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ABSTRACT:
The SEC’s emphasis on the use of plain English in disclosures is designed to make them more readable and more informative. Using an experiment, I find that more readable disclosures lead to stronger reactions from small investors, so that changes in investors’ valuation judgments are more positive when news is good and more negative when news is bad. This result holds even though I investigate a setting where readability does not affect the actual amount of information that investors acquire from a disclosure. Drawing on research in psychology to explain this result, I predict and find that processing fluency from a more readable disclosure acts as a heuristic cue and increases investors’ beliefs that they can rely on the information in the disclosure. Counter to my expectations, I do not find that more readable disclosures directly increase perceptions of management credibility. Finally, I find that investors predict that managers will provide less readable disclosures when news is bad than when news is good, consistent with claims made in prior literature that managers strategically obfuscate bad news. However, investors do not appear to spontaneously consider this possibility unless they are explicitly made aware of the potential for variation in disclosure readability. Additional analysis suggests that the stronger reactions of investors in response to more readable disclosures may be unintentional, consistent with prior research on processing fluency.
I. Introduction

The Securities and Exchange Commission has placed increasing emphasis on providing clear and readable financial disclosures. The Plain English Rule (421(d)), passed in 1998, requires that issuers adhere to plain English principles in the design of firm prospectuses. The rule is accompanied by a *Plain English Handbook* (SEC 1998) that provides both linguistic and formatting suggestions for preparing plain English disclosures and encourages firms to adopt the suggestions in all of their communications (SEC 1998).

Technological advances in computational linguistics have allowed researchers to more easily investigate the impact of plain English rules on disclosure readability, and the impact of readability on investor behavior. Loughran and McDonald (2010) demonstrate that firms’ 10-Ks become more compliant with plain English guidelines following the release of Rule 421(d). Loughran and McDonald (2010) and Miller (2010) both show that more readable 10-Ks are associated with higher trading volume among small investors. However, Miller (2010) finds that the effects of plain English are subsumed by 10-K length. Because these two papers use different measures of readability, different methods of capturing “small investors,” and investigate different time periods, it is difficult to compare their results directly and conclude whether the readability associated with plain English language and formatting affects investors. I use an experiment to hold disclosure length and total information constant, and isolate the effects of disclosure readability on investors’ reactions to both good and bad news. I focus on small investors in my study, both to be consistent with prior archival literature (Miller 2010; Loughran and McDonald 2010) and also because of the SEC’s assertion that clear writing is primarily intended to assist the “least-sophisticated investors” (SEC 1998).

Prior studies also do not make clear *why* readability affects investors. Investor behavior and readability may both be driven by an omitted variable. For example, Li (2008) uses text analysis to show that firms provide longer and less readable disclosures when they report losses and transitory gains than when they report persistent income. Investors may therefore be reacting to firm
performance rather than to disclosure readability. Bloomfield (2008) provides a lengthy list of reasons why disclosure readability may be associated with financial performance; each provides a potential explanation for investor behavior.

Even if investors are responding primarily to readability, archival studies provide little evidence on the mechanism for the response. For example, less readable disclosures may limit investors’ ability or willingness to acquire information (Grossman and Stiglitz 1980; Bloomfield 2002; Hirshleifer and Teoh 2003). I explore an additional possibility, which is that processing fluency from a more readable disclosure increases investors’ beliefs that they can rely on the information in the disclosure. Processing fluency is an individual’s subjective feeling about how easy it is for them to process information. Because individuals assume that feelings experienced while thinking about a target bear on the target itself, positive feelings of processing fluency are treated by individuals as a heuristic cue that information can be relied upon in making related judgments (Shah and Oppenheimer 2007; Hafner and Stapel 2010). My experiment allows me to capture measures of processing fluency and disclosure reliance that are not directly observable in archival data, and to provide some preliminary evidence on the intentionality of investors’ reactions.

Research on processing fluency also suggests that a fluent message can lead to more favorable evaluations of the messenger (Oppenheimer 2006). This implies that more readable disclosures may increase investors’ perceptions of management credibility, regardless of whether a disclosure conveys good or bad news. My experiment allows me to isolate judgments about the manager from judgments about the firm, and to tie my research to the larger literature in accounting on the determinants of management credibility.

Finally, archival studies provide little evidence on investors’ perceptions of managers’ strategic choice of disclosure readability. Li (2008) suggests that managers intentionally increase disclosure complexity when performance is poor, in order to obfuscate information and mitigate the market’s reaction. The use of an experiment allows me to make salient the potential for variation in
disclosure readability, in order to investigate whether investors believe that managers are likely to engage in strategic obfuscation of bad news.

In Stage 1 of my experiment I present 234 participants with background information on a fictitious soft drink company and ask them to provide initial valuation judgments. Participants then receive a press release about the financial performance of the firm. Between-subjects manipulations alter the readability of the press release and whether the press release presents good or bad news. For the manipulation of readability, I vary characteristics of the press release so that they violate (less readable condition) or conform to (more readable condition) linguistic and formatting suggestions outlined in the SEC’s Plain English Handbook (SEC 1998). After reading the release, participants provide a revised judgment on the appropriate valuation of the firm. Participants also provide judgments about the extent to which they believe that they can rely on the information in the disclosure, their feelings about processing fluency, and their perceptions of management credibility. The difference between the revised and initial valuation judgments serves as a measure of the strength of investors’ reactions to the press release containing my manipulations.

As predicted by theories of processing fluency, I find that more readable disclosures lead to stronger reactions from participants. Changes in participants’ valuation judgments in response to a more readable disclosure are more positive when news is good and more negative when news is bad. These results arise despite the fact that, in my setting, variation in readability does not lead to detectable differences in the number of recall questions that participants answer correctly about the information in the press release. This suggests that my results are not driven by differences in the amount of information that participants acquire. Instead, greater readability increases participants’ reliance on the information in the press release. Mediation analysis confirms that participants’ reliance on the release is driven by increased processing fluency (i.e. participants’ personal feelings about disclosure readability, or processing ease). I do not find that more readable press releases directly increase participants’ judgments about the credibility of management.
Stage 2 of my experiment is designed to investigate investors’ perceptions of managers’ strategic choices of disclosure readability. In Stage 2, I present participants with the press release that they were initially shown, as well as an additional press release from the other readability condition (still containing only good or bad news). The press releases are presented side-by-side to facilitate their comparison. Providing access to press releases at both levels of readability makes salient the fact that managers have a choice when it comes to disclosure readability. I ask participants which version of the press release they believe management would be more likely to provide, given the firm’s performance. Participants predict that managers will provide a more readable disclosure in the good news condition than in the bad news condition.

Stage 2 of my experiment also asks participants to provide new valuation and credibility judgments for the firm, similar to those that were made in Stage 1. Analysis of Stage 2 valuation judgments shows that participants who received more readable disclosures in Stage 1 provide less extreme valuation judgments in Stage 2, to the point where the effect of readability on investors’ reactions is no longer significant for either good or bad news. This suggests that the stronger reactions of participants found in Stage 1 in response to more readable disclosures may be unintentional (Kahneman and Tversky 1996; Tan, Libby, and Hunton 2002). This is also consistent with findings in psychology showing that individuals are not influenced by processing fluency once they are aware of its source (Schwarz 2004; Alter and Oppenheimer 2009). However, these judgments are made after considering another potential level of disclosure readability that the firm could have provided. Thus it is also possible that the different pattern of results for investors’ reactions in Stage 2 (compared to Stage 1) is driven by considerations of managers’ strategic behavior rather than by correction for the effects of processing fluency.

My findings suggest that even if the readability of a disclosure does not affect individuals’ ability to acquire information, the clarity with which the information is conveyed will affect readers’ feelings of processing fluency, and may have important (and perhaps unintentional) consequences for
related judgments and decisions. Recent archival studies investigate relatively long and complex 10-K filings, where differences in readability may be particularly likely to lead to differences in information acquisition (e.g. Li 2008; You and Zhang 2009; Miller 2010; and Loughran and McDonald 2010). However, my results suggest that it is also important to consider the readability of shorter disclosures as well (like press releases). The results are likely to generalize beyond press releases; SEC filings and verbal (e.g., conference call) disclosures vary significantly in the ease with which they can be processed. In addition, subjective perceptions of processing fluency are likely to vary with knowledge and experience, leading to potential differences in how experienced and inexperienced individuals react to a given disclosure. My findings suggest that other parties (e.g. auditors, lenders, employees within the firm, etc.) may be influenced by characteristics affecting the processing fluency of the information presented to them. My findings also suggest that the impact of readability may depend on the skepticism of the reader. Readers who do not consider managers’ discretion over the readability of their disclosures are unlikely to avoid the effects of processing fluency. This suggests that managers may indeed benefit by obfuscating negative information (consistent with Li’s (2008) claims), if readers are not prompted to consider that management could have made different disclosure choices.

My study adds to the growing body of literature investigating the style of disclosures as opposed to their content. Content is the literal meaning of the information conveyed, or the concrete facts contained in a disclosure, whereas style captures the methods used to convey meaning to the audience (through, for example, optimistic vs. pessimistic tone, vividness, vocal cues, etc.). Experiments are well-suited to studying disclosure style, but research in the area is relatively sparse. At least one exception is Hales, Kuang and Venkataraman (2010), which uses an experiment to investigate the effects of vivid vs. pallid language, above and beyond actual information content. Hales et al. (2010) find that investors are only sensitive to differences between vivid and pallid language when it conveys preference-inconsistent information. Future experimental research could
provide additional evidence to complement the archival literature by investigating how specific stylistic choices affect investors’ judgments, and how managers make stylistic choices in the first place.

The rest of this paper proceeds as follows. Section II provides background information and develops my hypotheses. Sections III and IV discuss my experiment and results, respectively. Section V concludes.

