

The Deception Spiral: Corporate Obfuscation Leads to Perceptions of Immorality and Cheating Behavior

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Abstract

In four studies, we evaluated how corporate misconduct relates to language patterns, perceptions of immorality, and unethical behavior. First, we analyzed nearly 190 codes of conduct from S&P 500 manufacturing companies and observed that corporations with ethics infractions had more linguistically obfuscated codes than corporations without ethics infractions. Next, we tested perceptions of a company based on values statements modified by obfuscation (Study 2). Participants perceived low-obfuscation companies as more moral, warmer, and more trustworthy than high-obfuscation companies. Finally, behavioral experiments (Studies 3a and 3b) revealed that group members cheat more after reading a high-obfuscation values statement than a low-obfuscation values statement. The results provide evidence of a potentially troublesome cycle: corporate unethicity has linguistic traces, can affect how people appraise a company, and can change ethical behavior.

Keywords

obfuscation, corporate unethicity, deception, deception spiral

Moral decisions are a recurrent part of everyday life. People regularly face opportunities to cheat (Ariely, 2012) and decisions about whether to report the misconduct of others (Bird, 1996). The ubiquity of moral decision making suggests people should be

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adept at recognizing and reporting immoral behavior. Decades of social psychological research, however, suggest people are poor deception detectors (Bond & DePaulo, 2006; Markowitz, 2020) and hesitant to blow the whistle (Miceli et al., 2009). When people judge hypothetical and unambiguous moral situations, however, ethical assessments become clearer.

Our investigation tests how people make moral judgments about corporations using language cues, an idea rooted in a tradition of research that uses words to infer social and psychological processes (Maass et al., 1989; Pennebaker, 2011). Language analysis is effective for evaluating psychological dynamics about people (e.g., social status) and networks or organizations (Kacewicz et al., 2014; Margolin & Markowitz, 2018). By looking at language data, we can learn about social and psychological processes that are representative of a group.

In this article, we evaluate the bidirectional effect of language cues and moral behavior in large groups, particularly how corporations' writing style is linked to deception and ethics infractions. We predict that deception changes how corporations communicate about themselves and that these changes influence perceptions of the group and the moral behaviors of group members. Indeed, the language used by corporations reflects the organization's culture and shapes employees' perceptions and behaviors (Weick, 1979). We identify one style of language, linguistic obfuscation, that may reflect and subsequently encourage unethical behavior. Our findings suggest that obfuscated language is a subtle cue that can undermine the ethicality of decision makers. We examine the possibility of a troublesome "deception spiral" in which both the language and its recipients perpetrate the deceptive behavior.

Language and Deception: The Linguistic Obfuscation Hypothesis

Corporations often use obfuscated, or difficult to understand and obscured language, in documents that involve deception or indicate poor financial performance. For example, companies with negative annual earnings produce more obfuscated reports to the Securities and Exchange Commission than do companies with positive earnings (Humpherys et al., 2011; Li, 2008). These data are consistent with the obfuscation hypothesis (Bloomfield, 2002; Curtis, 1998), which predicts that corporations hide problematic behavior or performance in complex and less understandable reports. Therefore, obfuscated language is a consequence of a corporation's intent to mislead an audience after unfavorable performance or behavior. This form of impression management is deliberate, where language patterns reflect a company's interest in opacity and manipulation of information. Obfuscation as a form of impression management is also theoretically consistent with research on strategic ambiguity, which suggests that people in organizations often "respond with communicative strategies which do not always minimize ambiguity, but may nonetheless be effective" (Eisenberg, 1984, p. 228). Therefore, obfuscation does not need to be overtly deceptive, but instead, a goal-oriented strategic communication method that allows a corporation to self-present in a way that honesty could not.

Obfuscation is therefore defined as a strategic form of communication used to build “cohesion and unity across diverse audience segments,” but is achieved verbally with unclear and difficult-to-understand language (Clementson, 2018, p. 481). This concept is different from other forms of deception, such as equivocation, because of its effects on an audience. As Clementson (2018) suggests, people should respond favorably to equivocal language, though people should respond unfavorably to obfuscation because obfuscating leaders “are often not as clear in their communication as we would like them to be” (Dewan & Myatt, 2008, p. 353). Therefore, obfuscation is a particular form of deception that uses unclear, ambiguous, and often incomprehensible language for an audience to interpret. The effects of obfuscation, as we demonstrate, are far-reaching: We predict and find evidence that obfuscation affects how people perceive the morality, warmth, and trustworthiness of a company, and a company’s muddled values statement can cause people to cheat for monetary gain.

