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# Interpersonality and Online Persuasion

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## **Interpersonality and Online Persuasion**

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### **Abstract**

Computer-mediated communication (CMC) media, such as email, instant messaging, and online texting, provide an important channel for influencing message receivers' behavior. While most communication media are structurally biased to support either interpersonal or broadcast modes of communication CMC easily supports both. We argue that receivers are likely to base the decision to comply with a CMC message on certain characteristics that distinguish interpersonal communication from broadcast communication. Drawing from interdisciplinary theories, we propose a model that predicts receivers' intention to comply with a CMC message based upon *interpersonality*, a concept we develop and explain in this paper. Results of empirical testing show that our proposed model has strong explanatory power. The results have important theoretical contributions to IS research and also provide practical insights for improving the effectiveness of CMC.

### **Keywords**

Information and Communication Technologies (ICT), Persuasion, Interpersonal Communication, Broadcast Communication, Mass Media Communication, Theory Development



## Interpersonality and Online Persuasion

### **Introduction**

We use the phrase *online persuasion* in reference to the process and outcomes of attempts to influence others via computer-mediated communication (CMC) media, such as email, instant messaging, and online texting. These textual forms of CMC are frequently applied to influence the intentions and behavior of message receivers (Elron and Vigoda-Gadot, 2006), and significant research has been conducted to understand persuasion tactics and their effects in CMC (Abele, 2011; Janneck and Staar, 2011; Wilson, 2003) and to predict message persuasiveness based on system features (Wilson, 2005), message receivers' goals (Wilson and Lu, 2008), and message receivers' level of involvement (Fortin and Dholakia, 2005; Jiang et al., 2010; Shiau and Luo, 2010).

Although some may consider studies of persuasion, influence, and rhetoric to be the exclusive province of communication or advertising research, understanding online persuasion is also important to the fields of information systems (IS) and human-computer interaction (HCI). Design decisions made in creating an information and computing technology (ICT) can significantly enhance or obstruct rhetorical persuasive communication (Wilson, 2005). Because IS and HCI practitioners bear an implicit responsibility to improve ICT performance, it is incumbent upon researchers in these fields to develop and test theoretical bases for guiding ICT design, including theory bases that address online persuasion.

One characteristic of online persuasion that has received little attention from researchers involves the ambiguous nature of the message sender in CMC. Most communication media are structurally biased to support *interpersonal* or *broadcast* modes of communication. For example, face-to-face and telephone media primarily support interpersonal communication, i.e., interactive communication between two or more interdependent people (Devito, 2010). Television, radio, and print media primarily support broadcast communication, i.e., non-interactive, one-way communication that typically is designed to address a mass audience (Reardon and Rogers, 1988). CMC media are unusual in that they provide a high level of support for both interpersonal communication and broadcast communication (Reardon and Rogers, 1988). For example, email can deliver an organizational newsletter as easily as a personal note from one's spouse or friend.

The strong support CMC provides for both interpersonal and broadcast communication is beneficial in many ways, but it also creates the opportunity for mischief in the form of unwanted *spam* messages that may appear to be created and sent by an individual but are, in fact, broadcast indiscriminately across the Internet. One reason that spam is so troublesome in CMC is this inherent ambiguity in knowing whether certain messages have been sent by a real person or broadcast by a computer program.

In user surveys, virtually all respondents indicate that they dislike receiving CMC spam messages, and respondents' most common response is to delete such messages (Grimes, Hough, and Signorella, 2007). We argue in this paper that human motivation to categorize CMC messages in order to avoid those that are unwanted is a generalizable phenomenon. Based on this argument we propose an *interpersonality* model for predicting the extent to which receivers are persuaded to comply with requests in CMC messages.

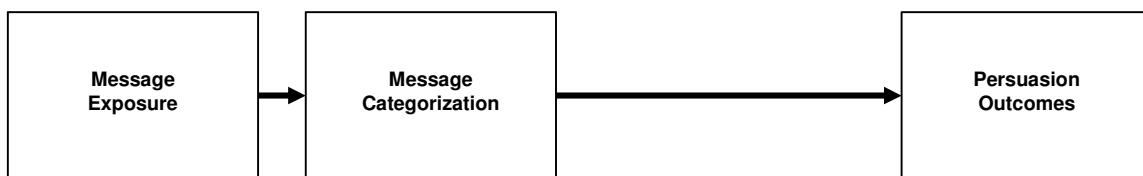
In the following section we present the interpersonality research model and hypothesize relationships within the model. We then describe our research methods and results and conclude by discussing implications of the findings for research and practice.