II. Background and Development of Hypotheses

The Effect of Disclosure Readability on Investors

To address concerns about disclosure readability, the SEC’s Plain English Rule (421(d)) went into effect on October 1st, 1998, and requires that issuers adhere to plain English principles in the design of firm prospectuses.\(^1\) Documentation surrounding the rule’s release encourages the use of plain English in all disclosure documents, and argues that plain English allows companies to communicate and build relationships with their investors (SEC 1998). More recently, the SEC has expanded plain English rules. Rules 13a-20 and 15d-20 were adopted in 2006 and amend the 1934 Securities Exchange Act to require plain English in disclosures about issues related to corporate governance, related-party transactions, executive and director compensation, and beneficial ownership. In March of 2009, the SEC began requiring that mutual funds provide a plain English summary prospectus of key investment information at the front of their full prospectus.\(^2\) In July of 2010, the SEC voted unanimously to amend the Investment Advisers Act to require plain English in

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\(^1\) In general, definitions of “readability” in prior literature are imprecise, given that the concept of readability has evolved primarily through the evaluation of grade-school textbooks (see Dubay 2004). Some studies use disclosure length as a measure of readability (e.g. Li 2008; You and Zhang 2009, Miller 2010). Other studies have used measures like the Fog Index or Flesch Reading Ease Score (both of which calculate readability based on sentence length and syllable counts). However, Brennan, Guillamon-Saorin and Pierce (2009) argue for more precise measures of readability in business communications. Findings from Loughran and McDonald (2010) support this, and show that both the Flesch and Fog measures have substantial measurement error compared to a “Plain English” measure of readability. As a result, my study manipulates readability through linguistic and formatting choices, as outlined in the *Plain English Handbook*.

\(^2\) See Release No. 33-8998.
Form ADV Part 2, the narrative brochure that SEC-registered investment advisers are required to provide to current and prospective clients.

In its *Plain English Handbook*, the SEC outlines a number of practical linguistic and formatting suggestions for preparing plain English disclosures (SEC 1998). Both linguistic and formatting choices can affect the extent to which investors find a disclosure to be readable. Linguistic suggestions relate to the choice of words and how they are organized. Formatting suggestions relate to the use of features like bullet points, tables and line spacing, which increase the legibility of a disclosure (see Appendix A for examples).

There is evidence in the archival literature to support the idea that disclosure readability affects investors. You and Zhang (2009) show that market underreaction to 10-K filings is more severe as the length of the report (and presumably its complexity) increases. ³ Miller (2010) and Loughran and McDonald (2010) use linguistic suggestions in the *Plain English Handbook* to develop measures of 10-K readability, and provide evidence on the relationship between enhanced readability of 10-K disclosures and the trading behavior of small investors. Miller (2010) finds that more readable disclosures are associated with greater trading activity among small investors (defined as those with trades below $5000) around the 10-K filing date. This holds even after controlling for information content, firm performance and earnings persistence. Miller (2010) also finds that 10-K complexity reduces consensus among small investors, but not large investors (defined as those with trades above $50,000).

Using a different sample period and different measures, Loughran and McDonald (2010) find that improved 10-K readability after the implementation of the Plain English Rule is associated with an increased proportion of trading by small investors (defined as those with trades of less than 100

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³ Although not the focus of my study, there is also evidence to suggest that disclosure readability affects analysts. Lehavy, Li and Merkley (2010) find that firms with less-readable 10-Ks have greater analyst following, suggesting that less readable disclosures increase the need for information intermediaries. However, less readable disclosures also appear to increase the effort expended by analysts, as measured by the time it takes them to provide revised forecasts.
shares). Furthermore, readability is positively associated with increased seasoned-equity issuance and better corporate governance, suggesting that more shareholder-friendly firms improve their disclosure readability.

It is possible that the trading volume of small investors is affected by disclosure readability because a less readable disclosure limits the amount of information that they extract (Grossman and Stiglitz 1980; Bloomfield 2002; Hirshleifer and Teoh 2003; Hodge, Kennedy and Maines 2004). However, research in the psychology literature on processing fluency suggests that even if less readable disclosures do not limit investors’ ability to acquire information in the first place, disclosure readability can still affect investors’ judgments and decisions. More specifically, enhanced processing fluency from a more readable disclosure may increase investors’ perceptions that they can rely on the information in the disclosure.

The Role of Processing Fluency

Processing fluency is subjective, and represents how easy it feels to process information. Prior research has manipulated processing fluency in a variety of ways. For example, studies have altered visual processing fluency by manipulating whether materials are presented in a difficult- or easy-to-read font (e.g. Haettenschweiler vs. Cambria) or by manipulating font size and color (see, e.g. Novemsky, Dhar, Schwarz and Simonson 2007). Other studies have manipulated linguistic processing fluency through, for example, rhyming (McGlone and Tofighbakhsh 2000), the use of easy- or hard-to-pronounce words (Alter and Oppenheimer 2006) or the use of simple vs. complex synonyms (Oppenheimer 2006).

Despite the range of techniques that have been used to manipulate processing fluency, the corresponding responses from individuals are remarkably similar across different settings. In general, individuals like messages that feel easy to process. Because individuals assume that feelings experienced while thinking about a target bear on the target itself, the feelings of subjective ease
associated with processing fluency are typically treated as a cue that something about the message or messenger is good.\textsuperscript{4} Processing fluency has been associated with higher ratings of truth, preference for the message and the messenger, willingness to rely on information, and confidence in judgments (see Alter and Oppenheimer 2009 for a review). For example, McGlone and Tofighbakhsh (2000) find that individuals experience higher processing fluency and judge truthfulness to be higher with rhyming aphorisms than with informationally-equivalent non-rhyming aphorisms (e.g. “What sobriety conceals, alcohol reveals” vs. “What sobriety conceals, alcohol unmasks”). Alter and Oppenheimer (2006) find that, in the short term, stocks with names and ticker codes that are easier to pronounce outperform those that are more difficult to pronounce.

With respect to disclosure readability and processing fluency, the \textit{Plain English Handbook} suggests that readability affects processing ease by arguing that its plain English suggestions correspond with how individuals naturally process information (SEC 1998). Greater readability in a disclosure should therefore increase feelings of processing fluency and increase investors’ beliefs that they can rely on the disclosure. Consistent with this prediction, Shah and Oppenheimer (2007) find that when both more and less fluent information is presented, individuals weight the more fluent information more heavily in their judgments. Similarly, Hafner and Stapel (2010) argue that processing fluency increases positive feelings which then serve as a cue regarding the usability of the information.

If investors increase their reliance on disclosures that are more readable, then more readable disclosures should also lead to stronger reactions to the news contained in those disclosures. While both Loughran and McDonald (2010) and Miller (2010) find positive associations between disclosure

\textsuperscript{4} However there are some exceptions, supporting the notion that the meaning of processing fluency can be affected by context (Schwarz 2004). Briñol, Petty and Tormala (2006) find that greater processing fluency can lead to more negative evaluations if ease is framed negatively. Similarly, Labroo and Kim (2009) find that individuals with explicit goals evaluate objects associated with pursuing their goals more negatively when they are high in processing fluency, presumably because individuals adopt a heuristic belief that achieving something of value will require greater effort (and thus ease is viewed negatively).
readability and the trading behavior of small investors, they reach differing conclusions on whether readability from the use of plain English affects small investors above and beyond the effects of 10-K length. Specifically, Loughran and McDonald (2010) conclude that readability affects investor reactions even after controlling for the length of the 10-K, whereas Miller (2010) finds that length subsumes the effects of readability from the use of plain English. Since these two papers use different measures of readability, different methods of capturing “small investors,” and investigate different time periods, it is difficult to compare their results directly. Thus it is still an open question whether disclosure readability from the use of plain English affects small investors above and beyond disclosure length. Furthermore, both Miller (2010) and Loughran and McDonald (2010) look at small investors’ responses to overall readability, but do not separately investigate responses to good and bad news. It is important to understand how investors react to bad news disclosures that are low in readability given prior claims that managers strategically obfuscate negative news (Li 2008). In Stage 1 of my experiment, participants receive a single disclosure that contains either good or bad news and is either more or less readable. The use of an experiment allows me to hold disclosure length and total information constant while varying disclosure readability, thereby isolating the effects of disclosure readability on small investors’ reactions to both good and bad news. Again, I measure investors’ reactions by capturing how their valuation judgments change in response to more or less readable disclosures. My first hypothesis is:

Hi: More readable disclosures lead to more positive changes in investors’ valuation judgments when news is good, but more negative changes when news is bad.

As discussed above, I do not expect the stronger reactions to more readable disclosures in my study to be driven by differences in the actual information acquired by investors, but instead by how processing fluency affects their belief that they can rely on the disclosure. Existing techniques in the archival literature cannot address processing fluency as a mechanism through which readability influences investors. An experiment allows me to elicit processing fluency and reliability measures that
are not available in archival data. Holding disclosure length and information constant, my second hypothesis is:

**H2:** More readable disclosures increase investors’ reliance on the information in the disclosure, and this effect operates through increased feelings of processing fluency.

Prior research also suggests that processing fluency may lead to more favorable evaluations of management, even when a disclosure conveys negative news. On one hand, and consistent with H1 and H2, processing fluency can serve as a cue to the usability of a given piece of information, so that negative information is weighted more heavily and leads to lower valuation judgments (Shah and Oppenheimer 2007; Hafner and Stapel 2010). On the other hand, the positive feelings associated with processing fluency can make it so that fluent messages are judged as coming from a more likeable or intelligent source (Oppenheimer 2006).

Instead of asking for intelligence ratings of the manager, I focus on attitudes about managers’ credibility in order to be consistent with prior work in accounting (see e.g. Mercer 2005, Barton and Mercer 2005, Venkataraman 2008, Clor-Proell 2009, Rupar 2010, and Koonce and Lipe 2010). H3 focuses on evaluations of management credibility, and hypothesizes that:

**H3:** Investors’ judgments of management credibility will be higher when news is more readable, regardless of whether the disclosure conveys good or bad news about the firm.