Evidence for the obfuscation hypothesis is robust (Bloomfield, 2002; Burgoon et al., 2016; Courtis, 1998; Garrett et al., 2016; Humpherys et al., 2011; Li, 2008; Mann et al., 2014; Riley & Luippold, 2015) and has been extended to domains where people write about other forms of unethical behavior. For example, deceptive scientists—who tried to present their studies as genuine but had their papers retracted for fraud—used a more abstract writing style, more jargon, and less readable writing as compared with honest scientists (Markowitz & Hancock, 2016). The linguistic obfuscation hypothesis suggests that verbal content (e.g., as indicated by rates of jargon, positive emotion words, and causal terms), style (e.g., as indicated by abstraction), and structure (e.g., as indicated by readability) are related to deceptive intent. Given the strong empirical evidence supporting the obfuscation hypothesis (Bloomfield, 2002; Burgoon et al., 2016; Courtis, 1998; Garrett et al., 2016; Humpherys et al., 2011; Li, 2008; Mann et al., 2014; Riley & Luippold, 2015), which suggests the lack of clarity in writing often signals false speech (see also McCornack, 1992) and is indicated by specific language patterns, we predict that companies with ethics infractions will use more linguistic obfuscation in their values statements than those without ethics infractions.

An important, yet understudied test of the linguistic obfuscation hypothesis is how obfuscation affects perceptions of the ethicality of a target. Related fluency research suggests that high text complexity often leads to negative judgments and perceptions. Oppenheimer (2006) observed that participants who read a high-complexity admissions essay by a prospective student appraised the student more negatively than did those who read a moderate- or low-complexity essay. Other evidence suggests that low-complexity text is preferable to high-complexity text across domains, including corporate communications (Chou et al., 2017). In the current research, we evaluate if manipulating linguistic obfuscation in ethics documents affects how people judge a company’s morality and ethicality. We predict that when participants are presented with a values statement—a section from a code of conduct that outlines the company’s honor code, ideals, and mission—a high-obfuscation writing style will lead to more negative moral perceptions of the corporation (e.g., less morality, less warmth, less

trust) as compared with a low-obfuscation writing style. We further suspect that high-obfuscation writing in a values statement would affect perceptions related to dimensions stated in the message—that is, moral perceptions of the firm—and not necessarily other perceptions, such as competence. We do not offer a formal prediction for competence but rather consider this variable exploratory.

So far, we argued that linguistic obfuscation can affect perceptions of morality. Does linguistic obfuscation in a values statement also affect ethical behavior? Prior work suggests that members of unethical groups can be affected by corporate dishonesty. For example, in one study, employees of a large international bank demonstrated more cheating behavior on an experimental task when they were reminded of their professional identity (Cohn et al., 2014). The researchers hypothesized that the banking industry's culture of dishonesty prescribes bad behavior to its members, an argument echoed in other work as well (Gino et al., 2009).

We therefore expect that exposure to an obfuscated values statement will lead to higher rates of cheating as people will perceive the company as less moral. An alternative explanation to this account, however, is that people tend to make fewer ethical decisions after expending the high levels of cognitive effort, which is typically required by obfuscated text (Gino et al., 2011; Kouchaki & Smith, 2014). Therefore, we test whether resource depletion predicts the possible cheating effects of obfuscated language. In the final studies, we investigate if participants cheat more after reading their group's high-obfuscation values statement versus a low-obfuscation values statement.

Social scientific research evaluating obfuscation as a form of deception has largely investigated its verbal correlates and testing their applicability in new settings (e.g., financial fraud, deceptive conference calls). Our studies provide evidence that obfuscation affects how people think and feel about a company and cheating behavior. Therefore, we show that obfuscation is not just a linguistic artifact, but a psychological phenomenon that can affect perceivers and ethical decision making.

Study 1: Field Study

Method

Almost all companies, including those on the S&P 500 stock market index, write a code of conduct for their employees. While there is no universal template for such codes of conduct, most include letters from executive officers (e.g., the chairman, the chief financial officer), a values statement (e.g., an honor code, including the company's ideals and mission statement), guidelines, and frequently asked questions (e.g., what an employee should do when ethical issues arise). These documents offer important information to employees, providing a vision for the company and its future, while modeling the company's current positions on ethical issues within the organization. In this study, we use several automated text-analysis tools to evaluate dimensions of the linguistic obfuscation hypothesis. Specifically, we investigate word pattern differences in codes of conduct from companies with or without ethics infractions.

Data Collection and Database Information

We used code of conduct text to understand the psychology of the corporation. The codes were catalogued by prior work (Kouchaki et al., 2019), excluding six files that could not be parsed for an automated text analysis. This resulted in a final database of 188 codes from U.S. companies on the S&P manufacturing list (from 1990 to 2012). Prior authors compiled the companies' ethics infractions (e.g., environmental violations, fraud, anticompetitive activity) by searching media and Internet sources (Mishina et al., 2010). For each year, each company was dichotomously coded as unethical (e.g., had ethics infractions; indicator variable = 1) or ethical (e.g., did not have ethics infractions; indicator variable = 0). The corpus of 188 codes of conduct contained a total of 1,548,237 words ($M = 8235.30$ words, $SD = 5154.92$ words).