## Interpersonality Research Model and Hypotheses

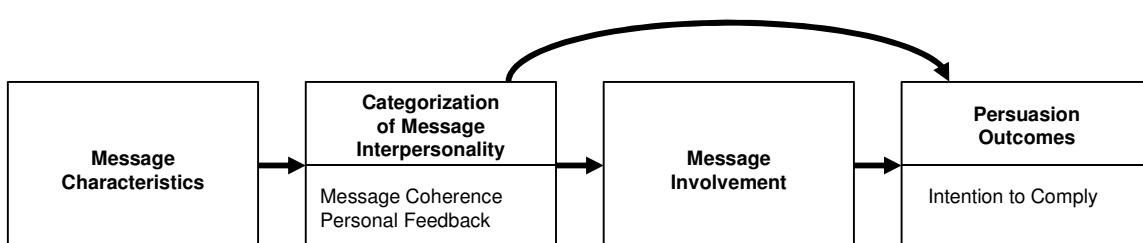
Much of the prior research in online persuasion has been carried out by advertising researchers, and for this reason we draw upon a theoretical stance developed in online advertising communication in which messages are viewed as potential communication exchanges between advertisers and consumers (Ducoffe, 1995, 1996). Ducoffe and Curlo (2000, p. 248) write,

“For an exchange to occur, an advertisement must be processed with sufficient effort so that the receiver comes away with at least some appreciation of the message intended by the sender. By this standard, the vast majority of advertisements that are ignored or dismissed can be viewed as ineffective or failed communications exchanges.”

Ducoffe and Curlo (2000) propose a communication exchange model of advertising value and advertising processing (AVAP model) in which message exposure leads to cognitive processing—including categorization as to whether the message is or is not advertising—and subsequently leads to persuasion outcomes in response to the message (see Figure 1a). We draw upon these aspects of the AVAP model to underpin an interpersonality research model for study of online persuasion in the general CMC context, i.e., extending beyond advertising applications (see Figure 1b).



*A. Message categorization and associated relationships in Ducoffe and Curlo (2000) communication exchange model.*



*A. Interpersonality research model*

**Figure 1. Interpersonality Research Model and Conceptual Origin**

We introduce the term *interpersonality* to describe the cognitive categorization by message receivers of a persuasive online message as interpersonal or broadcast in origin. We propose that assessments of interpersonality are grounded in two key characteristics of interpersonal persuasion that are not found in broadcast persuasion (Reardon, 1991). *Message coherence* is the perception that the sender's message is relevant to the receiver's situation. *Personal feedback* is the anticipation that the message receiver can respond to the message and receive a reply from the sender. Reardon writes,

Interpersonal persuasion occurs when two or a few people interact in a way that involves verbal and nonverbal behaviors, personal feedback, coherence of behaviors (relevance or fit of remarks and actions), and the purpose (on the part of at least one interactant) of changing the attitudes and/or behaviors of the other(s). This definition separates interpersonal persuasion from mass media persuasion, in which personal feedback and coherence are not present. (Reardon, 1991, p. 112)

The interpersonality research model reflects a significant literature that links the *involvement* of message receivers to their compliance with message requests. In addition, the model proposes effects of message coherence and personal feedback that have not been studied previously. These relationships are discussed and related hypotheses are developed in the following sections.

### ***Effects of Message Characteristics***

For most media, message characteristics may be categorized into general areas of message content, message style, and, language use (O'Keefe, 1990; Perloff, 1993). In the case of CMC media, message source (i.e., the sender's name and online address) is an additional characteristic of messages. Email, instant messaging, online texting, and other forms of textual CMC emphasize verbal communication, i.e., using words. This emphasis limits certain message characteristics in CMC, including nonverbal cues, such as body language and facial expressions, and paraverbal cues, such as intonation and volume (Burgoon, Guerrero, and Floyd, 2010; Hollingshead, McGrath, and O'Connor, 1993).