My experiment identifies a circumstance where processing fluency is expected to simultaneously decrease one favorability judgment (valuation when news is bad) but increase another (management credibility). However, it is also possible that fluent negative news and the resulting

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5 As discussed by Mercer (2004), managers’ credibility is distinct from disclosure credibility, although the two are related. Substantial work in the archival literature has investigated disclosure credibility, particularly with respect to management forecasts. However, these studies typically do not distinguish between the credibility of the firm and the credibility of management, or investigate whether managers benefit from developing a personal reputation for credibility. One recent exception is Yang (2010), which finds that manager-specific forecasting reputations are particularly important when forecast news is extreme or analyst dispersion is high.
negative reaction predicted by H1 will carry over into negative impressions of management, leading to lower evaluations of management credibility when negative news is more readable.

To date, only a few studies in the accounting literature have relied on theories related to processing fluency. Research suggests that fluency feelings can arise from processing new, external information, but also from the ease of generating thoughts and accessing past memories (Novemsky et al. 2007; Alter and Oppenheimer 2009). Kadous, Krische and Sedor (2006) show that analyst optimism is reduced when analysts are asked to generate few rather than many counter-explanations as to why managers’ plans might fail. Drawing on the work of both Heiman (1990) and Koonce (1992) on the use of counter-explanations and Schwarz et al. (1991) on the availability heuristic, Kadous et al. (2006) argue that their results are driven by the fact that analysts find the generation of few counter-explanations to be subjectively easy, but the generation of many counter-explanations to be difficult. This subjective ease (or processing fluency) serves as a heuristic cue affecting judgments. A more recent paper by Koonce and Lipe (2010) also touches on theories of processing fluency, but in a different context. They find that when information about both earnings trend and earnings performance is available, investors react to each measure only when it is consistent over time (e.g. consistently increasing earnings or consistently meeting performance benchmarks). Koonce and Lipe (2010) argue that inconsistent measures are more difficult to process, and are therefore ignored when consistent information is available.

**Investors’ Perceptions of Managers’ Strategic Readability Choices**

Stage 2 of my experiment is designed to investigate investors’ conscious perceptions about managers’ strategic choices of disclosure readability. In Stage 2 of the experiment I emphasize that managers have discretion in their choice of disclosure readability by presenting participants with both the press release that they initially received and the press release containing the same news but at the other level of readability. Participants view the two press releases side-by-side, and are asked to predict which of the two managers are more likely to provide, given the firm’s performance.
Results are mixed, especially in small-sample studies, on whether managers provide less readable disclosures when firm performance is poor (Courtis 1986; Jones 1988; Subramanian, Insley and Blackwell 1993; Jones and Shoemaker 1994; Clatworthy and Jones 2001). In a more recent large-sample study, Li (2008) finds that disclosures become less readable as firm performance deteriorates, and that positive performance is more persistent when firms have more readable annual reports. Relying on Bloomfield’s (2002) Incomplete Revelation Hypothesis, Li (2008) argues that his evidence is consistent with the hypothesis that managers intentionally obfuscate negative news in order to mitigate the market’s reaction. In a related study, Moffitt and Burns (2009) find that fraudulent 10-K’s are less-readable, supporting the idea that managers may strategically hide bad news.

My experiment makes salient the potential for variation in disclosure readability, and investigates whether investors predict that managers will provide disclosures that vary in readability as firm performance varies. Linguistic choices are influenced by a lifetime of experience with language and are driven by fundamental psychological processes (Tausczik and Pennebaker 2010). My expectation is that when Stage 2 of my experiment makes salient that there is a potential for variation in disclosure readability, participants correctly infer that low readability disclosures will be more difficult to process. In turn, I expect them to believe that managers will use this to their advantage and choose disclosures that are more readable when news is good than when news is bad. My fourth hypothesis is:

\[ H4: \text{When the potential for variation in disclosure readability is made salient, investors predict that managers are likely to provide more readable disclosures when performance is good than when performance is bad.} \]

Bloomfield (2008) suggests a number of plausible alternatives as to why disclosure readability might vary with firm performance, including the idea that poor performance might be inherently harder to describe both because of its unique nature but also because investors may simply demand more information when things are not going well.
III. Experiment

Participants

Participants are 234 individuals recruited from Amazon’s Mechanical Turk platform. Launched in 2005, Amazon’s Mechanical Turk (AMT) is an internet labor market that allows “Requesters” to pay individuals to complete “Human Intelligence Tasks” (HITs). AMT is an increasingly popular source of experimental data for social scientists because the AMT subject pool is large, readily accessible, and at least as representative of the U.S. population as more traditional subject pools (Paolacci, Chandler and Ipeirotis 2010). Furthermore, studies run on AMT have been shown to reliably replicate a wide range of prior JDM findings (Paolacci et al. 2010; Horton, Rand and Zeckhauser 2010).

Libby, Bloomfield and Nelson (2002) suggest that the appropriateness of a particular group of participants can be judged based on whether their knowledge is sufficient for the task. I specifically recruit participants who (1) live in the United States and (2) consider English to be their native language. This particular sample of participants should have sufficient knowledge to act as small investors, read a press release and provide simple judgments of a firm and its management. My focus on small investors is appropriate because Miller (2010) and Loughran and McDonald (2010) find that small (but not large) investors are influenced by the readability of disclosures. Furthermore, the SEC plain English guidelines emphasize that clear writing is primarily intended to assist the “least-sophisticated investors” (SEC 1998).

The average participant is 34.13 years old, with an average of 13.29 years of full-time work experience. Participants have completed an average of 1.23 accounting and 1.12 finance courses.

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7 AMT provides additional quality-control features beyond allowing researchers to screen for certain types of participants. For instance, unique worker ID’s associated with each HIT and the collection of IP addresses mitigates the likelihood that participants complete the task more than once. I confirm that none of the 234 participants in my study have identical IP addresses or worker ID’s. Researchers also have the ability to deny payment to participants for poor quality work (e.g. failing too many attention checks). Thus, AMT overcomes some of the potential concerns with conducting accounting experiments online that are raised by Bloomfield and Rennekamp (2009).
Overall, 89.74% of participants indicate that they have at least some experience with investing, with 45.73% saying that they have invested in individual stocks in the past and 66.24% saying that they plan on investing in individual stocks in the future.\(^8\) Figure 1 presents the sources that participants indicate using for their investment information. The most common source of investment information (with 43.59% of participants indicating it as a source) is companies’ own websites. This suggests that companies may have a substantial amount of control over the presentation of at least some of the information that is accessed by the investing public.

<INSERT FIGURE 1 ABOUT HERE>

**Design**

My experiment uses a 2x2 between-subjects design manipulating whether an abbreviated press release for a fictitious soft drink company (1) conveys good or bad news about the firm, and (2) is more or less readable (see Figure 2, Panel A). The experiment is conducted in two stages (see Figure 2, Panel B). In Stage 1, participants receive a single initial press release. In Stage 2, participants have access to the initial press release but also receive another press release (conveying the same news), but at the other level of disclosure readability. They are told to consider this second press release as an alternative way in which the firm could have presented the information, making salient the potential for managerial discretion in disclosure readability.

<INSERT FIGURE 2 ABOUT HERE>

**Manipulations**

Materials are adapted from those of a real soft drink company (Jones Soda) but are disguised in order to ensure that participants respond to my experimental materials rather than to other factors (for example, the reputation of the actual firm).

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\(^8\) Elliott, Hodge, Kennedy and Pronk (2007) find similar demographic results among first-year MBA students used in their study. Their study investigates whether, and when, MBA students are appropriate proxies for nonprofessional investors. Elliott et al.’s (2007) “early-MBA” participants from their first (second) experiment have an average of 5.2 (5.8) years of full-time work experience, have completed an average of 1.8 (1.6) accounting courses, 1.0 (0.6) finance courses, and 52% (52%) have invested in individual stocks or debt securities in the past.
To manipulate readability, I start by considering the linguistic and formatting suggestions made in the SEC’s *Plain English Handbook*. I then pick the features that can be varied without changing information content. My more readable disclosures conform to the SEC’s suggestions for the chosen features, whereas my less readable disclosures violate the SEC’s suggestions. The specific linguistic features I manipulate are the use of short sentences; active voice; no hidden verbs; no superfluous words; language written in the positive; simple synonyms; personal pronouns; and sentences that keep ‘subject’, ‘verb’ and ‘object’ close together. The formatting features I manipulate are the use of clear headings/hierarchy; appropriate layout; tables; and bullet points. Panels A and B of Appendix A provide examples of the types of linguistic and formatting suggestions, respectively, that I use in my readability manipulations.

To manipulate news I hold revenue and net profit for the firm constant, but change performance in the same quarter for the prior year to alter whether the current quarter represents better (good news) or worse (bad news) performance. I also change the language in the disclosure where appropriate, so that the good news (bad news) disclosures discuss increases (decreases) in performance for the quarter and expectations of further improvement (deterioration) for the upcoming quarter and annual results. Panels A and B of Appendix B provide examples of the abbreviated press releases provided in my more readable conditions for good and bad news, respectively. Appendix C provides similar examples for my less readable conditions.

**Task and Procedure**

In Stage 1 of my experiment, participants begin by reading basic background information about the company and providing an initial judgment about the appropriate common stock valuation for the firm. Following initial valuation judgments, participants are presented with the abbreviated press release that contains my manipulations (Appendices B and C). After participants review the

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9 Concrete Language and Jargon/Legalese are not included in my readability manipulation because they are difficult to manipulate without changing the information provided to participants.
press release, I ask them to indicate once again their beliefs about the appropriate common stock valuation of the firm, as well as provide their ratings of management competence and trustworthiness (the two components of credibility). After answering questions about firm valuation and management credibility, participants indicate the extent to which they felt that they could rely on the information in the press release and also provide ratings of disclosure readability to capture processing fluency. Again, H2 predicts that a more readable disclosure will lead to higher ratings of processing fluency which, in turn, will increase participants’ beliefs that they can rely on the information in the disclosure. Participants conclude Stage 1 of my task by answering three questions of recall. These are designed to rule out that differences in participants’ responses are due to differences in information acquisition rather than differences in subjective perceptions associated with information processing.