Automated Text-Analysis Approach

We analyzed the field study data with two automated text-analysis programs, Linguistic Inquiry and Word Count (LIWC; Pennebaker et al., 2015) and Coh-Metrix (McNamara et al., 2014). LIWC and Coh-Metrix quantify word patterns across a variety of social (e.g., words related to family, friends), psychological (e.g., emotion terms), part of speech (e.g., pronouns, articles), and discourse categories (e.g., readability), and have been applied to evaluations of linguistic obfuscation (Li, 2008; Markowitz & Hancock, 2016).

Each LIWC dimension is calculated as a percentage of each code's word count based on words incremented by the tool's internal dictionary (Tausczik & Pennebaker, 2010). For example, the sentence "We value honesty and integrity" contains five words across several categories, including but not limited to: first-person plural pronouns (e.g., *we*; 20% of the total word count), positive affect (e.g., *value*, *honesty*; 40% of the total word count), and conjunctions (e.g., *and*; 20% of the total word count). All language categories described below were drawn from the standard LIWC2015 or Coh-Metrix dictionaries unless otherwise specified.

The Linguistic Obfuscation Index

We analyzed the language patterns of each corporate statement along the linguistic obfuscation index (Markowitz & Hancock, 2016), a composite variable characterized by high rates of jargon, abstraction, and causal terms, but low scores of positive emotion terms and Flesch Reading Ease readability (Flesch, 1948). See Table 1 for the correlation matrix for obfuscation variables.

Jargon. Jargon was operationalized as the percentage of words not incremented by the LIWC dictionary, a proxy for the number of common words used in everyday English (Pennebaker et al., 2015; Tausczik & Pennebaker, 2010). This measure reflects complexity through the presence of specialized content (e.g., what is said) rather than structure (e.g., the length of a word or sentence). For example, the phrase "Honesty is

Table 1. Correlation Matrix for Obfuscation Variables ($N = 188$).

Variable	Jargon	Abstraction	Causal terms	Positive emotion	Readability
Jargon	—				
Abstraction	.439***	—			
Causal terms	-.136	.071	—		
Positive emotion	-.100	.325***	.192**	—	
Readability	-.109	.271***	.046	.299***	—

Note. Readability was assessed using Flesch Reading Ease scores.

** $p < .01$. *** $p < .001$.

important” contains three words in the LIWC dictionary, as compared with “Honesty is crucial,” which contains one word outside of the dictionary, which would be considered jargon (*crucial*). The jargon formula for the linguistic obfuscation index is (100-Dictionary); this value was standardized for the obfuscation index. A high score represents a higher rate of jargon and specialized terms than a low score.

Abstraction. Linguistic abstraction is a composite variable derived from three function word categories, including articles (e.g., *a, the*), prepositions (e.g., *to, from*), and quantifiers (e.g., *more, less*). Function words, also known as style words, describe *how* a person is communicating instead of *what* a person is communicating about (e.g., the language content, typically expressed through nouns or verbs; Chung & Pennebaker, 2007).

Style words are important indicators of a range of social and psychological processes, from social status (Kacewicz et al., 2014; Markowitz, 2018) to persuasion (Larrimore et al., 2011). Specific function words indicate concrete writing patterns: Articles refer to concrete nouns (Tausczik & Pennebaker, 2010), prepositions are markers of complexity and critical thinking (Pennebaker et al., 2014), and quantifiers express degrees of difference between objects (Markowitz & Hancock, 2016). People who use high rates of articles, prepositions, and quantifiers often communicate with a concrete language style (e.g., “*The fabric of a strong company . . .*”) relative to people who use low rates of these word types (e.g., “*Strong companies . . .*”) and an abstract language style (Larrimore et al., 2011). To have a single measurement of linguistic abstraction, or the opposite of concreteness, we added the inverse of the standardized rates of articles, prepositions, and quantifiers. A high score on this index suggests a more abstract writing style than a low score (Larrimore et al., 2011; Margolin & Markowitz, 2018; Markowitz & Hancock, 2016). Intercorrelations between articles, prepositions, and quantifiers were all positive and significant ($r_s > .172$, $p < .018$), suggesting that indexing these language variables was empirically valid.

While there are many operationalizations of abstraction or its opposite, concreteness (Pollock, 2018), we chose function words because they are often less susceptible to contextual constraints than other word types (e.g., verbs, nouns; Chung & Pennebaker, 2007). An abstract writing style therefore reflects the company’s reduced focus on specific objects and details that are problematic for an underperforming company (e.g., earnings, employee matters).

