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The Finer Points of Lying Online: E-Mail Versus Pen and Paper

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The authors present 3 experimental studies that build on moral disengagement theory by exploring lying in online environments. Findings indicate that, when e-mail is compared with pen-and-paper communication media (both of which are equal in terms of media richness, as both are text only), people are more willing to lie when communicating via e-mail than via pen and paper and feel more justified in doing so. The findings held consistent whether the task assured participants that their lie either would or would not be discovered by their counterparts. Implications for theory and practice are discussed.

Keywords: deception, computer-mediated communication, ultimatum bargaining

When do people lie? Do situational cues, such as method of communication, prompt the perception that it is more acceptable to deceive in some situations than in others? Empirical research has indeed documented differences: Telephone lying appears to be more common than face-to-face or e-mail lying (DePaulo, Kashy, Kirkendol, Wyer, & Epstein, 1996; Hancock, Thom-Santelli, & Ritchie, 2004). However, questions remain about the impact of various "distant" (i.e., non-face-to-face) communication media on the choice to behave in unethical ways, such as the choice to lie. In this paper we explore lying rates via two distinct text-only media: pen and paper and e-mail. We know surprisingly little about how these two media may influence decision making differently, even though organizational practices from filing taxes to drafting contracts are increasingly moving from paper to e-mail formats. Building on Bandura's (1991, 1999) social cognitive theory of moral disengagement, we predicted that e-mail elicits both greater rates of lying and more justification for such behavior.

What would make people allow themselves to lie when societal norms and individual ethical codes are likely to classify such behavior as a moral transgression? To help us answer this question, we turned to research on moral reasoning. Bandura's (1991, 1999) moral disengagement theory (MDT) provides a framework for explaining how one can maintain a set of internal moral standards, yet still behave in ways inconsistent with these standards in some situations. According to this theory, people release themselves from guilt and responsibility for deviations from a self-regulatory moral code through several possible mechanisms, among which are finding psychological ways to distance oneself from the harmful consequences of one's actions and changing one's perceptions of the conduct itself. For example, one could concentrate on the benefits of one's actions and downplay or forget about the potentially damaging consequences. In the presented research we explore the possibility that people may be more willing to lie in the online environment than via hard-copy pen and paper, because the e-mail channel may trigger different psychological cues than does the paper medium for what constitutes appropriate behavior, in large part by affording more psychological distance between the actor and the "victim" of the deception. Thus, we build on MDT (Bandura 1991, 1999) by arguing that the unconscious and unwritten "rules" surrounding its use in our society make e-mail an easier channel for people to distance themselves from both their actions and the harmful consequences of these actions.

In particular, we argue that e-mail is generally viewed as less permanent, less restrained and more negative, and less personal than are other forms of communication, including pen and paper. Such views can help explain why individuals typing on a computer may be more likely to feel released from strict moral guidelines than are those using pen and paper. First, compared with hard-copy paper text, e-mail may feel less permanent in nature, which would allow any moral infractions to be viewed as less serious. E-mail is often treated as a substitute for verbal communication, such as calling or meeting someone, but at least initially it is used less as a direct substitute for written communication (Sherman, 2008). Thus, people may unconsciously transfer perceptions about face-to-face (e.g., fleeting) communication to e-mail (i.e., we are "talking," not writing, to others through e-mail), so e-mail seems less permanent as a medium. In addition, electronic text inherently permits the deletion of words, sentences, or even whole documents with the touch of a button, potentially making people feel less attached to the words that they use in this medium. The impermanence of online written text can leave the writer feeling less ownership of the words and diminished concern for the moral and ethical implications of what is written. Thus, because people may feel that this medium is less permanent overall than paper text, according to MDT they may feel subconsciously less accountable for their harmful actions, such as being deceptive.