In Stage 2 of my experiment, participants are told that they will also be asked to consider another press release that management could have provided (in addition to the one that they initially received). The second press release that they receive contains the same news (i.e. good or bad), but is presented at the other level of readability. This presentation is intended to make salient to participants that managers can vary the level of readability in their disclosures. To reinforce the difference between the two press releases and increase the likelihood that participants carefully examine them, participants rate the extent to which the actual information in the two disclosures is identical, and also rate which of the two disclosures is more readable. Participants are then asked to indicate the extent to which they think management is more likely to choose one press release versus the other if the goal is to elicit a favorable reaction from the market. My hypothesis in H4 is that participants will predict that managers are more likely to choose the disclosure that is more readable when firm performance is good than when firm performance is bad.

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10 I randomly assign participants to evaluate either firm valuation or management credibility first. Ordering of questions does not interact with other manipulations to influence my dependent variables, and is therefore not discussed further.
In Stage 2 of the experiment, participants are also given the opportunity to provide new valuation, competence and trustworthiness judgments on the same scales as in Stage 1. These judgments allow me to provide some preliminary additional evidence on whether responses in Stage 1 of the experiment are intentional (that is, when the potential for variation in disclosure readability is not salient). Prior papers have successfully used similar designs to disentangle unintentional biases from intentional judgments (see Libby, Bloomfield and Nelson 2002 for a discussion). For example, Tan, Libby and Hunton (2002) provide evidence that professional investors are aware of the potential for opportunistic disclosure behavior by managers in general, but that they do not always correct for these beliefs when making specific judgments. I conclude with additional debriefing and demographic questions.

**Primary Dependent Variables**

**Change in Valuation Judgments.** Following prior literature, I elicit valuation judgments by asking participants to indicate on a 101-point scale what they believe to be an appropriate common stock valuation for the firm, ranging from 0 = low to 100 = high (Koonce and Lipe 2010). Recall that participants make a valuation judgment both before and after viewing the press release containing my manipulations. The actual measure I analyze in testing H1 is the difference between these two valuation judgments. This change measure captures the strength of investors’ reactions to the disclosure.

**Reliance on the Disclosure.** I measure reliance through a direct question asking participants to indicate their agreement with the statement “I felt like I could rely on the information in the press release” (1 = strongly disagree, 7 = strongly agree). However, I also investigate a measure that should reflect reliance, although it is likely to be a noisier proxy. My second measure of reliance is the absolute value of the change in valuation judgments discussed above. Greater reliance should be reflected as a larger value on this measure. I use both of these measures to provide evidence on H2.
Processing Fluency. To measure processing fluency, participants are asked how easy or difficult it felt to read the press release that they received (1 = very difficult, 7 = very easy). My measure therefore captures participants’ subjective feelings, and this measure serves as the mediating variable in my process analysis related to H2 (Oppenheimer 2006).

Management Credibility. I use 101-point scales to capture participants’ judgments about the competence and trustworthiness of management, where 0 = very incompetent or very untrustworthy, and 100 = very competent or very trustworthy (Koonce and Lipe 2010). Consistent with prior studies, I collapse these two ratings into a single measure of management credibility for testing H3.

Predictions about Management Disclosure Choices as Performance Varies. This measure is collected during Stage 2 of the experiment, when participants have access to both the more and less readable disclosure (for either good or bad news depending on condition). While viewing the two press releases side-by-side, I ask participants to predict which of the two managers would choose to provide if their goal is to have the market react as favorably as possible to the news. Responses are collected on a scale indicating that management is either (0) much more likely to choose Press Release A or (7) much more likely to choose Press Release B. Press Release A is shown as the one that they initially received in Stage 1 of the experiment, and Press Release B is the alternative presentation that they have been asked to consider. The actual materials do not explicitly label either press release as “more readable” or “less readable”. For those in the more readable condition I reverse-code responses so that higher values in my analyses indicate a preference for the press release that is more readable. Participants’ predictions on this scale are used to test H4.

IV. Results

Effects of Readability on Valuation Judgments

My expectation from H1 is that more readable disclosures lead to more positive changes in valuation judgments when news is good, but more negative changes in valuation judgments when
news is bad. Descriptive statistics (means, standard deviations and medians) are presented in Panel A of Table 1 for my variable capturing changes in valuation judgments.\(^{11}\)

\[\text{<INSERT TABLE 1 ABOUT HERE}>\]

To test my predicted interaction, I derive contrast weights using the procedure outlined in Buckless and Ravenscroft (1990). The specific contrast weights are as follows: +2 in the Good News/Less Readable Condition, -2 in the Bad News/Less Readable Condition, +3 in the Good News/More Readable Condition, and –3 in the Bad News/More Readable Condition. The first two contrast weights reflect that I expect a relatively strong main effect of good vs. bad news, even at low levels of readability. The third and fourth weights reflect that I expect more readable disclosures to cause changes in valuation judgments to be larger than their less readable counterparts in the same news condition. Results of this planned contrast are presented in Panel B of Table 1.\(^{12}\) As expected, I find support for my predicted interaction (p<0.001, one-tailed). Figure 3 presents the plot of the interaction between news and readability. I also confirm that readability has the predicted effect for both good and bad news by conducting tests of simple main effects. Panel C of Table 1 shows that when news is good (bad), a more readable disclosure leads to significantly more positive (negative) changes in valuation judgments (p=0.012 and 0.046, respectively, both one-tailed).\(^{13}\)

\(^{11}\) Throughout Section IV, results are presented based on 234 participants. Originally 250 participants were recruited. However, 23 additional participants began the study through the link in AMT but did not finish. Of these 23, 8 were in the good news condition and 15 were in the bad news condition. Thus, attrition was marginally significantly higher for participants randomly assigned to bad news than good news press releases (p=0.061, one-tailed). Importantly, attrition was not significantly different between the more and less readable conditions (p=0.392, one-tailed). Of the 250 participants that did complete the task through AMT, 15 erroneously participated even though they were not native English speakers, as requested in my recruiting materials. One additional participant is excluded because a glitch in the Qualtrics software used to administer the task failed to show the page containing my manipulated press release.

\(^{12}\) The interaction of news with readability is also significant without planned contrast weights (p=0.003, one-tailed), or with alternative contrast weights reflecting the (1) main effect of news and (2) the predicted interaction.

\(^{13}\) The normality assumption is violated in three of the four cells of my design for the variable capturing changes in valuation, but my large sample size (n>54 in each treatment) suggests that parametric tests are robust to this deviation from the normality assumption (Scheffé 1959). Furthermore, performing Levene’s test fails to reject the assumption of homogeneity of variance (p=0.579). Therefore, for my analyses of changes in valuation judgments I focus on means and perform parametric tests. However, inferences are the same when I use the nonparametric Wilcoxon Rank Sum test. When news is good, a more readable disclosure leads to significantly more positive
To verify that the stronger reactions to more readable disclosures are not driven by differences in information acquisition, participants respond to three multiple-choice recall questions. These questions are designed to be somewhat difficult in order to ensure that differences in information acquisition can be detected. I ask them to recall (1) by how much the firm’s revenues changed in the quarter, compared to the same quarter in the prior year, (2) whether the CEO expected deteriorating, improving, or steady performance in the upcoming quarter and annual results, and (3) the two countries in which the firm primarily operates. The first two questions are designed to detect whether participants have acquired information about the firm’s past performance and future expectations, both of which may be particularly relevant to making valuation judgments. The last question is designed to detect whether they attended to the detailed information about the firm. There are no significant differences in the overall proportion of responses that are correct across the four conditions (p=0.539, two-tailed). This supports the claim that a more readable disclosure does not lead to greater information acquisition in my experiment, and therefore suggests that reactions to actual differences in participants’ information are not driving my results. For the first two questions, the proportion of participants answering correctly is 73.93% and 82.91%, respectively. For the last question, 98.72% of participants correctly identify at least one of the two countries in which the firm operates, while 84.19% successfully identify both countries.14

Effects of Readability on Processing Fluency and Reliance on a Disclosure

H2 predicts that more readable will increase feelings of processing fluency and, in turn, increase investors’ beliefs that they can rely on the disclosure. As discussed in Section III, I measure changes in valuation judgments (Z=2.33, p=0.010, one-tailed). When news is bad, a more readable disclosure leads to significantly more negative changes in valuation judgments (Z=1.86, p=0.031, one-tailed). For the individual questions, the only difference detected is that participants are more likely to answer the second question correctly with a more readable disclosure. However, this difference only occurs for bad news (p=0.036, one-tailed) rather than good news (p=0.481, one-tailed), so it cannot explain the good news results. Furthermore, if I analyze only those participants that answer the second question correctly, my contrast testing H1 is still significant (p<0.001), as are the main effects for good news (p=0.021, one-tailed) and bad news (p=0.020, one-tailed).
reliance in two ways. Panel A of Table 2 summarizes results of a mediation analysis using my first measure of reliance. The mediation analysis is conducted according to the 4-step procedure specified by Baron and Kenny (1986). In this analysis, the dependent variable is participants’ agreement with the statement “I felt like I could rely on the information in the press release” (1 = strongly disagree, 7 = strongly agree). With respect to Step 1, readability is significantly positively associated with participants’ beliefs that they can rely on the press release (p=0.039, one-tailed). Step 2 confirms that readability is significantly positively associated with participants’ perceptions of processing fluency (p<0.001, one-tailed). Step 3 confirms that the mediating variable, processing fluency, is significantly associated with participants’ reliance on the press release, even after controlling for readability (p<0.001, one-tailed). Finally, Step 4 confirms that processing fluency fully mediates the relationship between readability and participants’ beliefs that they can rely on the press release, as the effect of readability on reliance is no longer significant when included in the model with processing fluency (p=0.431, one-tailed).