Causal Terms and Positive Emotion Terms. Causal terms explain relationships between objects, such as *led*, *reacted*, and *made*. These words are often overused in obfuscated writing to explain why corporate performance may have failed to meet expectations (Li, 2008) and to overexplain the value of fraudulent science (e.g., relationships between variables; Markowitz & Hancock, 2016). Positive emotion terms (e.g., *happy*, *pleasure*, *strong*) are words that describe positive affect. Obfuscated text reporting on deceptive behaviors often contains fewer positive emotion terms than nonobfuscated text because authors understand their corporate performance is problematic or that data in a scientific paper is unverifiable (Li, 2008; Markowitz & Hancock, 2016). Both language dimensions were standardized for the creation of the obfuscation index.

Readability. Each text received a readability score using the Flesch Reading Ease metric (Flesch, 1948). A low score on this measure suggests that the text is more difficult to read (e.g., more words per sentence and more syllables per word) than a high score. Readability was calculated using Coh-Metrix and standardized for the index.

Results

We fit a logistic regression model to predict corporations with ethics infractions, using the overall obfuscation index as a single language predictor. We also include three primary control variables that may affect a company's inclination to act unethically. First, we include year as an indicator variable to control for systematic differences in unethical behavior over time. Second, we control for corporation size, operationalized as the natural logarithm of the number of annual employees, to account for potential inconsistencies among firm composition. Finally, we control for three types of slack resources, defined as available resources that a company can use to achieve their goals (George, 2005). We control for slack resources because companies with more resources may find it unnecessary to pursue unethical or illegal activities. Our slack controls included absorbed slack (e.g., the ratio of administrative expenses to sales), unabsorbed slack (e.g., the ratio of cash and marketable securities to liabilities), and potential slack (e.g., the ratio of debt to equity). Including these controls in the models ensured the best chance of predicting unethicality from linguistic obfuscation and ruling out alternative explanations from prior work.

Consistent with the linguistic obfuscation hypothesis, companies with infractions wrote their corporate statements in a more obfuscated style than did companies without infractions ($\beta = 0.08$, $SE = 0.02$, $z = 4.75$, $p < .001$). We also evaluated the dimensions of the index in separate logistic regression models with controls to assess each feature individually (see Table 2).

Most of the language dimensions, except for causal terms, operated in the predicted direction, and three of the five obfuscation features reached significance. Companies with ethics infractions wrote more abstractly, ($\beta = 0.07$, $SE = 0.03$, $z = 2.50$, $p = .012$), with more jargon, ($\beta = 0.07$, $SE = 0.01$, $z = 5.11$, $p < .001$), fewer positive emotion terms, ($\beta = -0.15$, $SE = 0.07$, $z = -1.98$, $p = .048$), and marginally less readable text ($\beta = -0.01$, $SE = 0.005$, $z = -1.83$, $p = .068$).

Table 2. Field Study Results Across the Obfuscation Index.

Language variable	β	SE	z	p	OR
Obfuscation Index	0.08	0.02	4.75	<.001	1.085
Jargon	0.07	0.01	5.11	<.001	1.075
Abstraction	0.07	0.03	2.50	.012	1.068
Causal terms	-0.03	0.12	-0.27	.788	0.968
Positive emotion terms	-0.15	0.07	-1.98	.048	0.864
Readability	-0.01	0.005	-1.83	.068	0.991

Note. Each logistic regression model included the year, corporation size, and slack resources control variables. OR = odds ratio and represent exponentiated logit betas.

The results from this field study suggest that unethical companies' code of conduct are written in a language style that is consistent with the linguistic obfuscation hypothesis. The obfuscation effect in this setting is a novel contribution, given that tests of the obfuscation hypothesis have not been applied to corporate records with documented ethics infractions. Instead, obfuscation has been evaluated in cases of financial fraud (Courtis, 2004; Humpherys et al., 2011; Li, 2008) and the writing style of deceptive scientists (Markowitz & Hancock, 2016). Therefore, this study suggests that corporate documents and guidelines can offer a valuable lens to evaluate unethical behavior. Not all obfuscation dimensions are unique contributors to identify companies with ethics infractions, however. Corporate unethicality is primarily associated with more linguistic abstraction (e.g., fewer articles, prepositions, quantifiers) and more jargon.

Next, we investigated if reading a high- or low-obfuscation values statement changes people's perceptions of a corporation's morality, warmth, competence, and trust in the company.

Study 2: Perceptions of Obfuscation

Person-perception is often evaluated along two dimensions, warmth and competence (Fiske et al., 2007). Warm and competent people are perceived more favorably (e.g., reliable, intelligent) than cold or incompetent people (e.g., dishonest, unintelligent). Goodwin et al. (2014) advanced this work by extending warmth-competence models to include morality. For example, they had coders assess obituaries (Study 7) and participants then provided an impression rating of the deceased individual based on the obituary text. The data suggested that morality was a unique construct relative to warmth and competence, was more prevalent than warmth in the obituary writing, and was a stronger indicator of impression ratings than warmth.