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Next, people tend to be less restrained (and more negative) in e-mail. E-mail giant Google, for example, has recently created a feature allowing users to "unsend" emails within a 5-s window. The need for this tool suggests a tendency toward more impetuous decisions in e-mail content, without due consideration for the consequences of one's actions. The scandals that have come to light in recent years based, in part, on inappropriate information being documented in e-mail exchanges also point to this tendency of less restraint in e-mail than more traditional media (e.g., Kornblut & Seelye, 2006). Even grammar and spelling seem to go largely unappreciated in this electronic medium. Academic research has documented that e-mail inspires more negative language ("flaming"; Kiesler & Sproull, 1986), more uninhibited behavior, and conformance to fewer social norms (e.g., the disinhibition effect; Beer, Knight, & D'Esposito, 2006; Goleman, 2007; Kiesler & Sproull, 1986; Suler, 2004) than do face-to-face interactions. People report more negative characteristics about themselves online than on paper, perhaps because less impression management occurs in the e-mail format (Kiesler & Sproull, 1986; Martin & Nagao, 1989; Richman, Kiesler, Weisband, & Drasgow, 1999; Wilkerson, Nagao, & Martin, 2002). The fact that people seem to be less restrained when communicating via e-mail suggests that people may be less tuned in to the potential consequences of their actions in this medium than others; thus, according to MDT, they may also be more likely to release themselves from responsibility about the potential harm caused through their actions.

Last, people may unconsciously feel less of a personal connection with their communication partners via e-mail than via pen and paper. Studies have reported lower feelings of trust and rapport and less cooperation in the online environment (e.g., Moore, Kurtzberg, Thompson, & Morris, 1999; Naquin & Paulson, 2003). People also seem more willing to judge others more negatively (as in a performance review; Kurtzberg, Naquin, & Belkin, 2005), even when both conditions have equal assurances of anonymity, given the reduced sense of social obligation felt toward others in the online environment. Similarly, people may react more negatively to e-mail messages than to those on paper and may feel that it is an "impersonal" choice (as in receiving sensitive information, such as job-related feedback; Kurtzberg, Belkin, & Naquin, 2006). Thus, overall, people seem to feel more removed from both their own behaviors and the effects of their actions over e-mail. In line with MDT, this psychological distance may make people more likely to lie to another in this medium than in pen and paper.

In sum, the way people have come to see and use email—as (a) less permanent, (b) less restrained/more negative, and (c) less personal—makes this communication medium ripe for moral disengagement, according to MDT (Bandura, 1991), even as compared with pen-and-paper communication. Though e-mail and pen and paper are objectively alike as channels of communication in terms of cues available to send and receive (or "bandwidth," per Barry & Fulmer, 2004), they nonetheless seem to elicit different behaviors. We argue that these differences extend into the moral realm as well. Though empirical results on rates of lying have been inconsistent to date when comparing online and face-to-face settings (e.g., Bowker & Tuffin, 2003; Donn & Sherman, 2002), no studies have yet explored the difference between e-mail and paper, as we do here. MDT explains that conditions providing greater opportunities to disengage from both immoral behaviors and their harmful consequences may predict less ethical choices. Thus, we expected that e-mail would unconsciously trigger more psychological distance from both behaviors and their effects and so might lessen the need for moral self-regulation. Therefore, we predicted that people would engage in greater amounts of deception in e-mail than on paper.

> *Hypothesis 1:* People will use more deception when communicating via e-mail than when communicating via pen and paper.

Justifying Deceptive Behaviors

Another important argument in the moral disengagement framework (Bandura, 1991) is that people typically do not engage in deviant behaviors unless they are able to justify to themselves the rightness of their actions, such that through this process of *moral justification*, their detrimental conduct becomes personally and socially acceptable (Bandura, 1991; Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). In a similar vein, we argue that individuals will perceive deception on e-mail to be a more justifiable behavior than is lying on paper, though they might not have conscious access to the mechanisms driving such actions (per our discussion before Hypothesis 1).