Panel B of Table 2 presents the mediation analysis for H2 with a different measure of reliance as the dependent variable: the unsigned measure capturing the change in valuation judgments. While noisier than a direct measure of reliance, the unsigned measure reflects that changes in valuation judgments should be larger (as demonstrated in H1) if reliance on a disclosure is greater. Step 1 confirms that readability is significantly positively associated with participants’ reliance on the press release (p<0.001, one-tailed). Step 2 again confirms that readability is significantly positively associated with participants’ perceptions of processing fluency (p<0.001, one-tailed). Step 3 confirms that processing fluency is significantly associated with participants’ reliance on the press release, after controlling for disclosure readability (p=0.016, one-tailed). Finally, Step 4 supports partial mediation. Readability is still significant, but the significance is reduced when processing fluency is included in the regression (<0.001 to 0.003). I use the Sobel test to confirm that the direct effect is reduced between Steps 1 and 4 (that is, once the mediator is
included (p=0.032, one-tailed)). Results in Table 2 support H2 and show that a more readable disclosure increases participants’ perceptions that they can rely on the information in the disclosure, as a result of increased processing fluency.

**Effects of Readability on Judgments of Management Credibility**

To test H3, I begin by confirming that the trustworthiness and competence responses represent the same underlying credibility construct by performing a reliability analysis. The resulting Cronbach’s alpha is 0.78, which exceeds the recommended threshold of 0.70 (Nunnally, 1978). Therefore, I combine participants’ judgments of management trustworthiness and competence into one management credibility measure by averaging the two responses. Panel A of Table 3 presents descriptive statistics (i.e. means, standard deviations and medians) for the credibility measure. Panel B presents results of two-sample t-tests of the main effect of readability on credibility. However, the effect is not significant for the full sample (p=0.299, one-tailed) or in either the good news (p=0.141, one-tailed) or bad news (p=0.469, one-tailed) subsamples. Thus, the direct effect predicted in H3 is not supported, and press releases that are more readable do not directly lead to higher ratings of management credibility. Furthermore, there are no direct effects of readability on either the management competence or management trustworthiness judgments when analyzed separately.

I do find some evidence that readability has an indirect effect on management credibility through its influence on processing fluency. Hayes (2009) cautions that failure to test for an indirect effect in the absence of a direct effect may cause researchers to miss “potentially interesting,

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15 The normality assumption is violated in the less readable good news condition for my management credibility measure, but my large sample size (n>54 in each treatment) suggests that parametric tests are robust to this deviation from the normality assumption (Scheffé 1959). Levene’s test fails to reject the assumption of homogeneity of variance between the more and less readable conditions that I am testing (p=0.572). Therefore, for my analysis of credibility judgments I focus on means and perform a two-sample t-test. However, inferences are similar (and still not significant) when I use the nonparametric Wilcoxon Rank Sum test to test for differences between the more and less readable conditions (Z=0.677, p=0.249, one-tailed).
important or useful mechanisms by which [the independent variable] exerts some kind of effect on [the dependent variable].” An indirect effect can be established even if the direct effect of the independent variable on the dependent variable is not significant (Kenny et al. 1998; MacKinnon, Krull and Lockwood 2000; Shrout and Bolger 2002).\textsuperscript{16} I confirm that there is an indirect effect because (as shown in testing H2) readability is significantly positively associated with processing fluency (p<0.001), and processing fluency is significantly positively associated with credibility, after controlling for readability (p=0.001, one-tailed, untabulated). However, the lack of a significant direct effect in testing H3 suggests that the effect of readability on credibility may be very small and difficult to detect without a larger sample, or that it may be offset by another variable of opposite sign (MacKinnon et al. 2000; Shrout and Bolger 2002).\textsuperscript{17}

**Investors’ Perceptions of Managers’ Disclosure Choices**

H4 predicts that when the potential for variation in disclosure readability is made salient, participants predict that managers are more likely to provide more readable disclosures when performance is good than when performance is bad. For testing this hypothesis, Stage 2 of my experiment presents participants simultaneously with both the more and less readable press releases for their performance condition (good or bad).

As shown in Panel A of Table 4, results support H4. Participants predict that managers will provide a more readable disclosure in the good news condition than in the bad news condition (p<0.001, one-tailed).\textsuperscript{18} In response to a more general question on managers’ disclosure choices, Panel B of Table 4 shows that participants believe that when a firm is performing well (poorly),

\textsuperscript{16} Mathieu and Taylor (2006) discuss the distinction between a mediator and an intervening variable.

\textsuperscript{17} For example, more readable bad news may lead to lower credibility assessments through an alternative indirect path, offsetting the positive effects of fluency and canceling out the direct effect, should it exist.

\textsuperscript{18} Inferences on H4 are identical if I instead conduct a nonparametric Wilcoxon Rank Sum test on participants’ median responses (p<0.001, one-tailed). When participants are asked to indicate their agreement with the statement that the actual information in the two disclosures is identical (1 = strongly disagree, 7 = strongly agree), the mean response is significantly above the midpoint (p<0.001, one-tailed), indicating their agreement.
managers will intentionally make information easier (more difficult) to understand (p<0.001 for both judgments, one-tailed).

<INSERT TABLE 4 ABOUT HERE>

Additional Analyses

Stage 2 of my experiment also asks participants to make new valuation judgments (on the same 101-point scale as in Stage 1), to see whether and how their responses differ once the possibility is salient that managers may choose strategic levels of readability in their disclosures. I find that participants in the good news condition with a more readable disclosure provide valuation judgments in Stage 2 that are significantly lower than their valuation judgments in Stage 1 (p=0.047, one-tailed, untabulated). At the same time, participants in the bad news condition with a more readable disclosure provide valuation judgments in Stage 2 that are significantly higher than their valuation judgments in Stage 1 (p<0.001, one-tailed, untabulated). Similar to the measure of investors’ reactions used in testing H1, I calculate a measure for each participant of the change between valuation judgments made in Stage 2 and initial valuation judgments made at the beginning of the experiment. Analyzing this measure shows that there is no significant difference between reactions to more and less readable disclosures for either good news (p=0.266, untabulated) or bad news (p=0.970, untabulated). This suggests that the stronger reactions to more readable disclosures found in H1 may be unintentional (Kahneman and Tversky 1996; Tan, Libby, and Hunton 2002). This is also consistent with findings in psychology showing that people are not affected by processing fluency once they realize its source (Schwarz 2004; Alter and Oppenheimer 2009). Alternatively, changes in valuation judgments between Stage 1 and Stage 2 may be due to participants’ considerations about the strategic disclosure behavior of managers.

I also find that participants in both the less readable/bad news and more readable/good news conditions provide significantly lower credibility judgments in Stage 2 of my experiment than in Stage 1 (p=0.019 and p<0.001, one-tailed, respectively, untabulated). In combination with results
discussed above about investors’ perceptions of managers’ strategic choices, these results are consistent with the idea that investors perceive managers as being less credible when they attempt to obfuscate bad news but present good news clearly, so long as investors consider that managers could have made alternative disclosure choices.

V. Conclusion

Recent work in the archival accounting literature investigates disclosure readability (Li 2008; You and Zhang 2009) and its effects on the behavior of small investors (Miller 2010; Loughran and McDonald 2010). I use a controlled experiment to provide complementary evidence and to address questions that cannot be answered with archival data. In Stage 1 of my experiment, participants receive a single press release. I find that, holding constant length and information content, more readable disclosures lead to stronger reactions from investors, so that changes in investors’ valuation judgments are more positive when news is good and more negative when news is bad. Consistent with prior literature in psychology, I find that participants are more likely to feel as though they can rely on a disclosure that is more readable, and that this effect is mediated by processing fluency. This greater reliance on news (be it good or bad) helps to explain the stronger reactions to more readable disclosures that I observe, despite the fact that that readability does not lead to significant differences in the actual information that participants are able to gather from the press release. Counter to my predictions, I do not find that disclosure readability directly affects perceptions of management credibility. Untabulated results indicate that there is an indirect effect of readability on credibility, and that it operates through perceptions of processing fluency. A significant indirect effect in the absence of a direct effect suggests that the effect of readability on credibility may be too small to detect without a larger sample size (Shrout and Bolger 2002), or that there may be an offsetting indirect effect that works in the opposite direction of processing fluency (MacKinnon, Krull and Lockwood 2000). Future work might investigate whether fluency has a more direct effect on
managers’ credibility when there is greater overlap between the message and the messenger (for example, in a conference call where the manager is delivering the message).

In Stage 2 of my experiment, I present participants with both the more and less readable press releases for a given piece of news (good or bad). The press releases are presented side-by-side, which makes it salient to participants that disclosures can differ in their readability. I then capture participants’ predictions about managers’ disclosure choices as performance varies. I find that participants predict that managers will intentionally choose a press release that is more readable when firm performance is good than when performance is bad. Consistent with the idea that participants view this to be strategic obfuscation, I find that participants who initially received a more readable good news press release or a less readable bad news press release (in Stage 1 of the experiment) provide lower credibility judgments in Stage 2. I also find that participants in the more readable disclosure conditions provide valuation judgments in Stage 2 that are less extreme than the valuation judgments they provide in Stage 1, to the point where the effect of readability on investors’ reactions is no longer significant. These results suggest that the stronger reactions in response to more readable disclosures in Stage 1 of my experiment may have been unintentional (Kahneman and Tversky 1996; Tan, Libby and Hunton 2002). This is consistent with prior research showing that individuals do not treat processing fluency as a cue in their judgments once they realize its source (Schwarz 2004; Alter and Oppenheimer 2009). However, it is also possible that the different pattern in valuation judgments in Stage 2 is in response to participants’ considerations about managers’ strategic behavior rather than awareness of the effects of processing fluency. Future work could potentially disentangle these two explanations.