Surveys show that dislike for CMC spam messages is nearly universal, suggesting there is a strong motivation to avoid such messages (Grimes et al., 2007). Potentially, a wide range of message characteristics may be applied to this purpose in practice, as illustrated by this list of "things to look for" in identifying and avoiding spam (eHow.com, 2012):

- A sense of urgency asking you to do something right away or a request for personal information (*message content*)
- Web links within the body of the message (*message style*)
- Grammatical and spelling errors (*language use*)
- Online address of the sender (*message source*)

Our objective in studying message characteristics is to investigate their effects upon cognitive assessments of message coherence and personal feedback as an initial step in explaining how message categorization can be accomplished through the interpersonality research model. We have chosen to focus in the present study on characteristics relating to the message source rather than content, style, or language use characteristics<sup>1</sup>. We anticipate certain source characteristics—specifically whether the sender is known or unknown—will provide relatively potent cues to message receivers in their attempts to categorize CMC messages. Cialdini (2001) proposes that persuasion is supported by six principles, three of which are impacted by knowledge of the message sender (Cialdini, 2001, p. 142).

- *Reciprocity*: The sense of obligation when a person receives things from others is enhanced by an existing relationship.

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<sup>1</sup> Persuasive effects of other message characteristic categories in CMC are discussed by Wilson (2005).

- *Social proof:* Decisions regarding behavior are based to a significant degree on the behavior and opinions of a person's acquaintances.
- *Liking:* People prefer to say yes to the requests of people they know and like.

These principles suggest that messages from a known sender will enhance the likelihood of persuading the receiver. Within the context of the interpersonality research model, we propose that effects of messages from known and unknown senders will be mediated through a message categorization process in which message coherence and personal feedback are evaluated. We anticipate that messages from a known sender will be evaluated as more relevant to the receiver's situation and more likely to receive feedback response if it is requested, thereby leading to our first hypothesis.

*Hypothesis 1: A CMC message will produce higher assessment of message coherence and personal feedback when portrayed as being sent by a known sender vs. an unknown sender.*

### **Effects of Message Coherence**

Advertising research finds that people are willing to accept unsolicited CMC messages that are relevant to their personal interests, even when message volume is high (Micheau, 2011). This suggests message coherence is an important factor in categorizing CMC messages and in deciding whether to read and act upon requests contained in them. Personal relevance is known to be an important contributor to involvement. Zaichkowsky (1985, p. 342) writes, "In the advertising domain, involvement is manipulated by making the ad 'relevant:' the receiver is personally affected, and hence motivated, to respond to the ad." Thus, we anticipate message coherence will promote message involvement in the present study.

*Hypothesis 2a: Higher assessment of message coherence will predict greater message involvement by the message receiver.*

We also propose that message coherence will directly influence intention to comply as a result of increased understanding of message content and recognition of message arguments that may be anticipated to occur when receivers perceive the message to be relevant to their interests.

*Hypothesis 2b: Higher assessment of message coherence will predict greater intention to comply by the message receiver.*

### **Effects of Personal Feedback**

Prior researchers have not directly studied effects that anticipation of personal feedback may have on message involvement or persuasion outcomes. However, several studies have addressed effects of online interactivity, a related concept in which individuals communicate or otherwise interact with online systems (Kettanurak, Ramamurthy, and Haseman, 2001; Teo et al., 2003). Online interactivity has been found to increase shopping enjoyment (Jiang and Benbasat, 2007) and social presence (Fortin and Dholakia, 2005), suggesting that similar effects may be found for the anticipation of feedback from a human partner. These observations lead us to propose the following exploratory hypotheses.

*Hypothesis 3a: Higher assessment of personal feedback will predict greater message involvement by the message receiver.*

*Hypothesis 3b: Higher assessment of personal feedback will predict greater intention to comply by the message receiver.*

### ***Effects of Message Involvement***

Message involvement improves attitude toward web banner ad messages and increases product purchase consideration (Fortin and Dholakia, 2005), intention to purchase books and greeting cards (Jiang et al., 2010), and intention to use mobile Internet phones (Mills, 2006) and weblogs (Shiau and Luo, 2010). Based on these findings of direct relationships<sup>2</sup> between involvement and a variety of persuasion outcomes related to online messaging, we anticipate finding a similar positive effect on intention to comply with a CMC message request in the present study.