Justification has been argued to be a central component of immoral behavior in that it reduces the uncomfortable cognitive dissonance that people may experience when encountering an ethical dilemma (Messick & Sentis, 1983; Tenbrunsel, 1998). In fact, people may decide on their course of action on the sole basis of how well they can justify their behavior (Diekmann, 1997). Thus, it appears that the tension that often exists between self-interest and moral behavior may be alleviated through a heightened sense of justification for one's (unethical) behavior. Shaw, Wild, and Colquitt (2003) noted that "with justifications, the decision maker accepts full responsibility but denies that the act in question is inappropriate" (p. 445). Recent work has gone one step further and noted that this justification process is more easily accomplished in conditions of uncertainty or ambiguity (Sonenshein, 2007). We posit, based on these findings, that individuals who communicate via e-mail are likely to feel more justified in lying primarily because of the greater ambiguity about appropriate behavior in the online context. Given that few organizations have specific policies to date on what is appropriate (form or content) for e-mail, ambiguity about what is permissible may allow ethical or moral violations to be perceived as more justifiable in e-mail than they might be in less ambiguous and better established media (e.g., committing a falsehood to a piece of paper). For example, is it appropriate to reprimand or fire someone online? Is taking company time to read news-oriented websites the same as taking company time to play online games or scan for other employment? (For further discussion of these issues, see Diefendorff & Mehta, 2007; Lim & Teo, 2005; Robinson & Bennett, 1995). The greater ambiguity about acceptable behavior and content in online environments may allow people to justify unethical behaviors more easily in this realm (Caspi & Gorsky, 2006). Thus, we predicted that individuals not only will engage in deceptive behaviors more in the online context than on paper (Hypothesis 1) but will also feel more justified in doing so (Hypothesis 2). And given that people may decide on their course of action based on how well they can

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justify it (Diekmann, 1997), we predicted justification as a mediator (Hypothesis 3).

Hypothesis 2: People will feel more justified when deceiving others via e-mail than via pen and paper.

Hypothesis 3: E-mailers will feel more justified in their decision to lie than will paper writers; this in turn will predict the increased degree of actual lies offered on e-mail.

Study 1

Method

Forty-eight full-time graduate-level business students participated in this study as part of a class exercise. The task was a modified version of the dictator ultimatum bargaining exercise, chosen because of its success in other studies for exploring misrepresentation (e.g., Boles, Croson, & Murnighan, 2000; Croson, Boles, & Murnighan, 2003). In our version, one party allocated a sum of (fictitious) money between himself or herself and a "partner" (unbeknownst to participants, there was no actual partner). Participants were informed that (a) the partner would have to accept whatever allocation was made; (b) the actual size of the pot of money to be allocated was $89, but the partner knew only that the pot was somewhere between $5 and $100 and would never know the actual size (only what the party decided to report as the pot size); and (c) all interactions would be anonymous and confidential, such that the identity of the parties would never be revealed and, likewise, they would never know the identity of their partner. Participants were then asked to make their allocation by informing their partner of (a) the size of the pot and (b) the decision on how the money was to be distributed between them. All participants understood that the actual activity was an exercise for class and did not involve real money. It was the stated pot size that was our primary dependent variable of interest, as this is where the participant has a choice either to be honest or to lie.

We manipulated the decision-making media: Participants were randomly assigned to complete the exercise via e-mail ($n = 26$), in the form of a Microsoft Word attachment, and then return it to the instructor's e-mail or to complete it via pen and paper ($n = 22$), using their campus mailbox, and return it to the instructor's mailbox in a monitored mailroom. Those in both conditions were given 5 days to complete the exercise. Afterward, during class time, participants were given a written questionnaire containing two items for our justification measure (Cronbach's $\alpha = .89$), which was adapted for this context from previous work (see Kurtzberg et al., 2005). The items were, on a 7-point scale, "How justified would it be if you misrepresented the size of your pot to the recipient?" (1 = *not at all justified,* 7 = *very justified*) and, on a 1 to 100 scale, "To what degree do you feel you owe the other party the courtesy of an accurate report of the pot size?" (1 = *not at all,* 100 = *absolutely and completely*). Responses to both questions were converted to z scores before aggregating to address the difference in scale size. Questions were counterbalanced in the in-class questionnaire, and both were completed via pen and paper (regardless of the decision-making media used).