My findings add to the growing body of literature investigating the style of disclosures as opposed to content. Content is the literal meaning of the information conveyed, or the concrete facts contained in a disclosure, whereas style captures the methods used to convey meaning to the audience. In response to Core’s (2001) call for greater computational linguistic processing of
qualitative disclosures, stylistic factors besides readability have been investigated in the archival literature, including certainty (Demers and Vega 2010), numerical intensity (Henry 2008), boilerplate vs. meaningful language (Nelson and Pritchard 2007), and tone (Nelson and Pritchard 2007; Henry 2008; Davis, Piger and Sedor 2008; Davis and Tama-Sweet 2008; Feldman, Govindaraj, Livnat and Segal 2009; Li 2010a; Demers and Vega 2010; and Rogers, Van Buskirk and Zechman 2010). However, experimental investigation of linguistic characteristics is relatively scarce in the accounting literature. One exception is Hales et al. (2010), which investigates the effects of vivid vs. pallid language, above and beyond actual information content. Other recent work has looked at the determinants of the style characteristics of verbal communications (Hobson, Mayew and Venkatchalam 2010), as well as reactions to verbal communications (Mayew and Venkatachalam 2009; Elliott, Hodge and Sedor 2010).

A limitation of my study is that it is not clear whether investors’ reactions differ in response to individual linguistic and formatting choices. I made this design choice to produce a strong treatment effect. My treatments also correspond with real-world disclosures, because the use of either high- or low-quality linguistic and formatting features is likely to be highly correlated in a given disclosure (Loughran and McDonald 2010). However, there is substantial opportunity for future experimental research investigating how individual stylistic features of a disclosure affect investors’ judgments. Experiments are also likely to be well-suited to the investigation of managers’ disclosure decisions (to investors, but also to auditors, other employees, clients, etc.). Sociolinguistics research supports the prediction that choice of linguistic characteristics may vary in line with specific goals and incentives.19 Based on these findings, future work might investigate whether managers (intentionally or unintentionally) use personal pronouns and other linguistic features to influence others’ reactions as firm performance and incentives vary (Chatterjee and Hambrick 2007; Li 2010b).

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19 For example, Gunsch, Brownlow, Haynes and Mabe (2000) investigate how personal pronouns and present/future tense verbs appear to be strategically used in political ads to focus voters on a positive future relationship with candidates. Negative ads tend to emphasize negative past behaviors of the opponent and frame him or her as distant.
My study also adds to the literature on processing fluency, and suggests that it may be an important mechanism for both understanding results in prior studies and motivating predictions in future research. While processing fluency is mentioned only rarely in the existing accounting literature (e.g. Koonce and Lipe 2010), a number of prior findings are consistent with outcomes that would be predicted by research on processing fluency. In their review, Alter and Oppenheimer (2009) point out that all tasks range from effortless to demanding, and that there are a number of sources of processing fluency in a given task. As a result, processing fluency effects are likely to be pervasive across accounting settings. The availability of information, or ease of retrieval, is just one manifestation of processing fluency (Alter and Oppenheimer 2009). Thus, accounting studies showing that professional and nonprofessional investors do not spontaneously recall or consider unfavorable information about a firm shed light on how processing fluency might affect investor behavior (e.g. Kadous, Krische and Sedor 2006; Krische 2005). Similarly, conceptual processing fluency relates to the ease with which individuals access relevant (and sometimes irrelevant) knowledge structures to complete a task (Schwarz 2004). Findings in Hopkins (1996) can perhaps then be thought of as evidence that financial statement classification affects conceptual processing fluency by making category-relevant information more or less accessible.

The effects of processing fluency also represent a potentially fruitful opportunity for future research. For instance, the use of “jargon” is likely to feel more fluent to those with more experience in financial reporting settings, suggesting important experience effects of processing fluency. Furthermore, processing fluency research might also suggest potential remedies for biased decision-making in accounting settings. Alter, Oppenheimer, Epley and Eyre (2007) show that in some circumstances disfluent presentation can lead to more systematic processing, presumably because disfluency can act as a signal that greater effort should be expended on the task. This suggests that processing fluency could be manipulated in a variety of ways to induce relatively more cautious or aggressive behavior among managers, investors, auditors, etc.
Finally, my study uses a source of participants that may prove useful for future research. The AMT platform provides access to more participants than would typically be available in a laboratory setting, and at a substantially lower cost. Furthermore, AMT has controls in place to help alleviate some of the typical concerns raised with online experiments (as discussed in Bloomfield and Rennekamp 2009). On average, participants in my study have some experience with investing, have taken some accounting and finance courses, have more than a decade of full-time work experience, and take the task seriously enough to correctly answer questions that check for their attention. Future work should consider utilizing AMT (or other online crowd-sourcing platforms) for accounting research, particularly with respect to the judgments of less-sophisticated investors.
REFERENCES


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### Appendix A. Examples of Suggestions from the SEC Plain English Handbook

#### Panel A. Linguistic Features Included in My Experimental Manipulation of Readability

<table>
<thead>
<tr>
<th>Features that increase readability</th>
<th>Example of a Less Readable Disclosure</th>
<th>Example of a More Readable Disclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Short sentences</strong></td>
<td>Stephen Miller, Chief Executive Officer, stated, “Sales were above plan, earnings were higher than expectations, the Company engaged in the execution of several initiatives during the third quarter that have it better positioned for the future, and the Company’s business strategy is to increase sales by expanding distribution of its brands in new and existing markets, which is intended to raise consumer awareness and trial of its products, thus leading to increased relevance and purchase intent.”</td>
<td>Chief Executive Officer, Stephen Miller, stated, “Our sales were above plan, our earnings were higher than we expected, and we executed several initiatives during the third quarter that have us better positioned for the future. Our business strategy is to increase sales by expanding distribution of our brands in new and existing markets, raising consumer awareness and trial of our products, and increasing relevance and purchase intent.”</td>
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<tr>
<td><strong>Active Voice</strong></td>
<td>…which is intended to raise consumer awareness and trial of our products, thus leading to increased relevance and purchase intent.</td>
<td>…raising consumer awareness and trial of our products, and increasing relevance and purchase intent.</td>
</tr>
<tr>
<td><strong>No Hidden Verbs</strong></td>
<td>While sales were below plan and earnings were lower than expectations, the Company engaged in the execution of several initiatives during the third quarter that have it better positioned for the future…</td>
<td>While sales were below plan and earnings were lower than expected, we executed several initiatives during the third quarter that have us better positioned for the future…</td>
</tr>
<tr>
<td><strong>No Superfluous Words</strong></td>
<td>The decrease in revenue was primarily because of the fact that there was a decrease in total case sales of 34.5 percent to 2.9 million cases.</td>
<td>The decrease in revenue was primarily due to a decrease in total case sales of 34.5% to 2.9 million cases.</td>
</tr>
<tr>
<td><strong>Write in the Positive</strong></td>
<td>The Company is not satisfied with what has been accomplished so far in fiscal 2009.</td>
<td>We are dissatisfied with what has been accomplished so far in fiscal 2009.</td>
</tr>
<tr>
<td><strong>Simple Synonyms</strong></td>
<td>The Company is focused on escalating distribution of its products, building and maintaining good relationships with key distributors; and creating pioneering brands of beverages and products.</td>
<td>The Company is focused on expanding distribution of its products, building and maintaining good relationships with key distributors; and creating innovative brands of beverages and products.</td>
</tr>
<tr>
<td><strong>Personal Pronouns</strong></td>
<td>The recent strength of the overall economy and financial markets has positively impacted the Company’s two primary markets: the U.S. and Canada. This has not decreased consumer confidence in the economy and the Company believes has positively affected consumers’ willingness to purchase its products as they augment discretionary spending.</td>
<td>The recent strength of the overall economy and financial markets has positively impacted our two primary markets: the U.S. and Canada. This has increased consumer confidence in the economy and we believe has positively affected consumers’ willingness to purchase our products as they grow their discretionary spending.</td>
</tr>
<tr>
<td><strong>Keep Subject-Verb- and Object in order and together.</strong></td>
<td>The table below summarizes revenue and earnings performance for the quarter ended September 30, 2009, as compared to September 30, 2008, for Cooper Soda Co (NASDAQ: CSOD), a leader in the premium soda category and known for its unique branding and innovative marketing, which today announced results for the quarter ended September 30, 2009.</td>
<td>Cooper Soda Co. (NASDAQ: CSOD), a leader in the premium soda category and known for its unique branding and innovative marketing, today announced results for the quarter ended September 30, 2009. The table below summarizes revenue and earnings performance for the quarter ended September 30, 2009, as compared to September 30, 2008.</td>
</tr>
</tbody>
</table>
### PANEL B. FORMATTING FEATURES INCLUDED IN MY EXPERIMENTAL MANIPULATION OF READABILITY

<table>
<thead>
<tr>
<th>Features that increase readability</th>
<th>Example of a Less Readable Disclosure</th>
<th>Example of a More Readable Disclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clear Headings/Hierarchy</strong></td>
<td>COOPER SODA CO. REPORTS…</td>
<td>COOPER SODA CO. REPORTS</td>
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<tr>
<td></td>
<td>Portland, OR – November 5, 2009</td>
<td><em>Portland, OR – November 5, 2009</em></td>
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<td>…</td>
<td><em>…</em></td>
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<td></td>
<td>Outlook</td>
<td><em>Outlook</em></td>
</tr>
<tr>
<td><strong>Appropriate Layout</strong></td>
<td>Cooper Soda Co. (NASDAQ: CSOD), a leader in the premium soda category and known for its unique branding and innovative marketing, today announced results for the quarter ended September 30, 2009.</td>
<td>Cooper Soda Co. (NASDAQ: CSOD), a leader in the premium soda category and known for its unique branding and innovative marketing, today announced results for the quarter ended September 30, 2009.</td>
</tr>
<tr>
<td><strong>Tables¹</strong></td>
<td>The Company acquired Division A from Company X in 1986, Division B from Company Y in 1991, and Division C from Company Z in 1998.</td>
<td>The table below highlights the Company’s Acquisitions:</td>
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<tr>
<td><strong>Bullet Points</strong></td>
<td>[The Company] is focused on escalating distribution of its products, building and maintaining good relationships with key distributors; and creating pioneering brands of beverages and products.</td>
<td>We are focused on:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Expanding distribution of our products;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Building and maintaining good relationships with our key distributors; and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Creating innovative beverage brands and products.</td>
</tr>
</tbody>
</table>

¹ This example is not from my experiment. I use a smaller table as an example in this Appendix because of space limitations. See Appendices B and C for my actual manipulation of the use of tables.
APPENDIX B – More Readable Press Releases Condition

Panel A. Good News/More Readable

COOPER SODA CO. REPORTS STRONG THIRD QUARTER 2010 RESULTS

Portland, OR – August 5, 2010 – Cooper Soda Co. (NASDAQ: CSOD), a leader in the premium soda category and known for its unique branding and innovative marketing, today announced results for the quarter ended June 30, 2010.