Together, person-perception can be captured by the prior dimensions that are independent from each other. We use these data as evidence to examine if word patterns

that are typically associated with unethicity (e.g., obfuscation) modify how people perceive a company based on its corporate writing.

Method

We created values statements (e.g., the section most similar to an honor code) from our code of conduct database to test how people rate the morality, warmth, competence, and trustworthiness of a company based on high- or low-obfuscation text. Participants judged values statements instead of complete codes of conduct because obfuscation is typically found throughout an entire document of text (e.g., science papers; Markowitz & Hancock, 2016) and such statements are likely familiar even to people who are not affiliated with a corporation (e.g., people likely have seen a university honor code or are familiar with the Ten Commandments; Mazar et al., 2008). We also wanted to keep the participants' effort burden reasonable. Values statements provide a succinct section of a code of conduct to evaluate how obfuscated language patterns affect perceptions of a company.

Using the Study 1 findings as inspiration to create our stimuli, we first successfully validated that values statements with high and low levels of obfuscation were indeed different on typical obfuscation perceptions (e.g., the clarity and complexity of the writing, how well the writing could be understood; see below for pilot study details). The high-obfuscation values statement contains high levels of abstraction (e.g., low rates of articles, prepositions, and quantifiers; Larrimore et al., 2011; Margolin & Markowitz, 2018; Markowitz & Hancock, 2016) and high rates of jargon (e.g., words outside of the LIWC dictionary; following a stimulus creation similar procedure to Oppenheimer, 2006). The high-obfuscation text example is below, with an overall jargon rate of 28.30% and no articles, prepositions, or quantifiers.

Be Good:

Obey laws and this code.

Be Honest:

Act honestly and scrupulously.

Be Equitable and Impartial:

Follow ordinances when helping government, customers, or suppliers.

Be Staunch:

Protect this Company's interests, assets, and data.

Be Accurate:

Keep complete and veracious business documentation.

Be Deferential:

Respect your peers and our social and physical environment.

A low-obfuscation values statement contains low levels of abstraction (e.g., high rates of articles, prepositions, and quantifiers) and low levels of jargon (e.g., more words captured by the LIWC dictionary). The low-obfuscation text example is also displayed below, with a jargon rate of 13.51%, and higher rates of articles (13.51%; *a, the*), prepositions (8.11%; *of, with, by, around*), and quantifiers (4.05%; *most, another*) than the high-obfuscation values statement.

Be Good:

Obeys the law and the Company's Code of Conduct.

Be Honest:

Acts with the most honesty and a high sense of integrity.

Be Fair and Impartial:

Plays by the rules, whether working with government, a customer, or a supplier.

Be Loyal:

Protects the Company's interests, assets, and information.

Be Accurate:

Keeps the most complete and accurate business records.

Be Respectful:

Respects one another and our social and physical environment around the world.

Participants and Power Analysis

We targeted a sample size of approximately 100 participants per cell, subject to the availability of participants, which would provide nearly 95% power to detect a medium effect size using a two-tailed test ($f = 0.25$, $\alpha = .05$).

Participants in Study 2 were recruited from Amazon Mechanical Turk ($M_{\text{age}} = 35.37$ years, $SD_{\text{age}} = 11.06$ years). Our study had 113 males and 113 females, and one participant who designated "other" as a gender. Gender was evenly represented across our two experimental conditions, $\chi^2(2) = 1.05$, $p = .592$. Experiments in this article received institutional review board approval from the second and fourth author's institutions.

Procedure

Participants entered the Qualtrics survey environment and were randomly assigned to view a high- or low-obfuscation values statement from the pilot study; results for this pilot are located in an endnote.¹ Specifically, participants read a document from an unnamed corporation that explained the values and responsibilities of the company. They were instructed to "read the following values statement from the company's

Code of Conduct.” After reading the values statement, participants were provided with a list of attributes and were asked, “To what extent do you believe this company is . . .” followed by traits used to judge the company’s morality, warmth, competence, and trust (see Measures). Finally, participants provided demographic information (e.g., age, gender) and exited the survey.

Measures

Morality, Warmth, and Competence Perceptions. Participants reported their perceptions of the company along morality, warmth, and competence dimensions. Goodwin et al. (2014) made a clear theoretical distinction between warmth perceptions (conceptualized as inclusive of morally relevant traits, such as sincerity, as well as less morally relevant traits, such as friendliness) and moral character traits that are low on warmth (e.g., principled, just, trustworthy). Using a selection of traits adapted from prior work (Goodwin et al., 2014), participants rated the company across psychological categories.