Results and Discussion

There was more misrepresentation in the e-mail condition than in the pen-and-paper condition, supporting our primary hypothesis (see Tables 1 and 2 for descriptive statistics). In the e-mail condition, 24 out of 26 participants (92.31%) misrepresented the pot size, whereas in the pen-and-paper condition, only 14 out of 22 participants (63.64%) misrepresented the pot size. Results of a cross-tabulation suggest that groups in the e-mail condition (relative to those in the pen-and-paper condition) were significantly more likely to misrepresent the pot size, $\chi^2(1, N = 48) = 5.94$, $p < .05$. T1-T2

Furthermore, there was a significant difference in the size of the pot that was reported. Those in the e-mail condition reported the total pot size as smaller ($M = 56.15$, $SD = 17.70$) than did those in the pen-and-paper condition ($M = 67.32$, $SD = 19.41$), $t(46) = 42.08$, $p < .05$, $d = 0.60$. Keep in mind that the actual pot size was 89. Participants were also more self-centered in the e-mail condition, in that they offered less to the opponent ($M = 29.35$, $SD = 9.18$) than they did in the pen-and-paper condition ($M = 34.73$, $SD = 8.98$), $t(146) = 2.04$, $p < .05$, $d = 0.59$. In both cases, offers were on average roughly half of the reported pot size.

In regards to feelings of justification to deceive (Hypothesis 2), participants reported differences as a function of communication media. Those in the e-mail condition felt more justified to deceive ($M = 0.41$, $SD = 0.94$) than did those in the pen-and-paper condition ($M = -0.48$, $SD = 0.82$), $t(46) = -3.48$, $p < .01$, $d = 1.01$.

Table 1
Study 1: Descriptive Statistics and Correlations

Variable	*M*	*SD*	1	2	3	4	5
1. Manipulation[a]			—				
2. Offer	31.81	9.39	−.28*	—			
3. Pot size	61.27	19.15	−.29*	.24	—		
4. Justification Question 1[b]	4.38	1.47	.30*	−.08	−.67**	—	
5. Justification Question 2[c]	63.32	25.13	.61**	−.17	−.66**	.88**	—
6. Aggregated justification[d]	0.00	0.98	.46**	−.12	−.68**	.98**	.98**

[a] The manipulation was coded as either 0 (pen and paper) or 1 (e-mail). [b] "How justified would it be if you misrepresented the size of your pot to the recipient?" (1 = *not at all justified,* 7 = *very justified*). [c] "To what degree do you feel you owe the other party the courtesy of an accurate report of the pot size? Please report your answer as a number between 1 and 100 where 1 is 'not at all' and 100 is 'absolutely and completely.'" [d] Distributed as a score; hence, the mean equals 0.
* $p < .05$. ** $p < .01$.

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Table 2
Study 1: Means and Standard Deviations by Experimental Condition

	Pen and paper		E-mail	
Condition	*M*	*SD*	*M*	*SD*
Offer	34.73	8.98	29.35	9.18
Pot size	67.32	19.41	56.15	17.70
Justification[a]	−0.48	0.81	0.41	0.94

[a] Aggregated justification, distributed as a *z* score.

Mediation analysis. As a test of Hypothesis 3, the potential mediating role of feelings of justification was explored per Kenny, Kashy, and Bolger's (1998) four-step process. The regression analyses demonstrated first that media type was correlated with the disclosed pot size, $\beta = -.29$, $t(46) = -2.08$, $p < .05$; second, that media type was correlated with the ratings of justification, $\beta = .45$, $t(46) = 3.48$, $p < .01$; third, that perceived justification was correlated with the dependent variable (reported pot size), $\beta = -.68$, $t(46) = -6.28$, $p < .001$, and remained significant even when controlling for media type, $\beta = -.68$, $t(45) = -5.60$, $p < .001$; and fourth, that when controlling for justification, the significant relationship between media type and reported pot size, $\beta = -.29$, $t(46) = -2.08$, $p < .05$, was reduced to nonsignificance, $\beta = .21$ $t(45) = -0.17$, $p > .05$.[1] Sobel's *z* (the indirect effect of the relationship between the communication media and reported pot size via perceived justification) was significant ($z = 3.04$, $p < .01$).Thus, perceived justification mediated the relationship between media type and the decision of how much to misrepresent the pot size, supporting Hypothesis 3.

