual cues for perceived honesty are negatively associated with earnings management as predicted by H₁, the coefficient for *VISUAL* will be negative and significant.

Interaction between CFO and CEO

We examine the association between perceived honesty and earnings management when the CFO and the CEO for a company are perceived to be more (less) honest. First, we use the CFO and CEO visual scores relative to the median to classify sample firms into subgroups. We create an indicator variable equal to 1 if the CFO visual score is below median and the CEO visual score is above or equal to median, and 0 otherwise ($<MEDIAN/>=MEDIAN$); an indicator variable equal to 1 if the CFO visual score is above or equal to median and the CEO visual score is lower than median, and 0 otherwise ($>=MEDIAN/<MEDIAN$); and an indicator variable equal to 1 if the CFO and CEO visual scores are both above or equal to median, and 0 otherwise ($>=MEDIAN/>=MEDIAN$).

Hence, the following regression model:

$$\begin{aligned} EM_{i,t} = & < MEDIAN \therefore \geq MEDIAN_{i,t} + \geq MEDIAN \therefore < MEDIAN_{i,t} \\ & + \geq MEDIAN \therefore \geq MEDIAN_{i,t} + STOCKCOMP_{i,t} + BONUS_{i,t} + LOSS_{i,t} \\ & + LEVERAGE_{i,t} + SECTION302_{i,t} + PERCAUDITFEES_{i,t} + SIZE_{i,t} \\ & + MTB_{i,t} + ROA_{i,t} + GENDER_{i,t} + YEAR + \varepsilon_{i,t} \end{aligned} \quad (2)$$

If the ability of cues to predict behaviour is more pronounced when CFO visual cues are consistent with CEO visual cues, the coefficient for $>=MEDIAN/>=MEDIAN$ will be negative and significant.

We then use the CFO and CEO visual scores relative to the 25th percentile (bottom quartile) and 75th percentile (top quartile) values to classify sample CFOs (CEOs) into different subgroups. We create an indicator variable equal to 1 if the CFO and CEO visual scores are both in the top quartile, and 0 otherwise ($TOPQ/TOPQ$); an indicator variable equal to 1 if the CFO

visual score is in the bottom three quartiles and the CEO visual score is in the top quartile, 0 otherwise (*BOTTOM3Q/TOPQ*); and an indicator variable equal to 1 if the CFO visual score is in the top quartile and the CEO visual score is in the bottom three quartiles, and 0 otherwise (*TOPQ/BOTTOM3Q*). We repeat the process and create an indicator variable equal to 1 if the CFO and CEO visual scores are both in the bottom quartile, and 0 otherwise (*BOTTOMQ/BOTTOMQ*); an indicator variable equal to 1 if the CFO visual score is in the top three quartiles and the CEO visual score is in the bottom quartile, 0 otherwise (*TOP3Q/BOTTOMQ*); and an indicator variable equal to 1 if the CFO visual score is in the bottom quartile and the CEO visual score is in the top three quartiles, and 0 otherwise (*BOTTOMQ/TOP3Q*).

Hence, the following regression models:

$$\begin{aligned}
EM_{i,t} = & TOPQ \cdot TOPQ_{i,t} + BOTTOM3Q \cdot TOPQ_{i,t} + TOPQ \cdot BOTTOM3Q_{i,t} \\
& + STOCKCOMP_{i,t} + BONUS_{i,t} + LOSS_{i,t} + LEVERAGE_{i,t} + SECTION302_{i,t} \\
& + PERCAUDITFEES_{i,t} + SIZE_{i,t} + MTB_{i,t} + ROA_{i,t} + GENDER_{i,t} + YEAR \\
& + \varepsilon_{i,t}
\end{aligned} \tag{3}$$

$$\begin{aligned}
EM_{i,t} = & BOTTOMQ \cdot BOTTOMQ_{i,t} + TOP3Q \cdot BOTTOMQ_{i,t} + BOTTOMQ \cdot TOP3Q_{i,t} \\
& + STOCKCOMP_{i,t} + BONUS_{i,t} + LOSS_{i,t} + LEVERAGE_{i,t} + SECTION302_{i,t} \\
& + PERCAUDITFEES_{i,t} + SIZE_{i,t} + MTB_{i,t} + ROA_{i,t} + GENDER_{i,t} + YEAR \\
& + \varepsilon_{i,t}
\end{aligned} \tag{4}$$

If the ability of cues to predict behaviour is more pronounced when CFO visual cues are consistent with CEO visual cues as predicted by H₂, the coefficient for *TOPQ/TOPQ* will be

negative and significant and the coefficient for *BOTTOMQ/BOTTOMQ* will be positive and significant.

Variables

Dependent variable - Earnings management

We use unsigned (absolute) values for both discretionary and real earnings management measures in all of our analyses. While firms typically engage in earnings management to inflate reported earnings, the possibility also exists for firms to use earnings management techniques to decrease reported earnings i.e. “big bath” accounting, income smoothing. In addition, while firms can strategically time debits and credits, as well as real business activities, in the short-term, accruals must reverse in future periods and a company must increase their levels of investment in the future to stay viable. We expect more honest CFOs and CEOs to engage in less earnings management, whether income-increasing or income-decreasing.

Accruals management – We use two models to measure accruals management. Given our focus on less egregious instances of earnings management, we first use the modified Jones model (Dechow, Sloan and Sweeney, 1995) matched by performance (Kothari, Leone and Wasley, 2005) to estimate normal accruals (see Appendix A for formula details). In all regressions, *ABACC* is used to denote this performance matched modified Jones model. Second, we use the Dechow and Dichev (2002) model to estimate normal working capital accruals (see Appendix A for formula details). Throughout our analyses, *DICHEV* is used to denote the Dechow-Dichev model.

Real earnings management - Consistent with prior research (e.g. Roychowdhury, 2006; Cohen and Zarowin, 2010; Zang, 2012), we examine three methods of manipulating real activities:

- 1) Accelerating the timing of sales and/or generating additional unsustainable sales to increase reported earnings. If the CFO or CEO attempt to artificially inflate current year sales by offering discounts or more lenient credit terms, sales will increase without a corresponding increase in cash inflows from sales. Production costs relative to sales will also appear to be abnormally high. Throughout our analyses, *ABCFO* is used to denote abnormal cash flows from operations.
- 2) Reducing discretionary expenditures to increase reported earnings. If the CFO or CEO reduce spending on R&D, advertising, and SG&A expenses, discretionary expenses will decrease without a corresponding decrease in sales. In all regressions, *ABEXP* is used to denote abnormal discretionary expenditures.
- 3) Overproducing or increasing production to report lower COGS and higher earnings. If the CFO or CEO produce more inventory than needed to meet demand, unit cost and COGS will decrease without a corresponding increase in sales. Throughout our analyses, *ABPROD* is used to denote abnormal production costs.

Following Cohen and Zarowin (2010) and Zang (2012), we aggregate the three individual measures into two proxies. *REMI* is the sum of *ABEXP* and *ABPROD*. *REM2* is the sum of *ABCFO* and *ABEXP*. Higher values of *REMI* and *REM2* indicate more real activities manipulation.

Independent variables

Measures of Perceived Honesty/Humility - Visual Cues

Raw honesty scores are obtained from Amazon Mechanical Turk (MTurk), a crowdsourcing Internet marketplace that enables individuals and employers (known as Requesters) to coordinate the use of human intelligence to perform tasks. Employers post jobs known as HITs (Human Intelligence Tasks) and workers (called Providers or more colloquially Turkers) can then select jobs and complete tasks for a monetary payment set by the Employer. For each photo, MTurk workers rate the perceived honesty by answering a series of 10 questions, as detailed in Appendix B and adapted from the HEXACO-PI-R self-report form available at <http://hexaco.org/hexaco-inventory> (Lee and Ashton, 2018). For each question, the worker selects one of five options as follows: 1 – strongly disagree; 2 – disagree; 3 – neutral; 4 – agree; and 5 – strongly agree. To ensure accuracy, only Turk workers with a HIT (i.e. job) approval rating greater than or equal to 95% and at least 100 approved HITs are used to rate the photographs.

Each photo is rated, on average, 18 times by MTurk workers. The use of a composite rating is consistent with the work of Hamermesh and Parker (2005), who noted that the estimated coefficients are larger when based on evaluations of a composite measure rather than a single rater. Composite measures are more reliable because they are based on aggregations of correlated responses. The actual number of ratings varies slightly from photo to photo because a random number generator is used to select photos for each rater.

The raw quantitative scores for each CEO/CFO photo are then converted into a single perceived honesty measure. First, the mean of a rater's 10 scores for a given photo is calculated, taking into consideration those six questions which are reverse coded (see Appendix B for

details). The mean score is increasing in perceived honesty, with higher (lower) scores representing higher (lower) perceived honesty. Next, the scores for each rater are analyzed to assess those raters who are unreliable.¹ The scores for the reliable raters are then used to calculate the mean honesty score for each CEO/CFO photo. Finally, the variable is normalized (between 0 and 1) to facilitate the interpretation of regression coefficients.² We refer to this variable as the normalized perceived visual honesty score (*VISUAL*).