*Hypothesis 4: Higher message involvement will predict greater intention to comply by the message receiver.*

### ***Evaluation of the Interpersonality Model***

Our final hypothesis proposes that prediction of persuasion outcomes can be improved by explicitly accounting for categorization of message interpersonality in modeling cognitive responses to persuasive CMC messages.

*Hypothesis 5: The full interpersonality research model will predict message receivers' intention to comply significantly better than nested models lacking assessment of message interpersonality, i.e., message coherence and personal feedback factors.*

### **Research Method**

We conducted an online survey study that asked participants to evaluate a persuasive text message in one of two versions. Version A asked a participant to imagine the message was sent by his or her favorite professor at the university. Version B presented the message as being sent by a person unknown to the participant with the email address of "bdayo@texts2africa.com" (see Figure 2). After participants viewed the CMC message, they were then asked to rate their perceptions of message coherence, personal feedback, and message involvement, and to rate their intention to comply with the request to donate used textbooks. Administration order of all rating items was individually randomized for each participant. Following administration of rating items, participants' age and gender demographic data were collected and the survey was concluded.

### ***Participants***

Participants were 495 students attending undergraduate business communications and information systems courses at a large university in the Midwest U.S. Gender distribution of participants is 277 males (56%) and 218 females (44%), with average age of 20 years. By voluntarily participating in the study or completing an alternative assignment, participants earned extra course credit.

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<sup>2</sup> We recognize that a substantial literature studies moderating effects of message involvement within a *dual-route* persuasion process, e.g., as proposed in the elaboration likelihood model (Petty and Cacioppo, 1986). Due to scope constraints, we focus on direct effects in the present study.

Received: 11/24/2011 8:23:19 AM  
From: "Your Favorite Professor" In Version A; "bdayo@texts2africa.com" in Version B  
Subject: Need your help

African students need your used textbooks.

Students in African countries like Zambia and Nigeria have little money to pay for college textbooks, and they need your help. When you finish your coursework this semester you can make a big difference in their lives by donating your used textbooks to deserving African students instead of reselling them to book buyers. Textbooks are needed in all subject areas.

Here's how to donate.

First, reply to this message to pledge a donation of one, two, or all your used textbooks. When you are finished using your textbooks for the semester, carefully package them and ship them to:

Texts2Africa  
P.O. Box 43502  
Brooklyn, NY 10024

Our volunteers will be waiting to accept your donation in fulfillment of your pledge.

I look forward to receiving your reply, and really appreciate your help in this good cause.

## **Figure 2. Persuasive Message Treatment**

Students who had signed up to participate in the study were notified to begin via an email message that contained participation instructions and a hyperlink to access the online survey study. The survey was available for completion during a period of one week following notification, and participants who had not completed the survey after five days were sent a follow-up reminder message via email. A total of 522 students signed up to participate, and the study dataset comprises responses from the 495 (95%) who completed the entire survey.

### **Measures**

All measurement items were adopted from previously validated instruments, and constructs are considered to be reflective. Message coherence, anticipated feedback, and intention to comply scales used items developed by (Anonymized). Message involvement items were drawn from the personal involvement inventory (PII) scale (Zaichkowsky, 1985, 1994), which has been carefully validated (Flynn and Goldsmith, 1993), has been used extensively in persuasion research (Beardon, Netmeyer, and Mobley, 1993), and has been applied recently to study persuasive messages in online contexts (Jiang et al., 2010; Micheau, 2011). All responses were collected on seven-point semantic differential scales. Measures are shown as part of Table 3.

### **Results**

Analysis began by conducting checks of measures and treatment manipulation. We subsequently proceeded to assess measurement and structural models and to conduct hypothesis tests.