Study 1 discussion. This study supports our prediction that communication media can influence one's tendency toward being deceptive and tendency to feel justified in acting in this way, with a greater likelihood of misrepresentation resulting for e-mail than for the written paper medium. Such evidence helps to build the theory that the way electronic media are used allows for more disengagement with moral codes than does writing on paper. Both communication conditions assured the same degree of anonymity, so it was not the explicit expectation of getting caught that likely caused the difference in decisions that we observed. Instead, participants described greater feelings of justification for acting this way in the e-mail context, and this lent some initial insight into the psychological differences between these media.

Study 2

We conducted a follow-up study to assuage concerns with interpreting the mediation analyses in Study 1 based on the chronological sequence of participants' making offers first and our measuring justification afterward. Although this sequence was followed purposefully, so as not to prime participants with thoughts about misrepresentation, it is possible that their reported justification is simply a reflection of their prior decision and not an a priori consideration. We addressed this issue by replicating our first study but measuring participants' sense of justification prior to making an offer.

Method

Fifty-six full-time graduate-level business students participated in this study, and they were randomly assigned to a condition. The dictator version of the ultimatum game was used, again without real payouts to the participants. However, the material was distributed to participants 2 days prior to a scheduled class time, with those in the e-mail condition ($n = 28$) receiving the information electronically and those in the pen-and-paper condition ($n = 28$) receiving the information in their school mailbox. In both conditions participants were told to read the exercise before class and complete the attached questionnaire but not to make an offer yet, because further instructions would be provided during class. The questionnaire (with the same justification measure used in Study 1; Cronbach's $\alpha = .86$) was to be turned in upon arrival. Final instructions (containing no new information) were distributed, via e-mail or campus mailbox, while participants were in the class. The offer form was due within the next 6 days (a specific date was provided). As with Study 1, those in the pen-and-paper condition reported their offers to the instructor's mailbox and those in the e-mail condition reported their offers via an e-mail to the instructor.

Results and Discussion

First, replicating our main effect, 25 out of 28 participants (89.29%) misrepresented the pot size in the e-mail condition, whereas 19 out of 28 participants (67.85%) misrepresented the pot size in the pen-and-paper condition, $\chi^2(1, N = 56) = 3.82$, $p = .05$. Again, those in the e-mail condition reported the pot size as smaller ($M = 58.18$, $SD = 19.12$) than did those in the pen-and-paper condition ($M = 69.79$, $SD = 16.47$), $t(54) = 2.43$, $p < .05$, $d = 0.65$ (the actual pot size was 89). Furthermore, participants in the e-mail condition offered less to their opponent ($M = 30.04$, $SD = 10.43$) than did those in the pen-and-paper condition ($M = 37.46$, $SD = 7.81$), $t(54) = 3.42$, $p < .01$, $d = 0.91$, with offers again averaging roughly half of what participants reported as the pot size. The focal variable, justification, showed the same basic pattern of results as in Study 1. Participants in the e-mail condition reported feeling more justified to lie ($M = 0.40$, $SD = 0.87$) than did those in the pen-and-paper condition ($M = -0.41$, $SD = 0.96$), $t(54) = -3.26$, $p < .05$, $d = 0.88$. (See Tables 3 and 4 for descriptive statistics.)

Mediation analysis. We retested Hypothesis 3 using the measure for justification gathered prior to the offer decision. The results again demonstrated first, that media type was correlated with the disclosed pot size (again analyzed as a continuous variable), $\beta = -.31$, $t(54) = -2.43$, $p < .05$; second, that media type was correlated with the justification ratings, $\beta = .41$, $t(54) = 3.26$, $p < .01$; third, that perceived justification was correlated with the dependent variable (the reported pot size), $\beta = -.81$, $t(54) = -10.26$, $p < .001$, and remained significant even when controlling for media type, $\beta = -.82$, $t(53) = -9.38$, $p < .001$; and fourth, that when controlling for justification, the significant relationship

[1] Note that the dependent variable was analyzed as continuous, not discrete, for these analyses, meaning that justification may mediate by how much one is willing to lie, not whether or not one is willing to lie as a yes-or-no variable.