The categories and their traits included *High Morality, High Warmth* (forgiving, helpful, kind, empathetic, cooperative; Cronbach’s $\alpha = .91$), *High Morality, Low Warmth* (fair, principled, responsible, ethical; Cronbach’s $\alpha = .89$), *High Warmth, Low Morality* (warm, agreeable; Cronbach’s $\alpha = 0.81$; $r = .695$, $p < .001$), and *Competence* (innovative, organized, logical, competent, efficient, effective; Cronbach’s $\alpha = .89$). Participants rated each trait on scale of (1) *Not at all* to (7) *Very much*, and each category was calculated as an average of the traits. In rare cases, when a participant did not provide a rating for an individual trait, a measure of morality, warmth, competence, and trust was not calculated.

Trust. Participants rated their agreement with three statements on a scale of (1) *Strongly disagree* to (7) *Strongly agree* (Cronbach’s $\alpha = .95$): (a) “This company can generally be trusted,” (b) “I trust this company,” and (c) “I can depend on this company to do the right thing.” These three dimensions were averaged to create a single measure of perceived trust.

Together, we evaluated if participants who read a high-obfuscation values statement ($n = 115$) perceived differences in morality, warmth, competence, and trust as compared to participants who read a low-obfuscation values statement ($n = 112$).

Results and Discussion

Morality, Warmth, Competence, and Trust Perceptions. As Table 3 displays, participants rated the high-obfuscation values statements as less moral, less warm, and less trustworthy than the low-obfuscation values statements ($ts > 2.44$, $ps < .015$). Perceptions of competence were not statistically different across values statements.

Crucially, these effects were largely replicated in several other experiments reported in the Supplemental Material (available online). Our other experiments address important alternative explanations for the Study 2 effects, namely that the

Table 3. Morality, Warmth, Competence, and Trust Perceptions for Study 2.

Category	High obfuscation		Low obfuscation		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
High Morality, High Warmth	4.59	1.39	5.19	1.13	3.59	<.001	0.47
High Morality, Low Warmth	5.71	1.10	6.04	0.93	2.44	.015	0.32
High Warmth, Low Morality	4.63	1.50	5.30	1.22	3.72	<.001	0.49
Competence	5.47	1.06	5.61	0.97	1.02	.308	0.14
Trust	5.21	1.33	5.64	1.19	2.57	.011	0.34

text length, specific manipulations of abstraction, jargon, or their combination, and employee perspective-taking might affect the perceptions results. Such manipulations did not lead to systematic perceptions differences after participants read a high- or low-obfuscation values statement. Furthermore, using ecologically valid stimuli, we failed to obtain results. We provided these supplementary studies online in the spirit of transparent science. It is important to not store away these data since they helped to inform our understanding of the relationship between language, obfuscation, and perceptions of corporations. They also serve as positive replications for our Study 2 perceptions experiment.

Next, to explore the potential consequences of obfuscation and achieve our other empirical aim, two studies examined if reading a high-obfuscation values statement of one's in-group leads to a change in one's unethical behavior as compared with reading a low-obfuscation values statement. If we observe that reading a high-obfuscation values statement leads to more unethicality (e.g., cheating) from in-group members than reading a low-obfuscation values statement, there is sufficient evidence of a problematic "deception spiral."

Study 3a: Obfuscation Leads to Cheating With Anagrams

Method

Participants. Subjects were recruited from Amazon Mechanical Turk ($M_{\text{age}} = 35.29$ years, $SD_{\text{age}} = 10.90$ years) and paid for their time in a study with an opportunity to earn additional money based on their performance on a task (up to \$2).

Procedure. This study began by telling participants to assume the role of a member of a research lab called the Behavioral Insights Group. Participants were told that they would read the group's values statement from its code of conduct (using the high- and low-obfuscation stimuli from the experiment using long obfuscation texts; see Supplemental Study 1 available online) and then complete a performance measure that was self-scored. The performance measure was modeled after a standard anagram or word unscrambling task with eight total trials. To ensure that participants understood the procedure, an example of the unscrambling task was provided (e.g., the letters T A C can be rearranged to spell CAT or ACT).

To incentivize participants to take the task seriously, they also were told that they had been randomly assigned to a group of 100 people and that their performance on the anagram task would be compared with the group. Participants were instructed that if their performance was in the top 20% of the group, they would earn a bonus of \$0.25 for each word jumble they unscrambled. They were provided with a comprehension check to ensure that they understood the rules of self-scoring and additional payment, which was fundamental to our cheating measure. Any participant who failed these checks was excluded ($n = 65$). We decided on this exclusion criterion a priori and, given our past experience running this cheating task, we recruited more participants to have sufficient power after excluding participants. We were left with 189 participants (87 males and 102 females). Gender was evenly represented across the experimental conditions after exclusions, $\chi^2(1) = 0.04, p = .85$.