All photographs are obtained from the Internet and in all cases, the facial expression is either smiling or neutral (little variation), thus unlikely to affect the empirical findings. A study by Morrison et al. (2013) shows identity to be 2.2 times as important as emotion (anger, disgust, fear, happiness, sadness, surprise) in rating attractiveness for male and female pictures. Since the hard tissues of the face are unchangeable, raters are able to make honesty judgments based on structural cues.

Incentives to manage earnings

Incentives to manage earnings exist when management is under pressure to achieve an earnings target and the consequences of missing the target are significant (e.g. CAS 240, CPA Canada, 2018). Examples of risk factors include significant portions of executive compensation, including bonuses and stock-based compensation, being contingent upon meeting set earnings targets; operating losses threatening the entity's ability to continue as a going concern; and the need to obtain additional debt financing to stay competitive (CAS 240, CPA Canada, 2018).

¹ To control for rating quality, we only include a rater's scores in our sample if their ratings are of consistent quality. More specifically, we proxy for quality in two ways: (1) the standard deviation of mean scores for a given rater is at least 0.3; and (2) the average standard deviation of responses to the 10 honesty questions for a given rater is less than 1.1. Both of these criteria must be met for the rater's ratings to be removed from our analysis. These cutoffs, though somewhat arbitrary, seem reasonable based on our review of the raw data.

² Some researchers standardize the individual scores by subtracting the mean and dividing by the coder's standard deviation. We do not adopt this method because it could potentially reward "irresponsible" judges that predominantly assign the average rating and penalize those that followed instructions and used the entire scale.

We include four proxies to capture these incentives to manage earnings. *STOCKCOMP* is the ratio of equity-based compensation to total compensation. *BONUS* is the ratio of bonus-based pay to total compensation. The relationship between executive compensation and earnings management is well-documented in the literature (e.g. Healy, 1985; Holthausen et al., 1995; Balsam, 1998; Bergstresser and Philippon, 2003). We expect *STOCKCOMP* and *BONUS* to be positively associated with earnings management measures.

LOSS is an indicator variable equal to 1 if net income is negative, and 0 otherwise. Prior research supports the existence of incentives to avoid losses (e.g. Burgstahler and Dichev, 1997; Roychowdhury, 2006; Burgstahler and Eames, 2010). We expect *LOSS* to be positively associated with all earnings management measures. *LEVERAGE* is the ratio of total debt to total assets. Prior studies suggest the potential for earnings management to avoid debt covenant violations increases with leverage (e.g. Sweeney, 1994; Dichev and Skinner, 2002; Beatty and Weber, 2003). Hence, we expect *LEVERAGE* to be positively associated with our earnings management measures.

Opportunities to manage earnings

Upper management members, including CFOs and CEOs, are in a unique position to manage earnings because they have the ability to override controls that appear to be operating effectively to manipulate accounting records. The risk of management override of controls is present in all entities, albeit at different levels (CAS 240, CPA Canada, 2018). We include two proxies for opportunities to manage earnings.

SECTION302 is an indicator variable equal to 1 if the CFO and CEO report internal control deficiencies under SOX 302, and 0 otherwise. The CFO and CEO are required to attest to

their responsibility for accuracy and veracity of financial reports and disclose any deficiencies in internal control under SOX Section 302. Prior research shows increased levels of real earnings management and accruals management following the disclosure of internal control deficiencies (e.g. Ge and McVay, 2005; Ashbaugh-Skaife et al., 2008; Chan et al. 2008). As such, we expect a positive association between *SECTION302* and all earnings management measures.

PERCAUDITFEES is the ratio of audit and audit-related fees to total fees. The ability for management to override controls is constrained by auditors, among others. Irrespective of the assessed risk of management override, auditors are required to perform procedures to test for the appropriateness of journal entries recorded in the general ledger at the end of a reporting period, review accounting estimates for biases, and evaluate the plausibility of the business rationale for significant transactions outside of the normal course of business (CAS 240, CPA Canada, 2018). We expect auditors to exercise better oversight as the ratio of audit and audit-related fees increase. If such is the case, *PERCAUDITFEES* will be negatively associated with all earnings management measures.

Control variables

We control for systematic variations in earnings management measures with size, growth opportunities, and profitability by including *SIZE*, *MTB* and *ROA* in all regression models. *SIZE* is the natural logarithm of total assets. *MTB* is the ratio of the market value of common shares at the end of the reporting period to the book value of common shares. *ROA* is the ratio of income before extraordinary items to beginning of period total assets.

We also include an indicator variable equal to 1 if the CFO (CEO) is male, and 0 otherwise (*GENDER*). Prior research suggests female CFOs and CEOs are less likely to engage

in earnings management (e.g. Liu et al. 2016; O'Neill et al. 2017). Hence, we expect *GENDER* to be positively associated with all earnings management measures.

4. Results

Descriptive statistics

Table 1 reports descriptive statistics for the variables included in the regression models. 77.76% (2.61%) of sample CFO and CEO compensation is equity-based (bonus-based) on average. This suggests strong incentives to manage earnings to protect equity-based compensation. Only 5.27% of sample firms reports losses. This is not surprising given our focus on S&P 500 firms, generally expected to be more profitable. 11.95% of sample firms disclose internal control deficiencies under SOX Section 302, supporting the existence of some opportunities for sample CFOs and CEOs to override controls to manage earnings. 87.95% of total audit fees are audit or audit-related on average. As such, we expect to see some evidence of auditor oversight acting as a constraint to real earnings and accruals management. Mean values for *SIZE* (9.8102), *MTB* (1.8295), and *ROA* (0.0620) suggest sample firms are large and profitable on average, consistent with their inclusion in the S&P 500 Index.

Table 2 presents pairwise correlations between our variables of interest. CFO visual cues for perceived honesty are negatively and significantly correlated with most earnings management measures. While the CEO visual cues are not significantly correlated with the earnings management measures, there is a significant positive correlation between CFO and CEO visual cues. Earnings management measures are highly correlated with one another. The high correlations between other measures support the existence of a concerted tendency to manage earnings both by managing earnings and manipulating real activities.

Table 3 explores potential interactions between visual and verbal cues for honesty (Panels A and B), as well as between CFO and CEO visual cues (Panel C) and CFO and CEO verbal cues (Panel D) with frequency tables. The relationship between the classification factors is tested with a Chi-2 test. The Chi-2 statistic is significant at the 1% level in all cases. Visual and verbal cues are therefore not independent classification factors, and each subgroup is significantly different from the others. This supports the existence of interaction effects between visual and verbal cues for honesty, and CFO and CEO matching based on visual or verbal scores,

Table 4 compares mean values for accruals management and real earnings management measures across subgroups of sample firms. Panels A and B partition the sample based on 25th percentile and 75th percentile values for *CFOVISUAL* (Panel A) and *CEOVISUAL* (Panel B). We test for differences between bottom quartile and top 3 quartiles; bottom 3 quartiles and top quartile; and bottom and top quartile. Panel C partitions the sample based on below/above median, 25th percentile and 75th percentiles values for combined CFO (CEO) visual scores.

We expect mean values for the earnings management measures to be higher when visual cues for perceived honesty are lower, individually or in combination. Individually, statistical significance is observed consistently for the CFO, but rarely for the CEO. When the CEO and CFO are analyzed in combination as noted in Panel C, statistical significance is observed consistently when comparing firms with the CEO/CFO in the top quartile with those firms where both the CEO/CFO are not in the top quartile.

Multivariate results

Perceived honesty and earnings management

Table 5 reports the OLS regression results of accruals management and real earnings management measures on visual cues for perceived honesty, incentives, and opportunities. Results for CFOs are presented in Panel A and results for CEOs are presented in Panel B. Each column reports the results from Model (1) when visual cues are included, consistent with H₁. An incremental R² is calculated by comparing the R² from a regression of earnings management measures on incentives, opportunities and control variables to the R² from a regression of earnings management measures on visual cues, incentives, opportunities and control variables. Coefficients for financial year indicator variables are not reported.

Consistent with H₁, the coefficient for *CFOVISUAL* is negative when *ABACC*, *DICHEV*, *REM1* and *REM2* are used as dependent variables, but not statistically significant for *ABACC*. Contrary to expectations, the coefficient for *CEOVISUAL* is not statistically significant in any of the regressions. Taken together, these results suggest a stronger association between visual cues for perceived CFO honesty and earnings management measures than visual cues for perceived CEO honesty and earnings management measures.

Results for incentives, opportunities and control variables are largely similar for all models and generally consistent with expectations. The coefficients for *CFSTOCKCOMP* and *CEOSTOCKCOMP* are positive and significant as predicted for most measures. The coefficients for *BONUS* are positive and significant in a few instances. This suggests stock-based compensation is a stronger incentive to manage earnings for both CFOs and CEOs. The coefficient for *LOSS* is positive and significant in most instances, indicating a strong incentive

for our sample firms to avoid reporting losses. The coefficient for *SECTION302* is positive and significant for *REMI* and *REM2*. Sample firms that disclose internal control deficiencies under SOX Section 302 therefore appear to engage in more earnings management, using real activities manipulation, consistent with CFOs and CEOs being more likely to override controls related to operational than financial reporting decisions that might be more scrutinized. The coefficient for *PERCAFEES* is significant in the predicted direction for *ABACC*, but positive and significant for *TOTACCR*. Auditors appear to have a stronger impact on accruals management than real activities manipulation, consistent with their focus on financial reporting decisions. The coefficients for all other control variables vary in significance and direction.