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Table 3
Study 2: Descriptive Statistics and Correlations

Variable	*M*	*SD*	1	2	3	4	5
1. Manipulation[a]			—				
2. Offer	33.25	10.07	−.42**	—			
3. Pot size	63.98	18.62	−.31*	.43**	—		
4. Justification Question 1[b]	4.07	1.63	.33*	−.37**	−.81**	—	
5. Justification Question 2[c]	58.38	21.91	.48**	.41**	−.80**	.90**	—
6. Aggregated justification[d]	0.00	0.99	.41**	−.39**	−.81**	.98**	.98**

[a] The manipulation was coded as either 0 (pen and paper) or 1 (e-mail). [b] "How justified would it be if you misrepresented the size of your pot to the recipient?" (1 = *not at all justified*, 7 = *very justified*). [c] "To what degree do you feel you owe the other party the courtesy of an accurate report of the pot size? Please report your answer as a number between 1 and 100 where 1 is 'not at all' and 100 is 'absolutely and completely.'" [d] Distributed as a *z* score; hence, the mean equals 0.
* $p < .05$. ** $p < .01$.

between media and reported pot size, $\beta = -.31$, $t(54) = -2.43$, $p < .05$, was reduced to nonsignificance, $\beta = -.018$, $t(53) = 0.21$, $p > .05$. As with Study 1, the Sobel test (distributed as *z*) demonstrated that the indirect effect (the relationship between one's sense of identification with the opponent and reported pot size via justification) was indeed significant ($z = 3.10$, $p < .01$). Thus, feelings of justification were found to statistically mediate the relationship between the communication media and the disclosed pot size. Hypotheses 1, 2, and 3 were again supported, even when justification was measured prior to the offer decisions.

Study 2 discussion. The results from Study 2 both replicate the pattern of results from Study 1 and rule out a possible concern regarding our purported mediator because the mediator was measured in the appropriate chronological order. Given that the pattern of results remained consistent that of with Study 1, we can now place greater confidence in both the main effect and the mediating role that justification plays between media and the decision to be deceptive. We also note that the main relationships documented here were statistically stronger than they were in Study 1, perhaps due to the fact that the justification measures did indeed prime people to think about deception and thus may have more greatly encouraged those who were more likely to entertain thoughts of misrepresentation already (i.e., those in the e-mail condition).

One final concern with the design of Studies 1 and 2 is the generalizability of the findings based on the artificial nature of the task used. That is, not only was the task made up and devoid of real consequences of any kind for the participants, but we had assured participants that if they chose to lie, they would not be discovered in this falsehood. We recognize that, even though participants in all conditions were faced with equal temptations based on this artificiality and still did not react equally, this specific type of task may rarely occur in actual practice. Thus, we designed Study 3 to examine the main effect found in Studies 1 and 2 in a context that more closely simulates the risks associated with lying and the potential for actual personal gain that are more likely to exist in the real world. In addition, we used participants who knew one another to more closely simulate the daily interactions that may happen in real settings.

Table 4
Study 2: Means and Standard Deviations by Experimental Condition

	Pen and paper		E-mail	
Condition	*M*	*SD*	*M*	*SD*
Offer	37.46	7.81	29.04	10.43
Pot size	69.79	16.47	58.18	19.12
Justification[a]	−0.40	0.87	0.40	0.96

[a] Aggregated justification, distributed as a *z* score.

Study 3

Method

A sample of 177 full-time managers (in a part-time MBA program) participated in this study in groups of three, yielding 59 groups for study. Participants had both a past and a future relationship with each other, and they were told that any deception would be revealed. The task had a meaningful consequence (in this case, a monetary payout). Participants were 38% female. On average, they were about 29 years of age and had 8.2 years of full-time work experience.