### **Measure Checks**

Measures were checked in two ways prior to conducting our analysis. First, we assessed the factor structure of the PII scale. Zaichkowsky (1994) proposes that the PII comprises both affective and cognitive components. This proposition has been validated in some subsequent studies (e.g., Fortin and Dholakia, 2005; Jiang et al., 2010), however, others apply the PII as a unitary measure (e.g., McMillan, Hwang, and Lee, 2003; Micheaux, 2011). We entered the 10 items comprising the complete PII scale into SPSS 17 exploratory factor analysis (EFA) using principal components extraction. Only a single factor emerged when extraction was based on identifying factors with eigenvalues greater than 1.0, and the proposed affective and cognitive subscale structure failed to emerge when extraction was constrained to two factors. The PII scale shows good internal consistency, with Chronbach's alpha calculated as .94, suggesting it is appropriate to treat PII as a unitary scale for subsequent analysis.

Second, we conducted a further EFA in SPSS to assess whether items in the message coherence, anticipated feedback, and PII scales represent distinct underlying constructs. Our objective in conducting this second check was to avoid or mitigate problems that might emerge due to multicollinearity during subsequent analysis. We note, in particular, that message coherence and message involvement are both known to be associated with the personal relevance of the message. Zaichkowsky (1986, pp. 4-5) writes:

In product class research, the concern is with the ‘relevance’ of the product to the needs and values of the consumer and hence interest for product information. In purchase decision research the concern is that the decision is ‘relevant,’ and hence the consumer will be motivated to make a careful purchase decision. Although each is a different domain of research, some parallelism is found between involvement and personal relevance.

The EFA utilized principal components extraction constrained to three factors. We found several instances of cross-loading between the message coherence and PII scales. These were resolved by pruning one item from the message coherence scale and five items from the PII scale.

### **Manipulation Check**

Descriptive statistics were calculated for combined treatments and for each message treatment group (known sender vs. unknown sender). For each participant, average values were created for all scale measures by summing the raw data and dividing by the number of items in the scale. These average values were used to calculate the results presented Table 1, but were not used in subsequent PLS analysis. No differences were found between treatment groups on gender proportion or age. Values for message coherence, anticipated feedback, involvement, and intention to comply scales were significantly lower in the unknown sender treatment than in the known treatment, suggesting that message treatment was successfully manipulated.

### **PLS Analysis**

WarpPLS version 3.0 Kock (2012a) was selected for analysis in order to account for the presence of significant skewness and kurtosis throughout our dataset (see Table 1). PLS analysis does not require variables to be normally distributed, unlike multiple regression and most covariance-based structural equation modeling methods (Chin, 1998). In addition, WarpPLS is capable of detecting and modeling non-linear relationships in the form of “U” and “S” curves, which are encountered frequently in cognitive and behavioral research (Kock, 2012a).

<b>Table 1. Descriptive Statistics</b>						
Survey Item	Combined Treatments Mean (SD)	Ratio of Skewness / Std Error	Ratio of Kurtosis / Std Error	Known Sender Mean (SD)	Unknown Sender Mean (SD)	Between Groups Sig.**
Number of Subjects	495	—	—	247	248	—
Gender	56% Male	—	—	59% Male	53% Male	p > .050
Age	20.2 (3.35)	26.54*	88.15*	20.4 (3.8)	20.1 (2.8)	p > .050
Message Coherence	3.86 (1.50)	-0.63	-2.47*	4.21 (1.38)	3.51 (1.53)	p < .001
Personal Feedback	6.01 (1.10)	-10.72*	5.08	5.21 (1.39)	4.13 (1.56)	p < .001
Message Involvement	4.50 (1.45)	-4.27*	-1.39	4.85 (1.33)	4.14 (1.48)	p < .001
Intention to Comply	3.69 (1.82)	-0.25*	-5.35	4.28 (1.71)	3.10 (1.72)	p < .001

\* Significant at p < .05 level

\*\* Gender assessed with Mann-Whitney U test; age and scale measures assessed with one-way ANOVA

### **Assessment of Measurement Model**

We used WarpPLS to calculate combined loadings and cross-loadings of the full model, as shown in Table 2. Convergent validity of measures was assessed by calculating Chronbach's alpha and composite reliability (see Table 3). Chronbach's alpha and composite reliability were .83 and .90 or greater for each measure respectively, substantially exceeding the .70 criterion proposed by Hair et al. (2009).