Interaction between CFO and CEO

Table 6 reports the OLS regression results of accruals management and real earnings management measures on CFOs and CEOs with matching levels of visual cues. The first column reports results for Model (2), the second column reports results for Model (3), and the third column reports results from Model (4). Subsample sizes for visual cues drawn from the full population are 537 for *BOTTOM3Q/BOTTOM3Q*; 174 for *BOTTOM3Q/TOPQ*; 175 for *TOPQ/BOTTOM3Q*; 64 for *TOPQ/TOPQ*; 547 for *TOP3Q/TOP3Q*; 165 for *TOP3Q/BOTTOMQ*; 164 for *BOTTOMQ/TOP3Q*; and 74 for *BOTTOMQ/BOTTOMQ*. Coefficients for financial year indicator variables are not reported.

Looking at the first column of Panel A, the coefficient for $\geq \text{MEDIAN} / \geq \text{MEDIAN}$ is negative and significant as predicted for *DICHEV* and *REM2*. The coefficient for $\geq \text{MEDIAN} / < \text{MEDIAN}$ is also negative and significant for *DICHEV*. The second column presents results relative to the reference subgroup of CFOs and CEOs where visual cues are both

in the bottom three quartiles (*BOTTOM3Q/BOTTOM3Q*). The coefficients for *TOPQ/TOPQ* are negative and statistically significant for *ABACC*, *DICHEV*, *REMI*, and *REM2*. The coefficients for other subgroups are not significant. These findings seem to support lower levels of earnings management when visual cues for both the CFO and CEO are in the top quartile.

The third column presents results relative to the reference subgroup of CFOs and CEOs where visual cues are both in the top three quartiles (*TOP3Q/TOP3Q*). The coefficients for *BOTTOMQ/TOP3Q* and *BOTTOMQ/BOTTOMQ* are positive and statistically significant in some instances. These results provide some support for higher levels of earnings management when visual cues for the CFO are in the bottom quartile. Taken together, results from Table 6 suggest differences in levels of earnings management are more likely to be observed when both the CEO and CFO are in the top quartile or when the CFO is in the bottom quartile of perceived honesty.

Robustness Checks

Measures of Perceived Honesty/Humility – Verbal Cues

Verbal communication is an important means by which executives communicate with stakeholders. For example, Bandiera et al. (2017) find that 85% of CEO time is spent on activities that involve communication, including speeches, phone calls, conference calls and meetings. A number of papers investigate the language of deceptive executives, providing evidence of differences in verbal discourse. For example, Larcker and Zakolyukina (2012) find that deceptive executives exhibit more references to general knowledge, fewer non-extreme positive emotions, and fewer references to shareholder value. The psychology literature also supports the role played by verbal cues in predicting deception. DePaulo et al. (1983) find that

liars provide both verbal and visual cues to their deception. Interestingly, the lies of the highly motivated senders are less readily detected when only verbal cues are available but more readily detected in conditions that include both verbal and nonverbal cues. Vrij (2000) and Vrij et al. (2004) show that more accurate truth/lie decisions can be made when both speech content and non-verbal behavior are taken into account together instead of individually. Porter et al. (1995) and Porter et al. (1999) find that a combination of verbal and non-verbal cues assists in deception detection.

In an effort to explore the incremental explanatory power of verbal cues, in addition to visual cues, we extract both CEOs' and CFOs' speeches from quarterly earnings conference call transcripts obtained from *Thomson Reuters StreetEvents* to measure verbal cues. Conference call transcripts have been extensively used in existing studies to capture how CEOs' disclosure styles influence investors' perceptions and judgments (Hobson et al. 2012; Kimbrough 2005; Larcker and Zakolyukina 2012). Verbal cues for perceived honesty/humility are measured as the percentage of abstract words used by CEOs and CFOs during these quarterly earnings conference calls, using both the prepared and the question and answer portions of each conference call. We use the question and answer (Q&A) portion of the call, in addition to the prepared portion, as the Q&A portion provides us with insight into unedited attitudes and feelings about the topics directly from the speaker.

For each CEO/CFO, we take the average of the scores from the four quarterly conference calls as the proxy for honesty/humility for each year. We use the list of "abstract" words included in the General Inquirer Harvard IV-4 dictionary. The use of this specific list of abstract words is consistent with the findings from Larcker and Zakolyukina (2012) who show that

deceptive CEOs and CFOs use more references to “general knowledge”. It is also consistent with results from Pan et al. (2018), who find that corporate leaders’ use of “concrete” language is positively associated with investor reaction because concrete language can enhance the confidence investors have in them. *VERBAL* is calculated as $1 - \text{the normalized value of the score}$, such that higher positive values indicate more perceived honesty.

The correlation between *CFOVISUAL* and *CFOVERBAL* is 5.91% while the correlation between *CEOVISUAL* and *CEOVERBAL* is 10.57%. These statistically significant but relatively small correlations indicate the two measures are likely to complement one another in measuring perceived honesty/humility. The correlation between *CFOVERBAL* and *CEOVERBAL* is 33.86% and significant at the 1% level. This relatively high correlation indicates some level of coordination between the CFO and CEO as they prepare to discuss and answer questions related to quarterly earnings.

Table 7 reports the OLS regression results of accruals management and real earnings management measures on CFOs with matching levels of visual and verbal cues (Panel A) and CEOs with matching levels of visual and verbal cues (Panel B). The first column reports results analogous to the method used in Model (2), the second column reports results analogous to the method used in Model (3), and the third column reports results analogous to the method used in Model (4).

Looking at the first column of Panel A, the coefficient for $\geq \text{MEDIAN} / \geq \text{MEDIAN}$ is negative and significant as predicted for *DICHEV*, *REMI* and *REM2*. The coefficients for the other subgroups are not statistically significant. This suggests both visual and verbal cues for perceived CFO honesty need to be higher than median to observe lower levels of earnings

management than the reference subgroup ($<MEDIAN/<MEDIAN$). The second column presents results relative to the reference subgroup of CFOs where both visual and verbal cues are in the bottom three quartiles ($BOTTOM3Q/BOTTOM3Q$). The coefficients for $BOTTOM3Q/TOPQ$ and $TOPQ/BOTTOM3Q$ are negative and mostly statistically significant for $DICHEV$, $REM1$, and $REM2$. However, the coefficient for $TOPQ/TOPQ$ is never statistically significant. This seems to support lower levels of earnings management when either visual or verbal cues are in the top quartile. The lack of significance for $TOPQ/TOPQ$ is likely due to the small sample size relative to the reference group.

The third column presents results relative to the reference subgroup of CFOs where both visual and verbal cues are in the top three quartiles ($TOP3Q/TOP3Q$). The coefficients for $BOTTOMQ/TOP3Q$, $TOP3Q/BOTTOMQ$ and $BOTTOMQ/BOTTOMQ$ are positive and mostly statistically significant for $DICHEV$, $REM1$, and $REM2$. This seems to suggest higher levels of earnings management when either visual or verbal cues are in the bottom quartile.

Results are weaker for CEOs (Panel B). The coefficient for $\geq MEDIAN/\geq MEDIAN$ is negative as predicted for $DICHEV$, $REM1$ and $REM2$ and statistically significant for $DICHEV$ and $REM2$. The coefficients for the other subgroups are mostly insignificant. This suggests both visual and verbal cues for perceived CEO honesty need to be higher than median to observe lower levels of earnings management than the reference subgroup ($<MEDIAN/<MEDIAN$). The second column presents results relative to the reference subgroup of CEOs where both visual and verbal cues are in the bottom three quartiles ($BOTTOM3Q/BOTTOM3Q$). The coefficients for $BOTTOM3Q/TOPQ$ and $TOPQ/BOTTOM3Q$ are not statistically significant while the

coefficients for *TOPQ/TOPQ* are negative and significant in all instances. This seems to support lower levels of earnings management when both visual and verbal cues are in the top quartile.

The third column presents results relative to the reference subgroup of CEOs where both visual and verbal cues are in the top three quartiles (*TOP3Q/TOP3Q*). The coefficients for *TOP3Q/BOTTOMQ* and *BOTTOMQ/BOTTOMQ* are positive and statistically significant in some instances, providing limited evidence of higher levels of earnings management when either visual or verbal cues are in the bottom quartile.

Taken together, results from Panels A and B suggest visual and verbal cues for perceived CFO and CEO honesty seem to act as complements in explaining financial reporting quality, consistent with prior literature that shows that looking at a combination of verbal and non-verbal cues assist in detecting deception (e.g. Porter et al. 1995; Porter et al. 2001).

Earnings Response Coefficients

A long line of literature in accounting looks at the determinants of market reaction to unexpected accounting earnings. Earnings persistence, earnings quality, growth opportunities and similar investor expectations are associated positively with earnings response coefficients while beta and leverage show a negative association. In the context of perceived honesty and humility, we conjecture that the market will react more strongly to earnings from those firms managed by CEOs and CFOs with higher perceived honesty. This conjecture is consistent with our findings that more honest CEOs and CFOs engage in less earnings management than their less honest counterparts; hence, these more credible earnings results will likely correspond to a stronger stock market response. Consistent with prior literature, we explore the relationship between stock market response and unexpected earnings by regressing cumulative abnormal

returns (*CAR*) on standardized unexpected earnings (*SUE*) with the regression coefficient on *SUE* interpreted as the earnings response coefficient. *CAR* is calculated as the abnormal stock returns (raw returns less expected returns using the CAPM model) for the period one day prior to one day subsequent to the earnings release (-1,+1). *SUE* is calculated as the difference between the actual earnings and median analyst forecasts, divided by the standard deviation of unexpected earnings using median analyst forecasts over the past eight quarters.