In our version of the Federated Science Fund (FSF) case (Mannix, 1997), participants were randomly assigned to a group of three and a role. They were informed that all of their group members "worked" for the same company but represented different projects: Stockman, Turbo, and United. The projects were eligible for extra funding (of an unknown amount stated to be between $1 million and $50 million) from a central research fund, the FSF. The groups of three were told to hold a 30-min face-to-face meeting to discuss their needs for the money for their own projects. Then, they were informed that only the Turbo role would have the power to decide which amount of the fund each of the three parties would receive. Though none knew the actual size of the fund prior to the meeting, Turbo received this information privately afterward and had to (a) make the allocation decision and (b) report the pot size to the other two parties. It was also explained that each participant would receive $1 of U.S. currency for each $1 million awarded by Turbo in the exercise. For example, for a $20 million award from the FSF one would personally receive $20. Finally, all knew that the actual pot size would be revealed to everyone in the next class.

After the face-to-face meeting, Turbo was given a sealed envelope to open in a private location. All participants in the Turbo role were then informed that the fund size was actually $23 million and

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Table 5
Study 3: Descriptive Statistics and Correlations

Variable	*M*	*SD*	1	2	3	4
1. Manipulation[a]			—			
2. Fund size	19.80	5.03	−.29*	—		
3. Turbo distribution	9.97	3.42	.27*	.90**	—	
4. Stockman distribution	6.62	1.75	−.26*	.90**	−.99**	—
5. United distribution	6.40	1.70	−.27*	.88**	−.99**	.96**

Note. Whether or not those in the Turbo role misrepresented the pot size, they did tend to divide whatever amount they reported equally among the three roles, leading to a very high degree of correlation between the amount allocated to each role.
[a] The manipulation was coded as either 0 (pen and paper) or 1 (e-mail).
* $p < .05$. ** $p < .01$.

were asked to fill out a form. The form asked each Turbo to indicate (a) the total amount of money he or she was distributing and (b) the amount that each of the other two parties would receive. The size of the fund that Turbo stated was our primary dependent variable, because this was where Turbo had a choice to be honest or to lie. In the e-mail condition, participants in the Turbo role reported their pot size and allocations via an e-mailed form ($n = 30$); in the paper condition, the form was filled out on a paper hard copy ($n = 29$). In both cases, the memo was returned to the departmental assistant (either electronically or via a physical mailbox) who issued vouchers (exchangeable for real dollars) in the appropriate amounts.

Results and Discussion

There was a significant difference in the size of the fund reported to the other two participants by condition, supporting our main hypothesis. The fund size to be divided was reported as smaller by those in the e-mail condition ($M = 18.40$, $SD = 5.77$) than by those in the pen-and-paper condition ($M = 21.24$, $SD = 3.69$), $t(57) = 2.25$, $p < .05$, $d = 0.58$ (actual fund size was $23 million). Participants were also more self-centered in the e-mail condition, in that they took more of the fund for themselves ($M = 10.87$, $SD = 3.80$) than did those in the pen-and-paper condition ($M = 9.05$, $SD = 2.74$), $t(57) = -2.10$, $p < .05$, $d = 0.55$. (See Tables 5 and 6 for descriptive statistics.) T5-T6

Study 3 discussion. Results from this study support our main prediction that e-mail, as opposed to writing on paper, seems to promote a greater likelihood to lie for the sake of self-interest. This is so even if participants lie to others familiar to them, with full knowledge that this act will be revealed to the "victims," and irrespective of whatever damage to the decider's reputation might ensue for future interactions as a consequence of deception.

Table 6
Study 3: Means and Standard Deviations by Experimental Condition

	Pen and paper		E-mail	
Variable	*M*	*SD*	*M*	*SD*
Fund size	21.24	3.69	18.40	5.77
Turbo distribution (actual)	9.05	2.74	10.87	3.80
Turbo distribution (perceived by others)	7.29	2.24	6.27	2.58
Stockman distribution	7.08	1.42	6.18	1.95
United distribution	6.87	1.36	5.95	1.89

General Discussion

In this paper we explore individual propensity to lie as a function of different communication media, e-mail versus paper. The results of all three studies show that people deceive more via e-mail than via pen and paper. In addition, people seemed to feel more justified in engaging in these deceptions in the e-mail condition, both before and after the decision itself was made; this reassured us that the feelings of justification did not exist merely as rationalizations of a lie that had already been executed.[2] The third study gives us some confidence in the generalizability of the effect to a context in which real consequences (both financial and reputational) resulted from the dishonest behavior. Combined, our results demonstrate that one's perception of justification and subsequent unethical (deceptive) behavior can be influenced by the communication media used (paper vs. e-mail). Fn2