The table below summarizes revenue and earnings performance for the quarter ended June 30, 2010, as compared to June 30, 2009.

<table>
<thead>
<tr>
<th></th>
<th>Quarter ended June 30, 2009</th>
<th>Quarter ended June 30, 2010</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>$16.2 million</td>
<td>$24.1 million</td>
<td>+ $5.9 million</td>
</tr>
<tr>
<td>Net Profit</td>
<td>$3.2 million</td>
<td>$4.7 million</td>
<td>+ $1.5 million</td>
</tr>
</tbody>
</table>

The increase in revenue was primarily due to an increase in total case sales.

**Outlook**

Chief Executive Officer Stephen Miller stated, “Our sales were above plan, our earnings were higher than we expected, and we executed several initiatives during the third quarter that have us better positioned for the future. Our business strategy is to increase sales by expanding distribution of our brands in new and existing markets, raising consumer awareness and trial of our products, and increasing relevance and purchase intent. We are focused on:

- Expanding distribution of our products;
- Building and maintaining good relationships with our key distributors; and
- Creating innovative beverage brands and products.

The beverage industry, and particularly those companies selling premium beverages like ours, can be affected by macroeconomic factors including changes in economic conditions and consumer spending patterns. The recent improvement in the overall economy has positively impacted our two primary markets: the U.S. and Canada. This has increased consumer confidence and we believe has positively affected consumers’ willingness to purchase our products as they grow their discretionary spending.

According to Miller, “We are satisfied with our accomplishments so far in fiscal 2010, and expect further improvement in operations for fourth quarter and annual results”.


APPENDIX B, continued.

Panel B. Bad News/More Readable

COOPER SODA CO. REPORTS WEAK THIRD QUARTER 2010 RESULTS

Portland, OR – August 5, 2010 – Cooper Soda Co. (NASDAQ: CSOD), a leader in the premium soda category and known for its unique branding and innovative marketing, today announced results for the quarter ended June 30, 2010.

The table below summarizes revenue and earnings performance for the quarter ended June 30, 2010, as compared to June 30, 2009.

<table>
<thead>
<tr>
<th></th>
<th>Quarter ended</th>
<th>Quarter ended</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>June 30, 2009</td>
<td>June 30, 2010</td>
<td></td>
</tr>
<tr>
<td>Revenues</td>
<td>$30.0 million</td>
<td>$24.1 million</td>
<td>-$5.9 million</td>
</tr>
<tr>
<td>Net Profit</td>
<td>$6.2 million</td>
<td>$4.7 million</td>
<td>-$1.5 million</td>
</tr>
</tbody>
</table>

The decrease in revenue was primarily due to a decrease in total case sales.

Outlook
Chief Executive Officer Stephen Miller stated, “While our sales were below plan and our earnings were lower than we expected, we executed several initiatives during the third quarter that have us better positioned for the future. Our business strategy is to increase sales by expanding distribution of our brands in new and existing markets, raising consumer awareness and trial of our products, and increasing relevance and purchase intent.” We are focused on:

- Expanding distribution of our products;
- Building and maintaining good relationships with our key distributors; and
- Creating innovative beverage brands and products.

The beverage industry, and particularly those companies selling premium beverages like ours, can be affected by macroeconomic factors including changes in economic conditions and consumer spending patterns. The recent weakness in the overall economy has negatively impacted our two primary markets: the U.S. and Canada. This has decreased consumer confidence and we believe has negatively affected consumers’ willingness to purchase our products as they slow their discretionary spending.

According to Miller, “We are dissatisfied with our accomplishments so far in fiscal 2010, and expect further deterioration in operations for fourth quarter and annual results.”
APPENDIX C – Less Readable Press Releases Condition

Panel A. Good News/Less Readable

COOPER SODA CO. REPORTS STRONG Q3 2010 RESULTS

Portland, OR — August 5, 2010 — The information below summarizes revenue and earnings performance for the quarter ended June 30, 2010, as compared to June 30, 2009, for Cooper Soda Co. (NASDAQ: CSOD), a leader in the premium soda category and known for its unique branding and innovative marketing, which today announced results for the quarter ended June 30, 2010.

For the quarter ended June 30, 2010, revenue was $241.1 million, an increase of $5.9 million from $235.2 million in revenue for the quarter ended June 30, 2009. Net profit for the quarter ended June 30, 2010 was $4.7 million, an increase of $1.5 million from a net profit of $3.2 million for the quarter ended June 30, 2009. The increase in revenue was primarily because of the fact that there was an increase in total case sales.

Outlook

Stephen Miller, Chief Executive Officer, stated, “Sales were above plan, earnings were higher than expectations, the Company engaged in the execution of several initiatives during the third quarter that have it better positioned for the future, and the Company’s business strategy is to increase sales by expanding distribution of its brands in new and existing markets, which is intended to raise consumer awareness and trial of its products, thus leading to increased relevance and purchase intent.” The Company is focused on escalating distribution of its products, building and maintaining good relationships with key distributors, and creating pioneering brands of beverages and products.

The beverage industry, and particularly those companies selling first-rate beverages like Cooper, can be affected by macroeconomic factors including changes in economic conditions and consumer spending patterns. The recent weakness in the overall economy has negatively impacted the Company’s two primary markets: the U.S. and Canada. This has not decreased consumer confidence and the Company believes has positively affected consumers’ willingness to purchase its products as they augment discretionary spending. According to Miller, “The Company is not satisfied with what has been accomplished so far in fiscal 2010, and expects further improvement in operations for Q4 and annual results”.

Panel B. Bad News/Less Readable

COOPER SODA CO. REPORTS WEAK Q3 2010 RESULTS

Portland, OR — August 5, 2010 — The information below summarizes revenue and earnings performance for the quarter ended June 30, 2010, as compared to June 30, 2009, for Cooper Soda Co. (NASDAQ: CSOD), a leader in the premium soda category and known for its unique branding and innovative marketing, which today announced results for the quarter ended June 30, 2010.

For the quarter ended June 30, 2010, revenue was $241.1 million, a decrease of $5.9 million from $235.2 million in revenue for the quarter ended June 30, 2009. Net profit for the quarter ended June 30, 2010 was $4.7 million, a decrease of $1.5 million from a net profit of $6.2 million for the quarter ended June 30, 2009. The decrease in revenue was primarily because of the fact that there was a decrease in total case sales.

Outlook

Stephen Miller, Chief Executive Officer, stated, “While sales were below plan and earnings were lower than expectations, the Company engaged in the execution of several initiatives during the third quarter that have it better positioned for the future, and the Company’s business strategy is to increase sales by expanding distribution of its brands in new and existing markets, which is intended to raise consumer awareness and trial of its products, thus leading to increased relevance and purchase intent.” The Company is focused on escalating distribution of its products, building and maintaining good relationships with key distributors, and creating pioneering brands of beverages and products.

The beverage industry, and particularly those companies selling first-rate beverages like Cooper, can be affected by macroeconomic factors including changes in economic conditions and consumer spending patterns. The recent weakness in the overall economy has negatively impacted the Company’s two primary markets: the U.S. and Canada. This has not decreased consumer confidence and the Company believes has negatively affected consumers’ willingness to purchase its products as they diminish discretionary spending. According to Miller, “The Company is not satisfied with what has been accomplished so far in fiscal 2010, and expects further deterioration in operations for Q4 and annual results”.

40
This figure shows the percentage of participants in my experiment (out of 234 total) who indicate that they access particular sources of investment information.
Figure 2. Experimental Design and Order of Tasks

Panel A. 2x2 Between-Subjects Design

<table>
<thead>
<tr>
<th>News</th>
<th>Readability of Initial Press Release Reviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>Less Good News/ Less Readable</td>
</tr>
<tr>
<td>Bad</td>
<td>Less Bad News/ Less Readable</td>
</tr>
</tbody>
</table>

Panel B. Timeline of Events in Stages 1 and 2 of the Experiment

<table>
<thead>
<tr>
<th>Stage 1</th>
<th>Stage 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>P’s receive background info on firm and provide an initial valuation judgment.</td>
<td>P’s receive a single press release containing experimental manipulations.</td>
</tr>
<tr>
<td></td>
<td>P’s make judgments of valuation, credibility, fluency and reliance.* Answer recall questions.</td>
</tr>
<tr>
<td>P’s are told that they will now be asked to also consider another press release that presents the firm’s performance in a different way.</td>
<td>P’s view the initial press release, as well as the press release containing the same (good or bad) news, but at the other level of readability.</td>
</tr>
<tr>
<td>While viewing both press releases, P’s indicate on a slider scale which of the two they believe management is more likely to provide.</td>
<td>P’s provide new valuation and credibility judgments, along with debriefing and demographic questions.</td>
</tr>
</tbody>
</table>

*I randomly order the valuation and credibility questions. Order does not interact with my manipulations to affect responses.
Figure 3. Plot of News x Readability Interaction on Change in Valuation Judgments

This figure plots means, by condition, for the measure used in my experiment to capture changes in investors’ valuation judgments after viewing a disclosure. The experiment manipulates whether a press release contains (1) good or bad news and is (2) more or less readable. 234 participants provide valuation judgments both before and after receiving the press release containing my manipulations (on a 101-point scale (0=low, 100=high)). The measure in my analysis is the difference between these two judgments, which captures the strength of investors’ reactions to the disclosure.
Table 1. Descriptive Statistics and Analysis of Variance – Change in Valuation Judgments

Panel A. Descriptive Statistics - Mean, (Standard Deviation), and [Median]