After reading a high- or low-obfuscation values statement about their group, participants were given 2 minutes to complete the self-scored anagram task in which they selected a radio button to indicate “solved” or “not solved” anagrams. Subjects were also told that any blank response would be marked as “not solved.” We made three of the eight anagrams unsolvable (OPOER, ALVNO, ANH DU). Solvable anagrams and possible solutions included the following: (1) “TTISRA”: “ARTIST”; (2) “SREETD”: “RESTED”; (3) “LONSEM”: “LEMONS”; (4) “EESPRMU”: “SUPREME”; and (5) “TTEDES”: “TESTED.” We counted responses on the unsolvable anagrams as evidence of cheating.

Results

Participants who read a low-obfuscation values statement cheated less and claimed to solve fewer unsolvable anagrams ($M = 0.75, SD = 0.99$), as compared with participants who read a high-obfuscation values statement ($M = 1.05, SD = 1.05$); $t(187) = 2.03, p = .044, d = 0.29$. High levels of linguistic obfuscation can increase dishonest behavior.

To investigate whether our cheating results are specific to the materials used in this study, Study 3b reports a replication using different stimuli and a different cheating measure. We also perform a mechanism test by having participants complete a measure of resource depletion after reading their values statement. After expending high levels of cognitive effort, which is typical with obfuscated text, people may make less effortful decisions. A measure of depletion evaluated if possible cheating effects are due to energy expenditure or language.

Study 3b: Obfuscation Leads to Cheating With Number Matrices

Method

Participants. This study took place at a large Midwestern university in the United States. A total of 200 students participated in this online study for \$5 pay ($M_{\text{age}} = 20.97$ years, $SD_{\text{age}} = 3.68$ years) with an opportunity to earn additional money based on their

performance on a task (up to \$5). Our experiment had 121 females and 79 males. Gender was evenly represented across the experimental conditions, $\chi^2(1) = 1.86$, $p = .17$.

Procedure. This study began by telling participants to assume the role of a member of a research lab called the Behavioral Insights Group. Participants were told that they would read the values statement of the group and then complete several self-report measures.

After participants were randomly assigned to read a high- or low-obfuscation values statement (the statements used to disentangle obfuscation with both abstraction and jargon manipulated, located in Supplemental Study 2 available online), they completed a measure of resource depletion (Kouchaki & Smith, 2014). After reading a high- or low-obfuscation values statement, we asked participants, "Which of the following magazines would you most like to spend time reading, right now?" and had subjects select either the *New York Review of Books* (a "should" choice) or *People* magazine (a "want" choice). These choices required people to imagine expending different levels of effort while reading. That is, reading *People* magazine is simple and easy for most individuals, while reading the *New York Review of Books* is generally effortful and taxing. If more participants in the high-obfuscation condition selected the "want" option (e.g., *People*) than the "should" option (e.g., the *New York Review of Books*), this evidence would support the idea that reading a high-obfuscation values statement consumes more psychological resources and depletes more cognitive energy.

After the resource depletion question, participants solved number matrices as a performance measure, which involved finding two numbers in a 4 (row) \times 3 (column) grid that sum to 10 (e.g., 5.81 + 4.19). If participants located two numbers that added to 10, they clicked a radio button, "Found it," and progressed to the next matrix and would earn \$0.50. If participants did not find a matrix solution, they did not click a radio button. There were 10 trials during the matrix task, but three were unsolvable (Kouchaki & Smith, 2014). We counted responses on these three unsolvable matrices as cheating.

Results

Participants who read a low-obfuscation values statement cheated less and claimed to solve fewer unsolvable matrices, ($M = 1.44$, $SD = 1.22$), than participants who read a high-obfuscation values statement ($M = 1.81$, $SD = 1.25$); $t(198) = 2.12$, $p = .035$, $d = 0.30$. This evidence is consistent with our third prediction and Study 3a.

Participants in the high-obfuscation condition and low-obfuscation condition were equally likely to select the "want" versus the "should" reading option, $\chi^2(1) = 0.24$, $p = .62$. These data offer no evidence for a resource depletion mechanism.

General Discussion

This article provides a multidimensional view of linguistic obfuscation. The evidence from our studies using manipulated texts reached a clear consensus: People who read

a high-obfuscation values statement rated the company as less moral, less warm, and less trustworthy than did people who read a low-obfuscation values statement. Obfuscated text is not simply rated as less positive overall, however. Competence judgments were not modified by obfuscation, suggesting that the prior dimensions are indeed orthogonal (Goodwin et al., 2014).

We also demonstrated that people who read a high-obfuscation values statement of their group cheated more than did people who read a low-obfuscation values statement. Therefore, obfuscation can lead to a cycle, or “deception spiral,” where obfuscated writing is both perceived as representing less ethical groups and also leads to less ethical behavior. The deception spiral describes a phenomenon where corporate communication reflects a company’s unethical actions through linguistic obfuscation, which influences perceptions of the group as less moral, warm, and trustworthy, which in turn leads in-group members to act less ethically. While codes of conduct for employees are aimed at guiding ethical actions, they can have negative consequences for moral behavior because of how the messages are communicated.