Our research adds to the literature by empirically exploring the behavioral influences of online communication. Although prior research has begun to look at how different communication media influence individual perceptions and behavior (e.g., Barry & Fulmer, 2004; Carlson & Zmud, 1999; Kurtzberg et al., 2005; Valley, Moag, & Bazerman, 1998), our study is among the first to empirically explore differences between two so-called lean, text-only communication media. The tendency to act in negative ways online does seem to extend to the willingness to feel more justified in engaging in unethical behaviors. This work also extends theory by demonstrating that MDT seem to apply even to mundane daily interactions, such as e-mail exchanges. In this study we were unable to directly observe the proposed mechanisms at work (i.e., greater disregard for the consequences of immoral actions and greater reconstruction of the conduct itself), but in future researchers may aim to document this more specifically. Also left for future work is the notion that people may irrationally feel that written documents carry a stronger degree of permanence as well as legal

[2] Though we cannot know for certain that even in the second study people did not make their offer/deception decision mentally after reading about the exercise but before reporting their decisions in the formal manner, we do know that early decisions were not binding until well after participants had reported their feelings on whether or not deception would be justified.

consequences than do e-mails, which feel fleeting in nature even though they are actually much harder to erase or contain once they are sent out into the world. Similarly, people may feel more anonymous online, even if this is not objectively the case. Regardless of the mechanism at work here, our results are consistent with previous research that has noted that electronic media use requires us to reconceptualize many of the fundamental values that humans hold, including the concepts of shame, emotional closeness, and sincerity (Ben-Ze'ev, 2003).

These findings also suggest that people need to be careful when selecting the appropriate mode of communication for a particular task. Prior research has demonstrated effects such as peer reviews becoming systematically more negative when given online as opposed to on paper, (Kurtzberg et al., 2005), and our findings add to this stream of applied lessons by suggesting that honesty may be at stake in online exchanges as well. For example, lawyers report that contract deliberations and edits that used to occur as a back-and-forth paper exchange are increasingly happening in e-mail (for a review, see Nadler, 2004). Real estate agents report (Toy, 2009) that offer exchanges have moved to the e-mail realm, with potentially uncertain results. Taxes using the increasingly popular e-filing system could be even more fraught with deception than the traditional paper forms. Indeed, even in university settings, many course-evaluation systems are moving from paper-based forms to e-mail or web-based applications, which could change the nature of the information that is collected. Thus, moving paper tasks online either within or across organizational boundaries should be undertaken with caution. Even beyond the direct parallels with the e-mail versus pen-and-paper context we have studied here, the need for caution with e-mail use more generally may be suggested by our findings, as a tendency toward lower ethical practices in this medium could suggest problems even for conversations or tasks that did not start out on paper. Combining electronic with another form of communication may potentially mitigate this concern.

Our findings are limited primarily through the experimental design, which, though providing more complete control over the situation, removes some of the real-world context and cues that one is exposed to in day-to-day professional life. Deception itself is likely to be more complex, and more embedded in ongoing exchanges, than what we were able to capture here. In addition, the tasks we studied used lies that would qualify as "monitoring independent" lies, meaning that the deceiver did not need to see the deceived person's reaction in order to proceed (Schweitzer, Brodt, & Croson, 2002). However, the temptations were the same for paper and e-mail participants, so the differential rates of lying suggest that there may be a different standard of honesty that people tend to hold themselves to when communicating online.

Taken as a whole, our findings contribute to both theory and practice. At the very basic practical level, it is useful to note that e-mail may encourage more falsehoods than does paper-based correspondence. Here, we extend MDT into the electronic realm and offer yet another piece of evidence that when communicating via e-mail, people tend to feel justified to act in a more self-serving manner than they do in other contexts. Overall, this work is another step forward in identifying more clearly the "what and whys" of e-mail use in our society.

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