Table 8 presents the regression results, where perceived honesty/humility is partitioned above/below median. $SUE^{*}<MEDIAN$ represents the average impact of *SUE* for those observations where perceived honesty/humility is below median. $SUE^{*}\geq MEDIAN$ represents the average impact of *SUE* for those observations where perceived honesty/humility is above or equal to median. The market reaction to unexpected earnings is stronger for almost all analyses when perceived honesty/humility is above or equal to median; including CFO visual, CFO verbal, CEO verbal, CFO visual/verbal, CEO visual/verbal, CFO/CEO visual and CFO/CEO verbal. The only exception is for CEO visual, where the market response is stronger for CEOs perceived to be less honest.

Signed versus Unsigned Earnings Management Measures

We use unsigned (absolute) values for both discretionary and real earnings management measures in our main analyses. As a robustness test, we rerun all regressions using signed values for all accruals and real earnings management measures. On balance, we expect that CEOs and CFOs perceived to be less honest will engage in both accruals and real earnings management activities that increase reported net income. Our results are broadly consistent with expectations. More specifically, for the CFO, earnings management is decreasing in perceived

honesty/humility (both visually and verbally). For the CEO, earnings management is decreasing in perceived honesty/humility (verbally but not visually). Turning to visual/verbal interaction, the negative relationship between perceived honesty/humility and earnings management is more pronounced when the visual and verbal cues are consistent (i.e. both strong or both weak). These findings are consistent for both the CEO and CFO subsets. Finally, looking at CEO/CFO interaction, there is a stronger negative relationship between perceived honesty/humility and earnings management when the CEO and CFO are similar with respect to perceived honesty/humility.

Residuals as Dependent Variables

A recent paper by Chen et al. (2018) explores a potential bias when researchers use OLS to decompose a dependent variable into its predicted and residual components and use the residuals as the dependent variable in the second regression. More specifically, the authors find that the standard implementation of this procedure results in biased coefficients and standard errors that can lead to incorrect inferences.

We use residuals as the dependent variable in the majority of our regressions, including the performance-matched modified Jones model, the Dechow-Dichev model, abnormal cash flows, abnormal expenses and abnormal production expenses. As such, our results are potentially sensitive to this critique. We re-run all of our models, regressing the residual from the first-step regression on the combination of all second-stage and first-stage regressors. This is consistent with Chen et al. (2018), who state that this alternative two-step procedure generates unbiased estimates of the coefficient of interest, identical to those obtained from a single step

procedure. Results (untabulated) for all accrual and real earnings management measures remain unchanged.

Perceived Honesty/Humility Validity Check

The observed link between visual perceptions of honesty and proclivity for earnings management is potentially contentious. We cannot get sample CEOs and CFOs to complete the personality survey (noted in Appendix C) and compare these scores with the scores obtained from MTurk workers completing the same survey from an observer perspective by looking at the CEO/CFO photo (noted in Appendix B). Therefore, in an effort to further validate our measure of perceived visual honesty, we ask a sample of colleagues, friends, and family members to complete the personality test (noted in Appendix C) as well as provide a personal photo. Our final sample consists of 89 individuals who are willing to both provide a photo as well as complete the self-assessment.

We use MTurk workers to rate the perceived honesty of each photo by answering the 10 questions noted in Appendix B. On average, each photo is rated by 35 individuals, with the average score taken as the proxy for perceived honesty. Next, the photo score is compared with the self-assessment score for each colleague/friend/family member. The correlation between third-party perception and personal self-assessment is statistically significant at +0.35. In psychology/sociology research, correlations of between about -0.20 and +0.20 are considered small, correlations between -0.20 and -0.40 and between 0.20 and 0.40 are considered moderate in size, and correlations beyond -0.40 or beyond +0.40 are considered large (Ashton, 2013). As such, the observed correlation of +0.35 provides support for our assertion that perceived honesty is a meaningful and validated proxy.

Linkage with Big 5 Personality Traits

Plöckinger et al. (2016) suggest that future accounting research use the Big Five personality traits to explore the relationship between financial reporting choices and managerial idiosyncrasies. Consistent with a working paper by Hrazdil et al. (2018), we use reverse coding and compute a risk tolerance index based on the sum of the Big 5 personality traits as follows: openness to experience + (100 – conscientiousness) + extraversion + (100 – agreeableness) + (100 – emotionality) / 5. Each of the Big 5 personality traits is calculated in a similar manner to that noted above for honesty/humility; the only difference being that for each Big 5 personality dimension, there is a series of 10 distinct questions which are adapted from the HEXACO-PI-R self-report form available at <http://hexaco.org/hexaco-inventory> (Lee and Ashton, 2018).

The Pearson correlation between the risk-taking and honesty/humility measures is -0.22 for CFOs and -0.23 for CEOs. This negative correlation is consistent with expectations; namely, more honest individuals take less aggressive actions. We re-run all regressions from Table 5, using this new risk-taking measure in place of the current visual cue for perceived honesty. The risk-taking measure for CFOs is only positive and significant for *DICHEV* while it is only positive and significant for *ABACC* for CEOs. Including both the risk-taking and perceived honesty measures in the regressions from Table 5 does not alter the sign or the significance of the results. Overall, this suggests the Big 5 personality dimensions have a minimal ability to help explain the propensity for a CEO and/or CFO to engage in accrual-based or real earnings management.

Alternative Verbal Proxies

There has been a plethora of research on textual analysis in the past 20 years. Some of the pioneers in the field, in laboratory settings, find that liars: (1) use more negative emotion words, revealing feelings of guilt; (2) use more tentative words, avoiding commitment to the lie; (3) use fewer exclusive words, in an effort to avoid verbal complexity; and (3) use fewer first-person pronouns, in an effort to avoid accepting responsibility (Newman et al., 2003; Zhou et al., 2004).

In an effort to supplement the use of “abstract” words as a proxy for verbal honesty/humility, we use other word dictionaries from Linguistic Inquiry and Word Count (LIWC) program, developed by Pennebaker et al. (2001). These word dictionaries include: (a) negative emotions- which we denote as *NEGEMO*; (b) tentative words – which we denote as *TENTAT*; (c) exclusive words – which we denote as *EXCL*; and (d) first-person pronouns – which we denote as *MI*. The word genomes for each of these dictionaries, while not listed here, are provided to one of the authors by Pennebaker. We re-run our analyses from Table 5 using each of *NEGEMO*, *TENTAT*, *EXCL*, and *MI* independently, as well as all together with *VERBAL*.

Findings are broadly consistent with expectations. Increased levels of *TENTAT* are associated with higher levels of earnings management while increased levels of *EXCL* are associated with lower levels of earnings management. Increased levels of *NEGEMO* are associated with lower levels of earnings management while increased levels of *MI* are associated with higher levels of earnings management. When all four word dictionaries, in addition to *VERBAL*, are included simultaneously in the models, *VERBAL*, *NEGEMO* and *MI* are

consistently statistically significant. *TENTAT* and *EXCL* are statistically significant in a smaller subset of regression analyses.

5. Conclusion

Using human rater scores to proxy for the perceived honesty of CEOs and CFOs at some of the largest public companies in America, and controlling for considerations such as incentives, opportunities, and a range of control variables, we find that facial cues have significant power in explaining a company's propensity to engage in both real and accrual-based earnings management. These observed honesty cues are incrementally informative to that provided by textual analysis of quarterly earnings conference calls.

Our findings are broadly consistent with those from a number of recent studies; namely, that both the CEO and the CFO influence important firm outcomes i.e. financial performance, fraud, investment decisions, etc. However, we make a number of important contributions to the literature.

First, and most importantly, we show that visual cues are important determinants of a firm's propensity to engage in earnings management. While other studies have looked at verbal cues, there is only one other working paper to date (Choudhury et al. 2018), to our knowledge, who has explored both dimensions simultaneously. With a simple and clean setting, we show that verbal and visual cues are complementary in revealing a person's honesty and in so doing, a firm's earnings management practices. As visual cues are easy to obtain i.e. CEO and CFO faces are readily available on the Internet, they provide a quick and efficient way for shareholders and other stakeholders to assess the quality of a firm's management team.

Second, through the validation of our visual proxies using a sample of colleagues, friends, and family members, we are able to support our assertion that facial honesty scores are

rooted in an individual's personality. These findings lend support to only a handful of studies to date which have explored the informativeness of facial cues.

Third, through the use of both accrual based and real earnings management proxies, we are able to address the recent call in the accounting literature to explore the characteristics of those firms which may commit fraud or financial reporting misconduct without detection.

Lastly, we perform a number of additional analyses to ensure that our results are robust to a number of alternative model specifications. More specifically, we show that: (1) honesty/humility is distinct from the Big 5 personality traits; (2) our results are robust to a number of verbal proxies for honesty/humility; and (3) our results generalize to signed earnings management measures in addition to unsigned earnings management proxies.