<table>
<thead>
<tr>
<th>News</th>
<th>Readability</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less</td>
<td>More</td>
<td>Overall</td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>18.153</td>
<td>23.500</td>
<td>20.893</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(12.635)</td>
<td>(13.345)</td>
<td>(13.225)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[20.000]</td>
<td>[22.000]</td>
<td>[20.000]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>n=59</td>
<td>n=62</td>
<td>n=121</td>
<td></td>
</tr>
<tr>
<td>Bad</td>
<td>-10.259</td>
<td>-14.431</td>
<td>-12.420</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(11.371)</td>
<td>(14.357)</td>
<td>(13.113)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[-11.000]</td>
<td>[-15.000]</td>
<td>[-13.500]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>n=54</td>
<td>n=58</td>
<td>n=112</td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>4.575</td>
<td>5.167</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(18.630)</td>
<td>(23.502)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[10.000]</td>
<td>[10.500]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n=113</td>
<td>n=120</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Panel B. Change in Valuation Judgments - Contrast-Coded Analysis of Variance

<table>
<thead>
<tr>
<th>Source</th>
<th>S.S.</th>
<th>d.f.</th>
<th>M.S.</th>
<th>F-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>News x Readability</td>
<td>65829.425</td>
<td>1</td>
<td>65829.425</td>
<td>389.295</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Residual</td>
<td>65.485</td>
<td>2</td>
<td>32.743</td>
<td>0.194</td>
<td>0.824</td>
</tr>
<tr>
<td>Error</td>
<td>38723.720</td>
<td>229</td>
<td>169.099</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Panel C. Change in Valuation Judgments - Simple Main Effects of Readability

<table>
<thead>
<tr>
<th>Source</th>
<th>S.S.</th>
<th>d.f.</th>
<th>M.S.</th>
<th>F-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good News</td>
<td>864.476</td>
<td>1</td>
<td>864.476</td>
<td>5.112</td>
<td>0.012</td>
</tr>
<tr>
<td>Bad News</td>
<td>486.682</td>
<td>1</td>
<td>486.682</td>
<td>2.878</td>
<td>0.046</td>
</tr>
</tbody>
</table>

This table presents descriptive statistics, contrast-coded ANOVA, and simple main effects tests for the measure used in my experiment to capture changes in investors' valuation judgments after viewing a disclosure. The experiment manipulates whether a press release contains (1) good or bad news and is (2) more or less readable. 234 participants provide valuation judgments both before and after receiving the press release containing my manipulations (on a 101-point scale (0=low, 100=high)). The measure in my analyses is the difference between these two judgments, which captures the strength of investors’ reactions to the disclosure. The cells of the experiment receive contrast weights as follows: Good News/More Readable = +3, Bad News/More Readable = -3, Good News/Less Readable = +2, Bad News/Less Readable = -2. All p-values are one-tailed.
Table 2. The Mediating Role of Processing Fluency in the Relationship between More Readable Disclosures and Investors’ Beliefs about their Ability to Rely on the Disclosure

Panel A. Test of H2 with Beliefs about Ability to Rely on the Disclosure as the Dependent Variable

<table>
<thead>
<tr>
<th></th>
<th>IV: Disclosure Readability</th>
<th>DV: Beliefs about Reliance on the Disclosure</th>
<th>Mediator: Processing Fluency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mediation Step</td>
<td>Step 1: IV effect on DV</td>
<td>Step 2: IV effect on Mediator (MV)</td>
<td>Step 3: MV effect on DV, controlling for IV</td>
</tr>
<tr>
<td>Mediation Successful?</td>
<td>3.143 (0.039)</td>
<td>13.428 (&lt;0.001)</td>
<td>56.530 (&lt;0.001)</td>
</tr>
</tbody>
</table>

Panel B. Test of H2 with Unsigned Change in Valuation Judgments as the Dependent Variable

<table>
<thead>
<tr>
<th></th>
<th>IV: Disclosure Readability</th>
<th>DV: Unsigned Change in Valuation Judgments</th>
<th>Mediator: Processing Fluency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mediation Step</td>
<td>Step 1: IV effect on DV</td>
<td>Step 2: IV effect on Mediator (MV)</td>
<td>Step 3: MV effect on DV, controlling for IV</td>
</tr>
<tr>
<td>Mediation Successful?</td>
<td>11.379 (&lt;0.001)</td>
<td>13.428 (&lt;0.001)</td>
<td>4.628 (0.016)</td>
</tr>
</tbody>
</table>

This table summarizes tests of the mediating role of processing fluency between disclosure readability and participants’ reliance on the disclosure. Panel A presents results of the mediation analysis where the dependent variable is participants’ agreement with the statement “I felt like I could rely on the disclosure” (1 = strongly disagree, 7 = strongly agree). Panel B presents results of the mediation analysis with unsigned change in valuation judgments as the dependent variable. The former measure is a direct question of their beliefs about whether they can rely on the press release. The latter measure is a judgment that should reflect reliance. To measure processing fluency, participants are asked how easy or difficult it was to read the press release that they received (1 = very difficult, 7 = very easy).
Table 3. Descriptive Statistics, Two-Sample T-Tests, and Test for Indirect Effects – Credibility Judgments

Panel A. Descriptive Statistics - Mean, (Standard Deviation), and [Median]

<table>
<thead>
<tr>
<th>News</th>
<th>Readability</th>
<th>Overall</th>
<th>Less</th>
<th>More</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>77.415</td>
<td>79.806</td>
<td>78.640</td>
<td>(13.481)</td>
<td>(10.800)</td>
</tr>
<tr>
<td></td>
<td>[80.500]</td>
<td>[80.750]</td>
<td>[80.500]</td>
<td>n=59</td>
<td>n=62</td>
</tr>
<tr>
<td>Bad</td>
<td>61.418</td>
<td>61.198</td>
<td>61.305</td>
<td>(13.688)</td>
<td>(16.329)</td>
</tr>
<tr>
<td></td>
<td>[61.000]</td>
<td>[60.750]</td>
<td>[61.000]</td>
<td>n=55</td>
<td>n=58</td>
</tr>
<tr>
<td>Overall</td>
<td>69.697</td>
<td>70.813</td>
<td></td>
<td>(15.725)</td>
<td>(16.574)</td>
</tr>
<tr>
<td></td>
<td>[70.000]</td>
<td>[72.500]</td>
<td></td>
<td>n=114</td>
<td>n=120</td>
</tr>
</tbody>
</table>

Panel B. Credibility Judgments - Two-Sample T-Tests

<table>
<thead>
<tr>
<th>Sample</th>
<th>Readable</th>
<th>t-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Sample</td>
<td>1.116</td>
<td>0.528</td>
<td>0.299</td>
</tr>
<tr>
<td>Good News</td>
<td>2.391</td>
<td>1.079</td>
<td>0.141</td>
</tr>
<tr>
<td>Bad News</td>
<td>-0.220</td>
<td>-0.078</td>
<td>0.531</td>
</tr>
</tbody>
</table>

Panel A presents descriptive statistics on the credibility measure in my experiment, in which 234 participants read a press release and provide associated competence and trustworthiness judgments on a 101-point scale (0=low, 100=high). Credibility is measured as the average of the Trustworthiness and Competence judgments after Cronbach’s alpha confirms that the two measures are capturing the same underlying construct. Panel B presents results for testing the effects of readability on credibility in the full sample as well as the good and bad news subsamples.
Table 4. Responses to Questions in Stage 2 of the Experiment Regarding Managers’ Strategic Disclosure Choices

Panel A. Test of H4

<table>
<thead>
<tr>
<th>Question</th>
<th>Scale (0)†</th>
<th>Scale (7)†</th>
<th>Mean Response</th>
<th>Std. Dev.</th>
<th>t-stat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Which press release do you believe management would choose to release if their goal is to have the market react as favorably as possible to the news?</td>
<td>Less Readable Press Release</td>
<td>More Readable Press Release</td>
<td>3.290 (2.435)</td>
<td>5.712 (2.002)</td>
<td>-2.4213 8.276***</td>
</tr>
</tbody>
</table>

Participants are presented with both the high and low readability press release for their news condition (i.e. good or bad). I ask them to indicate which of the two press releases managers would choose to provide if their goal is to have the market react as favorably as possible to the news. Responses are collected on a slider scale indicating that management is either (0) much more likely to choose Press Release A or (7) much more likely to choose Press Release B, where Press Release A is shown as the one that they initially received in Stage 1 of the experiment, and Press Release B is the alternative presentation. For those in the high readability condition I reverse-code responses so that higher values in my analyses indicate a preference for the press release that is higher in readability.

† The actual materials that participants receive do not label either press release as "more readable" or "less readable". Rather, participants are just presented with each and are able to draw their own inferences about disclosure readability. The "less readable" and "more readable" labels used in this table are for ease of exposition in explaining my results.

Panel B. Additional Questions Regarding Managers’ Disclosure Choices

<table>
<thead>
<tr>
<th>Question</th>
<th>Scale (0)†</th>
<th>Scale (7)†</th>
<th>Mean Response</th>
<th>Std. Dev.</th>
<th>t-stat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please indicate the extent to which you believe managers intentionally make information easier or more difficult to understand when a firm is performing very well.</td>
<td>Much More Difficult to Understand</td>
<td>Much Easier to Understand</td>
<td>5.944</td>
<td>1.014</td>
<td>36.849***</td>
</tr>
<tr>
<td>Please indicate the extent to which you believe managers intentionally make information easier or more difficult to understand when a firm is performing very poorly.</td>
<td>Much More Difficult to Understand</td>
<td>Much Easier to Understand</td>
<td>1.689</td>
<td>1.460</td>
<td>-18.976***</td>
</tr>
</tbody>
</table>

Participants indicate their responses to general questions regarding managers’ choices as performance varies. A response value of 3.5 indicates a neutral response. T-statistics marked with a "∗", "∗∗", or "∗∗∗" indicate a p-value of <0.10, 0.05 and 0.01, two-tailed, respectively, when testing whether the mean response is significantly different from a neutral value of 3.5. All inferences are identical with nonparametric tests of the median.