Discriminant validity was assessed through analysis of Average Variance Extracted (AVE) calculated using WarpPLS. The AVE for each measure is greater than .50, and the square root of AVE is higher than any correlation with other measures, thus meeting criteria established by Fornell and Larcker (1981).

<b>Table 2. Combined Loadings and Cross-Loadings of Full Model*</b>				
	Message Coherence	Personal Feedback	Message Involvement	Intention to Comply
Message Coherence	<b>0.867</b>			
Personal Feedback	0.402	<b>0.865</b>		
Message Involvement	0.764	0.459	<b>0.820</b>	
Intention to Comply	0.756	0.405	0.693	<b>0.934</b>

\* Square roots of average variances extracted (AVEs) are shown in bold on the diagonal

**Table 3. Combined Loadings and Cross-Loadings of the Full Model\***

Survey Item**	Message Coherence $\alpha = .834^{***}$ CR = .900	Personal Feedback $\alpha = .832$ CR = .899	Message Involvement $\alpha = .877$ CR = .911	Intention to Comply $\alpha = .855$ CR = .932
Coh1: For me, this message is: (1 = A Misfit / 7 = A Good Fit)	<b>0.885</b>	0.103	0.088	0.238
Coh2: This message has personal relevance to me (1 = Strongly Disagree / 7 = Strongly Agree)	<b>0.848</b>	-0.064	-0.142	-0.185
Coh3: This message fits with my interests (1 = Strongly Disagree / 7 = Strongly Agree)	<b>0.867</b>	-0.042	0.049	-0.061
FB1: If I replied to this message, my reply would be read (1 = Strongly Disagree / 7 = Strongly Agree)	0.017	<b>0.863</b>	0.042	0.013
FB2: If I replied to this message, the person who sent it would read my reply (1 = Strongly Disagree / 7 = Strongly Agree)	-0.003	<b>0.873</b>	-0.035	-0.003
FB3: If I replied to this message to ask a question, someone would respond to answer my question (1 = Strongly Disagree / 7 = Strongly Agree)	-0.014	<b>0.858</b>	-0.007	-0.010
Inv1: My feeling is that this message is: (1 = Unimportant / 7 = Important)	-0.131	-0.007	<b>0.830</b>	0.191
Inv2: My feeling is that this message is: (1 = Irrelevant / 7 = Relevant)	0.159	-0.056	<b>0.851</b>	-0.122
Inv3: My feeling is that this message is: (1 = Unappealing / 7 = Appealing)	0.071	-0.033	<b>0.882</b>	0.118
Inv4: My feeling is that this message is: (1 = Mundane / 7 = Fascinating)	-0.054	-0.016	<b>0.816</b>	0.047
Inv5: My feeling is that this message is: (1 = Uninvolving / 7 = Involving)	-0.064	0.134	<b>0.713</b>	-0.276
Int1: How likely is it you would comply with the request made in the 'Need your help' email message? (1 = Very Unlikely / 7 = Very Likely)	0.055	-0.001	0.027	<b>0.934</b>
Int2: If I actually received the 'Need your help' email message, I would do what it requests (1 = Strongly Disagree / 7 = Strongly Agree)	-0.055	0.001	-0.027	<b>0.934</b>