Future research could examine whether the relationship between visual honesty cues and earnings management apply in a similar way to senior management teams in other countries. Another interesting extension would be to focus on private companies in those countries where financial statements are readily available. Without the incentive to engage in earnings management due to the absence of income and share price targets, it would be interesting to see whether perceived honesty has any impact on financial statement recognition/measurement practices.

Given recent advances in machine learning and artificial intelligence, it would be interesting to see how and whether more sophisticated tools (i.e. supervised/unsupervised learning) provide insights over and beyond those obtained through more traditional methods. Given the plethora of previous research studies on textual analysis and the emerging research on facial appearance, it is safe to say there are more interesting topics yet to be explored.

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APPENDIX A
Variable Definitions

<p><i>ABACC</i></p>	<p>Absolute value of the estimated residuals from the following industry-year regression (with at least 15 observations) using the Dechow, Sloan and Sweeney (1995) and Kothari, Leone and Wasley (2005) equations;</p> $\frac{TotalAccruals_t}{Assets_{t-1}} = \alpha_1 \left(\frac{1}{Assets_{t-1}} \right) + \frac{\beta_1(\Delta S_t - \Delta AR_t)}{Assets_{t-1}} + \beta_2 \left(\frac{PPE_{t-1}}{Assets_{t-1}} \right) + \beta_3 ROA_{t-1} + \epsilon_t$ <p>where <i>TotalAccruals</i> equals net income before extraordinary items minus operating cash flows, ΔS is change in sales revenue, ΔAR is change in accounts receivables, <i>PPE</i> is net property, plant and equipment, <i>ROA</i> is return on assets, and $Assets_{t-1}$ are lagged total assets. Higher values indicate more accruals management (lower quality earnings).</p>
<p><i>DICHEV</i></p>	<p>Absolute value of the estimated residuals from the following industry-year regression (with at least 15 observations) using the Dechow-Dichev (2002) equation;</p> $WC = \alpha_0 + \beta_1 CFO_{t-1} + \beta_2 CFO_t + \beta_3 CFO_{t+1} + \epsilon_t$ <p>where <i>WC</i> is working capital accruals; and CFO_{t-1}, CFO_t, and CFO_{t+1} are past, current, and future cash flows from operations, respectively. Higher values indicate more accruals management (lower quality earnings).</p>
<p><i>ABCFO</i></p>	<p>Absolute value of the estimated residuals from the following industry-year regression (with at least 15 observations) using the Roychowdhury (2006) and Zang (2012) equation;</p> $\frac{CFO_t}{A_{t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{t-1}} \right) + \alpha_2 \left(\frac{S_t}{A_{t-1}} \right) + \alpha_3 \left(\frac{\Delta S_t}{A_{t-1}} \right) + \epsilon_t$ <p>where CFO_t is cash flows from operations, <i>A</i> is total assets and <i>S</i> is net sales. Higher values indicate greater amounts of sales manipulation to manage reported earnings.</p>
<p><i>ABEXP</i></p>	<p>Absolute value of the estimated residuals from the following industry-year regression (with at least 15 observations) using the Roychowdhury (2006) and Zang (2012) equation;</p> $\frac{DISX_t}{A_{t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{t-1}} \right) + \alpha_2 \left(\frac{S_{t-1}}{A_{t-1}} \right) + \epsilon_t$ <p>where <i>DISX</i> is the sum of advertising, research and development and SGA expenses ($XAD + XRD + XSGA$), <i>A</i> is total assets, and <i>S</i> is sales. Higher values indicate greater fluctuations in discretionary expenses to manage reported earnings.</p>

APPENDIX A (continued)
Variable Definitions

<i>ABPROD</i>	Absolute value of the estimated residuals from the following industry-year regression (with at least 15 observations) using the Roychowdhury (2006) and Zang (2012) equation; $\frac{PROD_t}{A_{t-1}} = \alpha_0 + \alpha_1\left(\frac{1}{A_{t-1}}\right) + \alpha_2\left(\frac{S_t}{A_{t-1}}\right) + \alpha_3\left(\frac{\Delta S_t}{A_{t-1}}\right) + \alpha_4\left(\frac{\Delta S_{t-1}}{A_{t-1}}\right) + \epsilon_t$ where <i>PROD</i> is cost of goods plus change in inventory, <i>A</i> is total assets, <i>S</i> is sales, ΔS is change in sales revenue. Higher values indicate higher amounts of under- or overproduction to manage COGS and reported earnings.
<i>REM1</i>	<i>ABEXP</i> + <i>ABPROD</i>
<i>REM2</i>	<i>ABCFO</i> + <i>ABEXP</i>
<i>CFOVISUAL</i>	Normalized mean honesty score (between 0 and 1) for each CEO picture calculated from reliable raters' scores.
<i>CEOVISUAL</i>	Normalized mean honesty score (between 0 and 1) for each CEO picture calculated from reliable raters' scores.
<i>CFOVERBAL</i>	1 – the normalized average percentage of abstract words used by CFO during the four quarterly earnings conference calls for each year, using both the prepared and the question and answer portions of each conference call.
<i>CEOVERBAL</i>	1 – the normalized average percentage of abstract words used by CEO during the four quarterly earnings conference calls for each year, using both the prepared and the question and answer portions of each conference call.
<i>CFOSTCKCOMP</i>	Ratio of CFO equity-based pay to total annual compensation.
<i>CFOBONUS</i>	Ratio of CFO bonus-based pay to total annual compensation.
<i>CEOSTCKCOMP</i>	Ratio of CEO equity-based pay to total annual compensation.
<i>CEOBONUS</i>	Ratio of CEO bonus-based pay to total annual compensation.
<i>AVERBONUS</i>	Simple average of <i>CEOBONUS</i> and <i>CFOBONUS</i> .
<i>AVERSTCKCOMP</i>	Simple average of <i>CEOSTCKCOMP</i> and <i>CFOSTCKCOMP</i> .
<i>LOSS</i>	Indicator variable equal to 1 if net income is negative, and 0 otherwise.
<i>LEVERAGE</i>	Ratio of total debt (<i>DLC</i> + <i>DLTT</i>) to total assets (<i>AT</i>).
<i>SECTION302</i>	Indicator variable equal to 1 if the company reports internal control deficiencies under SOX Section 302, and 0 otherwise.
<i>PERCAUDITFEES</i>	Ratio of audit and audit-related fees to total fees.
<i>SIZE</i>	Natural logarithm of total assets.
<i>MTB</i>	Ratio of the market value of common shares at the end of the fiscal year (<i>PRCC_F*CHSO</i>) to the book value of common shares (<i>CEQ</i>).
<i>ROA</i>	Ratio of income before extraordinary items (<i>IB</i>) to beginning of period total assets (<i>AT</i>).
<i>CFOGENDER</i>	Indicator variable equal to 1 if the CFO is a male, and 0 otherwise.
<i>CEOGENDER</i>	Indicator variable equal to 1 if the CEO is a male, and 0 otherwise.

APPENDIX B
Honesty/Humility Observer Report Form

Question #	Question
1	He/she wouldn't use flattery to get a raise or promotion at work, even if he/she thought it would succeed.
2	If he/she knew that he/she could never get caught, he/she would be willing to steal a million dollars. (reverse coded)
3	Having a lot of money is not especially important to him/her.
4	He/she thinks that he/she is entitled to more respect than the average person is. (reverse coded)
5	If he/she wants something from someone, he/she will laugh at that person's worst jokes. (reverse coded)
6	He/she would never accept a bribe, even if it were very large.
7	He/she would get a lot of pleasure from owning expensive luxury goods. (reverse coded)
8	He/she wants people to know that he/she is an important person of high status. (reverse coded)
9	He/she wouldn't pretend to like someone just to get that person to do favours for him/her.
10	He/she'd be tempted to use counterfeit money, if he/she were sure he/she could get away with it. (reverse coded)

APPENDIX C
Honesty/Humility Self Report Form

Question #	Question
1	I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed.
2	If I knew that I could never get caught, I would be willing to steal a million dollars. (reverse coded)
3	Having a lot of money is not especially important to me.
4	I think that I am entitled to more respect than the average person is. (reverse coded)
5	If I want something from someone, I will laugh at that person's worst jokes. (reverse coded)
6	I would never accept a bribe, even if it were very large.
7	I would get a lot of pleasure from owning expensive luxury goods. (reverse coded)
8	I want people to know that I am an important person of high status. (reverse coded)
9	I wouldn't pretend to like someone just to get that person to do favours for me.
10	I would be tempted to use counterfeit money, if I were sure I could get away with it. (reverse coded)

TABLE 1
Descriptive Statistics

This table reports descriptive statistics for the variables included in the regression models. Variable definitions are provided in Appendix A.