This article makes several contributions. First, our package of studies, combining studies from the main text and online supplement, totaled nearly 5,000 participants and through a variety of tests, we extend a morality judgment paradigm to organizations instead of individuals or hypothetical situations (Haidt, 2001). People can accurately discriminate between high- and low-obfuscation text on morality dimensions in a corporate setting suggesting common, understandable language should replace complex speech.

Second, we provide evidence that people can accurately judge morality based on writing style. We extend fluency research by suggesting that function words can affect perceptions of a target and cheating behavior. Reading challenging content words often leads to negative perceptions, but our data suggest that the absence of function words such as articles (e.g., *a*, *the*) and prepositions is a source of discord as well. Why did such language modifications lead to perception and behavior changes? One potential mechanism offered by prior research suggests that the processing of certain function words and concrete content words may require less cognitive resources than abstract words because they are familiar and syntactically expected in language (Friederici et al., 2000). Indeed, function word processing often leads to a *prototypicality effect*, described as reduced brain activation when the familiarity of a word stimulus increases (Friederici et al., 2000; Raichle et al., 1994). Reading low-obfuscation text may lead to more favorable perceptions of a corporation because the text is familiar and fulfills the reader’s expectations. More important, we show that the perceptions effect is related to dimensions in the message—that is, moral perceptions of the firm—and not other perceptions, such as competency.

Other takeaways from our research may have tangible consequences for corporations and related groups. Corporations should be incentivized to write in a nonobfuscated manner since people may act ethically after reading low-obfuscation text relative to high-obfuscation text. Otherwise, a values statement may backfire in its intended purpose of promoting a moral and ethical company. Our evidence suggests language matters, especially in high-stakes settings when deception might incur a cost for corporations.

Limitations and Future Directions

In our tests of the linguistic obfuscation hypothesis, we addressed several alternative explanations for the outcome that people perceive high-obfuscation texts as less moral, less warm, and less trustworthy than low-obfuscation texts. We explored if the length of the values statements or employee perspective-taking affected perceptions of immorality, and if fluency explained how people make judgments about a company (see Supplemental Material available online). We did not find evidence that length or perspective-taking change perceptions, and fluency only explains results related to warmth. Our tests were therefore limited to features that could be manipulated, but there may be others that should be explored as well.

Future versions of our perspective-taking manipulation should also include a manipulation check to ensure that participants identified with the organization if they were expected to adopt an in-group employee mentality (per the online supplement). Furthermore, it might be informative to collect additional demographic data (e.g., ethnicity, employment status) and investigate how they moderate the perceptions and cheating effects. The cheating tasks in Studies 3a and 3b were also low-stakes situations used to evaluate if obfuscation affects unethical behavior. Future research should investigate if obfuscation affects cheating behavior in high-stakes settings. It is important to consider how our findings can be scaled to understand how unethicality might have high-stakes financial stakes and social implications.

Conclusion

The writing style of corporations can have downstream perceptions-based and behavioral consequences. The evidence in this article suggests that high-obfuscation text leads to negative appraisals of an organization (e.g., people perceive the organization to be less moral, less warm, less trustworthy) than low-obfuscation text. High levels of obfuscation can also lead to cheating. Therefore, unethicality has a linguistic trace that affects how people appraise a company and their likelihood of engaging in unethical behavior, providing evidence for a worrisome deception spiral that can perpetuate unethical behavior. It is continually important to consider how corporations communicate, as their word patterns reveal social and psychological dynamics such as deception and further connect to how people think, feel, and behave.

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Supplemental Material

Supplemental material for this article is available online.

Note

1. Participants in this pilot study were recruited from Amazon Mechanical Turk, randomly assigned to read a high-obfuscation values statement ($n = 50$) or a low-obfuscation values statement ($n = 50$) and paid for their time. They rated how clear, complex, and understandable each text was, with scale ratings ranging from (1) *Not [clear/complex/did not understand] at all*, to (9) *Extremely [clear/complex/understood completely]*. The manipulation checks were successful, as participants who read a high-obfuscation values statement ($M = 7.40$, $SD = 1.62$) rated the writing as less clear than did those who read the low-obfuscation values statement, ($M = 8.08$, $SD = 1.50$); $t(98) = 2.18$, $p = .031$, Cohen's $d = 0.44$. Participants who read a high-obfuscation values statement ($M = 3.38$, $SD = 2.02$) perceived the text as more complex than did participants who read a low-obfuscation values statement, ($M = 1.98$, $SD = 1.36$); $t(85.96) = -4.06$, $p < .001$, $d = 0.81$. Finally, participants who read a high-obfuscation values statement rated the writing as less understandable ($M = 7.64$, $SD = 1.37$) than did participants who read a low-obfuscation value statement, ($M = 8.26$, $SD = 1.38$); $t(98) = 2.26$, $p = .026$, $d = 0.45$.

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