Variable	N	Mean	Median	Minimum	Maximum	Standard deviation
<i>ABACC</i>	881	0.0978	0.0555	0.0004	0.5679	0.1097
<i>DICHEV</i>	911	0.0808	0.0398	0.0003	0.5034	0.0969
<i>REM1</i>	867	0.3833	0.2989	0.0012	1.6749	0.3414
<i>REM2</i>	887	0.4193	0.2879	0.0028	2.1774	0.4237
<i>CFOVISUAL</i>	950	0.4930	0.4963	0.0000	1.0000	0.1941
<i>CFOVERBAL</i>	950	0.5474	0.5571	0.0000	1.0000	0.2072
<i>CEOVISUAL</i>	950	0.4723	0.4712	0.0000	1.0000	0.2208
<i>CEOVERBAL</i>	950	0.5481	0.5676	0.0000	1.0000	0.2119
<i>CFOSTCKCOMP</i>	947	0.7396	0.7663	0.0000	0.9909	0.1314
<i>CFOBONUS</i>	946	0.0296	0.0000	0.0000	0.7875	0.0893
<i>CEOSTCKCOMP</i>	948	0.8159	0.8489	0.0000	0.9865	0.1324
<i>CEOBONUS</i>	949	0.0227	0.0000	0.0000	0.4957	0.0752
<i>AVERSTCKCOMP</i>	946	0.7776	0.8056	0.0000	0.9826	0.1181
<i>AVERBONUS</i>	946	0.0261	0.0000	0.0000	0.5307	0.0766
<i>LOSS</i>	949	0.0527	0.0000	0.0000	1.0000	0.2235
<i>LEVERAGE</i>	913	0.2459	0.2209	0.0000	0.8920	0.1604
<i>SECTION302</i>	845	0.1195	0.0000	0.0000	1.0000	0.3246
<i>PERCAUDITFEES</i>	853	0.8795	0.9122	0.0909	1.0000	0.1196
<i>SIZE</i>	918	9.8102	9.6535	7.1695	12.5561	1.2341
<i>MTB</i>	918	1.8295	1.5309	0.7931	8.4102	0.9799
<i>ROA</i>	918	0.0620	0.0534	-0.2958	0.3343	0.0562
<i>CFOGENDER</i>	950	0.8874	1.0000	0.0000	1.0000	0.3163
<i>CEOGENDER</i>	948	0.9641	1.0000	0.0000	1.0000	0.1861

TABLE 2
Correlations

This table reports pairwise correlations between variables of interest. p-values are shown in brackets. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

	<i>CFOVISUAL</i>	<i>CEOVISUAL</i>	<i>ABACC</i>	<i>DICHEV</i>	<i>REM1</i>	<i>REM2</i>
<i>CFOVISUAL</i>	1.0000					
<i>CEOVISUAL</i>	0.0771** (0.018)	1.0000				
<i>ABACC</i>	-0.0552 (0.101)	-0.0052 (0.878)	1.0000			
<i>DICHEV</i>	-0.0897*** (0.007)	0.0135 (0.684)	0.3539*** (0.000)	1.0000		
<i>REM1</i>	-0.0779** (0.021)	-0.0087 (0.798)	0.5619*** (0.000)	0.5021*** (0.000)	1.0000	
<i>REM2</i>	-0.0820** (0.015)	0.0129 (0.702)	0.5724*** (0.000)	0.5560*** (0.000)	0.9386*** (0.000)	1.0000

TABLE 3
Frequency Tables

This table presents frequency tables for CFO visual and verbal cues (Panel A); CEO visual and verbal cues (Panel B); CFO and CEO visual cues (Panel C) and CFO and CEO verbal cues (Panel D). Variables are defined in Appendix A. The relationship between the visual and verbal classification factors is tested with a Chi-2 test. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

Panel A: CFO VISUAL/VERBAL			
<i>CFOVISUAL</i>	<i>CFOVERBAL</i>		TOTAL
	<MEDIAN	>=MEDIAN	
<MEDIAN	260	215	475
>=MEDIAN	214	261	475
TOTAL	474	476	950
PEARSON CHI-2	8.9095***		
Panel B: CEO VISUAL/VERBAL			
<i>CEOVISUAL</i>	<i>CEOVERBAL</i>		TOTAL
	< MEDIAN	>= MEDIAN	
<MEDIAN	250	224	474
>=MEDIAN	224	252	476
TOTAL	474	476	950
PEARSON CHI-2	3.0690*		
Panel C: CFO/CEO VISUAL			
<i>CFOVISUAL</i>	<i>CEOVISUAL</i>		TOTAL
	<MEDIAN	>=MEDIAN	
<MEDIAN	263	212	475
>=MEDIAN	211	264	475
TOTAL	474	476	950
PEARSON CHI-2	11.3853***		
Panel D: CFO/CEO VERBAL			
<i>CFOVERBAL</i>	<i>CEOVERBAL</i>		TOTAL
	<MEDIAN	>=MEDIAN	
<MEDIAN	285	189	474
>=MEDIAN	189	287	476
TOTAL	474	476	950
PEARSON CHI-2	39.6155***		

TABLE 4
Differences in Means

This table compares mean values for real earnings management and accruals management measures across subgroups of sample firms. Panels A and B compare mean values for subgroups based on the values of the visual cues for CFOs and CEOs respectively. Panel C compares mean values for subgroups of CFOs and CEOs with matching levels of visual cues. Variables are defined in Appendix A. Results are based on one-tailed t-tests of differences in means. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

Panel A: CFOVISUAL								
		Bottom quartile (BQ)	Bottom 3 quartiles (B3Q)	Top 3 quartiles (T3Q)	Top quartile (TQ)	Diff. (BQ – T3Q)	Diff. (B3Q – TQ)	Diff. (BQ – TQ)
<i>ABACC</i>	+	0.0973	0.1021	0.0980	0.0856	-0.0007	0.0165**	0.0117
<i>DICHEV</i>	+	0.0942	0.0859	0.0765	0.0655	0.0177***	0.0204***	0.0287***
<i>REM1</i>	+	0.4151	0.4006	0.3740	0.3314	0.0411*	0.0692***	0.0837***
<i>REM2</i>	+	0.4626	0.4394	0.4066	0.3604	0.0560*	0.0789***	0.1022***

Panel B: CEOVISUAL								
		Bottom quartile (BQ)	Bottom 3 quartiles (B3Q)	Top 3 quartiles (T3Q)	Top quartile (TQ)	Diff. (BQ – T3Q)	Diff. (B3Q – TQ)	Diff. (BQ – TQ)
<i>ABACC</i>	+	0.0994	0.0986	0.0973	0.0956	0.0020	0.0030	0.0038
<i>DICHEV</i>	+	0.0908	0.0802	0.0773	0.0824	0.0136**	-0.0021	0.0085
<i>REM1</i>	+	0.4018	0.3865	0.3769	0.3735	0.0249	0.0130	0.0283
<i>REM2</i>	+	0.4217	0.4210	0.4184	0.4139	0.0033	0.0071	0.0078

TABLE 4 - continued
Differences in Means

This table compares mean values for real earnings management and accruals management measures across subgroups of sample firms. Panels A and B compare mean values for subgroups based on the values of the visual cues for CFOs and CEOs respectively. Panel C compares mean values for subgroups of CFOs and CEOs with matching levels of visual cues. Variables are defined in Appendix A. Results are based on one-tailed t-tests of differences in means. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

Panel C: CFO/CEO VISUAL MATCHING										
		MEDIAN			QUARTILES					
		Lower Lower	Higher Higher	Diff.	BQ/BQ = 1	BQ/BQ = 0	Diff.	TQ/TQ = 0	TQ/TQ = 1	Diff.
<i>ABACC</i>	+	0.0961	0.0959	0.0002	0.0946	0.0981	-0.0035	0.0988	0.0817	0.0171
<i>DICHEV</i>	+	0.0867	0.0788	0.0079	0.1042	0.0788	0.0254**	0.0818	0.0615	0.0203*
<i>REM1</i>	+	0.3589	0.3563	0.0026	0.4100	0.3812	0.0288	0.3892	0.2807	0.1084**
<i>REM2</i>	+	0.3940	0.3803	0.0137	0.4208	0.3998	0.0210	0.4270	0.2843	0.1427**

TABLE 5
Visual Cues for Perceived Honesty and Earnings Management

This table reports the OLS regression results of earnings management measures on visual cues. Results for CFOs are presented in Panel A and results for CEOs are presented in Panel B. Variable definitions are provided in Appendix A. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively. Incremental R-squared represents the increase in explanatory power compared with a baseline model not including CFO (CEO) visual.

Panel A: CFO				
VARIABLE	H ₁			
	<i>ABACC</i>	<i>DICHEV</i>	<i>REMI</i>	<i>REM2</i>
ATTITUDE/RATIONALIZATION				
<i>CFO VISUAL</i>	-0.030 (0.104)	-0.049*** (0.003)	-0.166*** (0.005)	-0.222*** (0.004)
INCENTIVES				
<i>CFOSTOCK COMP</i>	0.069** (0.022)	0.051 (0.110)	0.248*** (0.008)	0.294*** (0.009)
<i>CFOBONUS</i>	0.114** (0.032)	0.043 (0.351)	-0.041 (0.719)	0.017 (0.911)
<i>LOSS</i>	-0.001 (0.944)	0.055*** (0.001)	0.075 (0.127)	0.099* (0.072)
<i>LEVERAGE</i>	0.061** (0.023)	0.028 (0.205)	-0.097 (0.143)	-0.003 (0.972)
OPPORTUNITIES				
<i>SECTION 302</i>	0.012 (0.290)	0.017 (0.157)	0.123*** (0.002)	0.126** (0.014)
<i>PERCAUDITFEES</i>	-0.076** (0.028)	-0.013 (0.624)	-0.119 (0.248)	-0.137 (0.311)
CONTROL				
<i>SIZE</i>	0.002 (0.460)	0.004 (0.305)	-0.006 (0.601)	-0.007 (0.624)
<i>MTB</i>	0.023*** (0.001)	0.017*** (0.005)	0.059*** (0.009)	0.046* (0.098)
<i>ROA</i>	0.122 (0.256)	0.427*** (0.000)	1.437*** (0.000)	2.123*** (0.000)
<i>CFO GENDER</i>	0.002 (0.841)	0.010 (0.340)	0.039 (0.233)	0.020 (0.625)
Observations	803	800	764	783
R-squared	8.9%	12.4%	17.4%	16.0%
Incremental R-squared	0.28%	0.89%	0.79%	0.94%

TABLE 5 – continued
 Visual Cues for Perceived Honesty and Earnings Management

This table reports the OLS regression results of earnings management measures on visual cues. Results for CFOs are presented in Panel A and results for CEOs are presented in Panel B. Variable definitions are provided in Appendix A. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively. Incremental R-squared represents the increase in explanatory power compared with a baseline model not including CFO (CEO) visual.

Panel B: CEO				
VARIABLE	H ₁			
	<i>ABACC</i>	<i>DICHEV</i>	<i>REMI</i>	<i>REM2</i>
ATTITUDE/RATIONALIZATION				
<i>CEO VISUAL</i>	-0.024 (0.125)	0.002 (0.896)	-0.068 (0.179)	-0.055 (0.365)
INCENTIVES				
<i>CEOSTOCK COMP</i>	0.049** (0.031)	0.006 (0.830)	0.112 (0.134)	0.186** (0.027)
<i>CEOBONUS</i>	0.140** (0.022)	-0.015 (0.775)	-0.148 (0.263)	-0.095 (0.558)
<i>LOSS</i>	0.000 (0.999)	0.053*** (0.001)	0.068 (0.142)	0.102* (0.062)
<i>LEVERAGE</i>	0.049* (0.067)	0.024 (0.288)	-0.120* (0.062)	-0.030 (0.714)
OPPORTUNITIES				
<i>SECTION 302</i>	0.010 (0.353)	0.014 (0.220)	0.116*** (0.004)	0.119** (0.022)
<i>PERCAUDITFEES</i>	-0.087** (0.012)	-0.025 (0.331)	-0.191* (0.059)	-0.212 (0.110)
CONTROL				
<i>SIZE</i>	0.003 (0.415)	0.005 (0.158)	-0.002 (0.869)	-0.002 (0.889)
<i>MTB</i>	0.022*** (0.001)	0.017*** (0.008)	0.057** (0.012)	0.042 (0.128)
<i>ROA</i>	0.131 (0.223)	0.445*** (0.000)	1.550*** (0.000)	2.266*** (0.000)
<i>CEO GENDER</i>	-0.072*** (0.005)	-0.026 (0.154)	-0.238*** (0.003)	-0.244** (0.019)
Observations	773	802	766	785
R-squared	10.1%	11.3%	17.8%	15.9%
Incremental R-squared	0.23%	0.00%	0.20%	0.08%

TABLE 6

Interaction between CFO and CEO Visual Cues

This table reports the OLS regression results of earnings management measures on CFOs and CEOs with matching levels of visual cues. Variable definitions are provided in Appendix A. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

VARIABLE	H ₂					
	ABACC			DICHEV		
ATTITUDE/RATIONALIZATION						
<i>BASELINE:</i>	<i><MEDIAN CFO <MEDIAN CEO</i>	<i>BOTTOM 3Q CFO BOTTOM 3Q CEO</i>	<i>TOP 3Q CFO TOP 3Q CEO</i>	<i><MEDIAN CFO <MEDIAN CEO</i>	<i>BOTTOM 3Q CFO BOTTOM 3Q CEO</i>	<i>TOP 3Q CFO TOP 3Q CEO</i>
<i><MEDIAN CFO >=MEDIAN CEO</i>	-0.006 (0.601)			-0.007 (0.476)		
<i>>=MEDIAN CFO <MEDIAN CEO</i>	0.006 (0.618)			-0.016* (0.077)		
<i>>=MEDIAN CFO >=MEDIAN CEO</i>	-0.007 (0.500)			-0.017* (0.068)		
<i>BOTTOM 3Q CFO TOP Q CEO</i>		-0.017* (0.089)			-0.001 (0.929)	
<i>TOP Q CFO BOTTOM 3Q CEO</i>		-0.004 (0.713)			-0.013 (0.103)	
<i>TOP Q CFO TOP Q CEO</i>		-0.030** (0.031)			-0.034*** (0.001)	
<i>TOP 3Q CFO BOTTOM Q CEO</i>			0.008 (0.462)			0.008 (0.369)
<i>BOTTOM Q CFO TOP 3Q CEO</i>			0.013 (0.258)			0.027*** (0.008)
<i>BOTTOM Q CFO BOTTOM Q CEO</i>			0.006 (0.658)			0.030** (0.033)
INCENTIVES						
<i>AVERSTKCOMP</i>	0.076** (0.012)	0.076** (0.012)	0.077** (0.011)	0.040 (0.249)	0.035 (0.315)	0.045 (0.196)
<i>AVERBONUS</i>	0.165*** (0.009)	0.167*** (0.008)	0.158** (0.013)	0.028 (0.603)	0.030 (0.586)	0.027 (0.617)
<i>LOSS</i>	0.002 (0.897)	-0.000 (0.982)	0.001 (0.953)	0.057*** (0.001)	0.054*** (0.001)	0.055*** (0.001)
<i>LEVERAGE</i>	0.053* (0.050)	0.050* (0.060)	0.056** (0.040)	0.021 (0.343)	0.023 (0.298)	0.030 (0.171)
OPPORTUNITIES						
<i>SECTION 302</i>	0.011 (0.346)	0.010 (0.373)	0.011 (0.321)	0.017 (0.156)	0.014 (0.236)	0.017 (0.147)
<i>PERCAUDITFEES</i>	-0.087** (0.012)	-0.078** (0.031)	-0.084** (0.014)	-0.022 (0.406)	-0.015 (0.588)	-0.020 (0.449)
CONTROL						
<i>SIZE</i>	0.002 (0.496)	0.002 (0.529)	0.002 (0.450)	0.004 (0.262)	0.004 (0.245)	0.005 (0.186)
<i>MTB</i>	0.022*** (0.002)	0.023*** (0.001)	0.023*** (0.001)	0.017*** (0.008)	0.018*** (0.005)	0.018*** (0.004)
<i>ROA</i>	0.135 (0.212)	0.131 (0.228)	0.132 (0.219)	0.441*** (0.000)	0.432*** (0.000)	0.439*** (0.000)
<i>CFO GENDER</i>	0.009 (0.413)	0.007 (0.517)	0.007 (0.543)	0.013 (0.226)	0.012 (0.279)	0.013 (0.204)
<i>CEO GENDER</i>	-0.070*** (0.006)	-0.070*** (0.006)	-0.069*** (0.007)	-0.029 (0.121)	-0.026 (0.172)	-0.026 (0.145)
Observations	770	770	770	799	799	799
R-squared	10.3%	10.7%	10.3%	12.1%	12.4%	12.9%

TABLE 6 – continued
Interaction between CFO and CEO Visual Cues

This table reports the OLS regression results of earnings management measures on CFOs and CEOs with matching levels of visual cues. Variable definitions are provided in Appendix A. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

VARIABLE	H ₂					
	REM1			REM2		
ATTITUDE/RATIONALIZATION						
<i>BASELINE:</i>	<MEDIAN CFO <MEDIAN CEO	BOTTOM 3Q CFO BOTTOM 3Q CEO	TOP 3Q CFO TOP 3Q CEO	<MEDIAN CFO <MEDIAN CEO	BOTTOM 3Q CFO BOTTOM 3Q CEO	TOP 3Q CFO TOP 3Q CEO
<MEDIAN CFO >=MEDIAN CEO	0.037 (0.303)			0.041 (0.363)		
>=MEDIAN CFO <MEDIAN CEO	0.023 (0.517)			0.024 (0.583)		
>=MEDIAN CFO >=MEDIAN CEO	-0.043 (0.134)			-0.066* (0.066)		
BOTTOM 3Q CFO TOP Q CEO		-0.039 (0.231)			-0.044 (0.285)	
TOP Q CFO BOTTOM 3Q CEO		-0.040 (0.200)			-0.039 (0.304)	
TOP Q CFO TOP Q CEO		-0.134*** (0.000)			-0.178*** (0.000)	
TOP 3Q CFO BOTTOM Q CEO			0.024 (0.447)			0.027 (0.480)
BOTTOM Q CFO TOP 3Q CEO			0.077** (0.028)			0.141*** (0.003)
BOTTOM Q CFO BOTTOM Q CEO			0.071 (0.101)			0.050 (0.349)
INCENTIVES						
<i>AVERSTKCOMP</i>	0.229** (0.013)	0.225** (0.013)	0.254*** (0.007)	0.304*** (0.007)	0.308*** (0.006)	0.343*** (0.003)
<i>AVERBONUS</i>	-0.032 (0.806)	-0.055 (0.680)	-0.048 (0.719)	0.039 (0.813)	0.028 (0.865)	0.039 (0.815)
<i>LOSS</i>	0.083* (0.082)	0.076 (0.112)	0.076* (0.098)	0.112** (0.044)	0.101* (0.068)	0.107** (0.044)
<i>LEVERAGE</i>	-0.117* (0.067)	-0.121* (0.062)	-0.100 (0.126)	-0.025 (0.752)	-0.025 (0.754)	0.003 (0.966)
OPPORTUNITIES						
<i>SECTION 302</i>	0.109*** (0.006)	0.113*** (0.005)	0.120*** (0.002)	0.109** (0.034)	0.112** (0.033)	0.120** (0.017)
<i>PERCAUDITFEES</i>	-0.163 (0.106)	-0.141 (0.174)	-0.155 (0.123)	-0.190 (0.152)	-0.159 (0.244)	-0.173 (0.188)
CONTROL						
<i>SIZE</i>	-0.003 (0.770)	-0.005 (0.653)	-0.003 (0.809)	-0.004 (0.798)	-0.006 (0.662)	-0.002 (0.904)
<i>MTB</i>	0.059*** (0.008)	0.060*** (0.009)	0.060*** (0.008)	0.046 (0.102)	0.048* (0.090)	0.048* (0.083)
<i>ROA</i>	1.504*** (0.000)	1.502*** (0.000)	1.501*** (0.000)	2.204*** (0.000)	2.182*** (0.000)	2.199*** (0.000)
<i>CFO GENDER</i>	0.061* (0.066)	0.050 (0.130)	0.055* (0.081)	0.046 (0.271)	0.036 (0.384)	0.039 (0.320)
<i>CEO GENDER</i>	-0.235*** (0.004)	-0.232*** (0.004)	-0.228*** (0.003)	-0.244** (0.022)	-0.238** (0.021)	-0.224** (0.021)
Observations	763	763	763	782	782	782
R-squared	19.0%	19.1%	19.0%	17.1%	17.2%	17.5%

TABLE 7
Interaction between Visual and Verbal Cues for Honesty

This table reports the OLS regression results of earnings management measures on matched CFOs (CEOs) visual and verbal cues (Panel A) (Panel B). Variable definitions are provided in Appendix A. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively. Incentives/opportunities/control variables are excluded from tables for brevity and are available from the authors upon request.

Panel A: CFO VISUAL/VERBAL									
VARIABLE	DICHEV			REM1			REM2		
ATTITUDE/RATIONALIZATION									
BASELINE:	<MEDIAN VISUAL < MEDIAN VERBAL	BOTTOM 3Q VISUAL BOTTOM 3Q VERBAL	TOP 3Q VISUAL TOP 3Q VERBAL	<MEDIAN VISUAL < MEDIAN VERBAL	BOTTOM 3Q VISUAL BOTTOM 3Q VERBAL	TOP 3Q VISUAL TOP 3Q VERBAL	<MEDIAN VISUAL < MEDIAN VERBAL	BOTTOM 3Q VISUAL BOTTOM 3Q VERBAL	TOP 3Q VISUAL TOP 3Q VERBAL
<MEDIAN VISUAL >= MEDIAN VERBAL	0.004 (0.685)			-0.007 (0.846)			-0.007 (0.879)		
>=MEDIAN VISUAL <MEDIAN VERBAL	0.003 (0.723)			-0.001 (0.976)			0.002 (0.950)		
>=MEDIAN VISUAL >=MEDIAN VERBAL	-0.023** (0.010)			-0.058* (0.066)			-0.084** (0.030)		
BOTTOM 3Q VISUAL TOP Q VERBAL		-0.030*** (0.000)			-0.049 (0.151)			-0.064 (0.133)	
TOP Q VISUAL BOTTOM 3Q VERBAL		-0.030*** (0.000)			-0.067** (0.014)			-0.082** (0.015)	
TOP Q VISUAL TOP Q VERBAL		-0.014 (0.271)			-0.075 (0.107)			-0.082 (0.152)	
TOP 3Q VISUAL BOTTOM Q VERBAL			0.034*** (0.001)			0.078*** (0.009)			0.119*** (0.001)
BOTTOM Q VISUAL TOP 3Q VERBAL			0.036*** (0.000)			0.107*** (0.002)			0.147*** (0.001)
BOTTOM Q VISUAL BOTTOM Q VERBAL			0.029** (0.037)			0.050 (0.342)			0.106* (0.097)
Observations	800	800	800	764	764	764	783	783	783
R-squared	12.9%	13.6%	14.4%	17.2%	17.5%	18.3%	15.9%	15.9%	17.3%

TABLE 7 – continued
Interaction between Visual and Verbal Cues for Honesty

This table reports the OLS regression results of earnings management measures on matched CFOs (CEOs) visual and verbal cues (Panel A) (Panel B). Variable definitions are provided in Appendix A. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively. Incentives/opportunities/control variables are excluded from tables for brevity and are available from the authors upon request.

Panel B: CEO VISUAL/VERBAL									
VARIABLE	<i>DICHEV</i>			<i>REMI</i>			<i>REM2</i>		
ATTITUDE/RATIONALIZATION									
<i>BASELINE:</i>	<i><MEDIAN VISUAL < MEDIAN VERBAL</i>	<i>BOTTOM 3Q VISUAL BOTTOM 3Q VERBAL</i>	<i>TOP 3Q VISUAL TOP 3Q VERBAL</i>	<i><MEDIAN VISUAL < MEDIAN VERBAL</i>	<i>BOTTOM 3Q VISUAL BOTTOM 3Q VERBAL</i>	<i>TOP 3Q VISUAL TOP 3Q VERBAL</i>	<i><MEDIAN VISUAL < MEDIAN VERBAL</i>	<i>BOTTOM 3Q VISUAL BOTTOM 3Q VERBAL</i>	<i>TOP 3Q VISUAL TOP 3Q VERBAL</i>
<i><MEDIAN VISUAL ≥ MEDIAN VERBAL</i>	-0.016* (0.091)			0.011 (0.752)			-0.036 (0.397)		
<i>≥ MEDIAN VISUAL < MEDIAN VERBAL</i>	0.005 (0.626)			0.004 (0.891)			-0.005 (0.899)		
<i>≥ MEDIAN VISUAL ≥ MEDIAN VERBAL</i>	-0.026*** (0.003)			-0.032 (0.307)			-0.085** (0.027)		
<i>BOTTOM 3Q VISUAL TOP Q VERBAL</i>		-0.009 (0.280)			-0.015 (0.643)			-0.038 (0.346)	
<i>TOP Q VISUAL BOTTOM 3Q VERBAL</i>		0.008 (0.450)			-0.037 (0.260)			-0.035 (0.421)	
<i>TOP Q VISUAL TOP Q VERBAL</i>		-0.029*** (0.002)			-0.082** (0.020)			-0.132*** (0.001)	
<i>TOP 3Q VISUAL BOTTOM Q VERBAL</i>			0.030*** (0.002)			0.068** (0.035)			0.105*** (0.009)
<i>BOTTOM Q VISUAL TOP 3Q VERBAL</i>			0.008 (0.350)			0.035 (0.256)			0.015 (0.698)
<i>BOTTOM Q VISUAL BOTTOM Q VERBAL</i>			0.035** (0.018)			0.059 (0.199)			0.083 (0.143)
Observations	802	802	802	766	766	766	785	785	785
R-squared	12.9%	12.3%	13.1%	17.8%	18.2%	18.3%	16.5%	16.7%	16.8%

TABLE 8
Earnings Response Coefficients

This table reports the OLS regression results of cumulative abnormal returns (CARs) on standardized unexpected earnings (SUEs) for honesty/humility scores above/below median. Variable definitions are provided in Appendix A. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

VARIABLE	MEDIAN							
	CFO		CEO		VISUAL/VERBAL		CFO/CEO	
	VISUAL	VERBAL	VISUAL	VERBAL	CFO	CEO	VISUAL	VERBAL
<i>SUE*<MEDIAN HONESTY/HUMILITY</i>	0.003*	0.004*	0.007***	0.003*	0.004**	0.004**	0.004**	0.004**
	(0.062)	(0.053)	(0.000)	(0.057)	(0.038)	(0.037)	(0.040)	(0.041)
<i>SUE*>=MEDIAN HONESTY/HUMILITY</i>	0.008***	0.006***	0.003*	0.007***	0.007***	0.006**	0.008***	0.005***
	(0.000)	(0.000)	(0.065)	(0.000)	(0.000)	(0.013)	(0.000)	(0.000)
<i>LOSS</i>	-0.019***	-0.020***	-0.020***	-0.020***	-0.020***	-0.021***	-0.020***	-0.021***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
<i>SIZE</i>	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
	(0.517)	(0.465)	(0.549)	(0.561)	(0.540)	(0.551)	(0.586)	(0.533)
<i>MTB</i>	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
	(0.214)	(0.122)	(0.127)	(0.136)	(0.154)	(0.143)	(0.205)	(0.142)
Observations	3,077	3,077	3,077	3,077	3,077	3,077	3,077	3,077
R-squared	7.6%	7.2%	7.4%	7.5%	7.2%	7.2%	7.4%	7.1%