\* Warp PLS oblique rotation

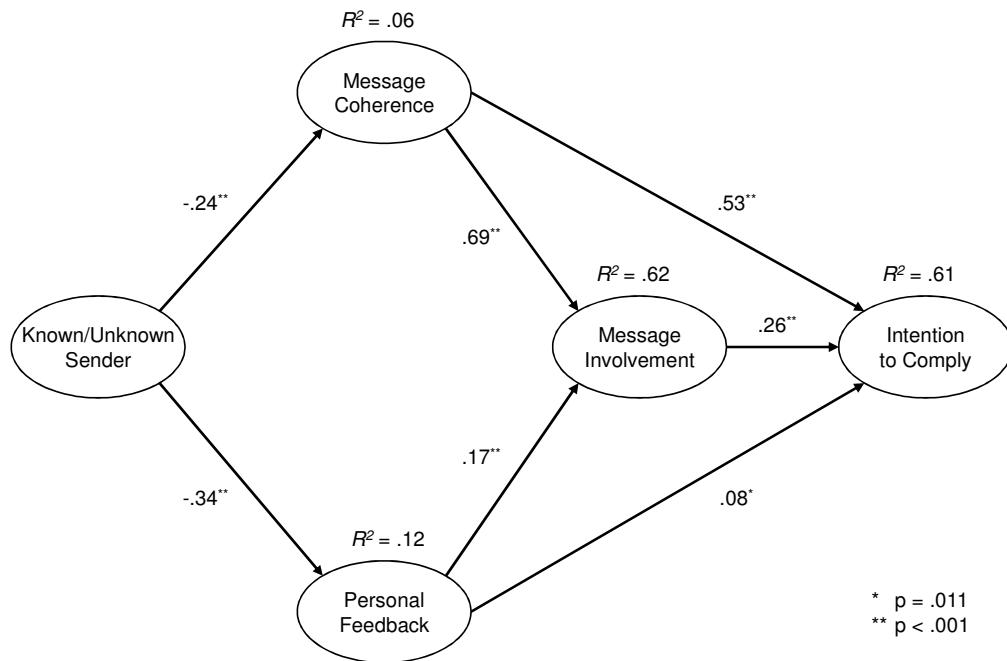
\*\* All survey items are measured on seven-position semantic differential scales end marked with labels shown in parentheses

\*\*\* Chronbach's alpha ( $\alpha$ ) and composite reliability (CR) are reported for bolded items in each column

Confirmatory factor analysis (CFA) conducted via WarpPLS shows no large crossloadings occur between measurement items and unintended measures across message coherence, personal feedback, message involvement, and intention to comply measures (see Table 3). Results of CFA support the assumption of construct validity in the measurement model (Straub et al., 2004).

### **Assessment of Structural Model**

The interpersonality research model was tested using WarpPLS, with results shown in Figure 3. All measures in the model were assessed as reflective latent factors except for the antecedent Known/Unknown Sender which is a binary value corresponding to treatment condition.



**Figure 3. PLS Analysis of the Interpersonality Research Model**

Prior to testing the structural model, moderating effects of known/unknown sender were tested on all relationships among message coherence, personal feedback, message involvement, and intention to comply. None of these moderating effects was found to be significant.

### **Hypothesis Tests**

Hypotheses 1-4 addressed specific relationships within the interpersonality research model. Hypothesis 5 compares the full model to nested models.

**H1: Effects of Message Characteristics** - Message treatments in this study were manipulated to compare responses to the same message purported to be from a known sender (“your favorite University professor”, coded as value 1) or an unknown sender (“bdayo@texts2africa.com”, coded as value 2). As shown in Figure 3, unknown sender has significant negative effects on message coherence and personal feedback, indicating that participants evaluated these two factors in assessing the message and supporting Hypothesis 1. Two additional tests were applied to assess the importance of message coherence and personal feedback as mediators of message characteristics effects. First, a direct relationship was added between Known/Unknown Sender

and Message Involvement in the model shown in Figure 3. The path weight for that relationship was not significant within the model. Second, a new model was created in which only a direct relationship between Known/Unknown Sender and Intention to Comply was tested. A significant path weight was found for this relationship ( $\beta = -.325$ ,  $p < .001$ ), however, the variance in Intention to Comply that was predicted by this reduced model ( $R^2 = .11$ ) is quite low compared with the mediated models tested in Table 4. These tests indicate that message characteristics effects were fully mediated through the research model and that these effects are numerically smaller than those accounted for by including message coherence and personal feedback factors.

*H2a and H2b: Effects of Message Coherence* - Assessments of message coherence significantly increase both message involvement and intention to comply. Hypotheses 2a and 2b are supported.

*H3a and H3b: Effects of Personal Feedback* - Assessments of personal feedback significantly increase both message involvement and intention to comply. Hypotheses 3a and 3b are supported.

*H4: Effects of Involvement on Persuasion Outcomes* - Higher message involvement increases intention to comply, supporting Hypothesis 4.

*H5: Evaluation of the Interpersonality Model* – This hypothesis contrasts predictions of the full interpersonality research model with nested models. To test Hypothesis 5, WarpPLS was used to run the full model and models containing all nested combinations of message coherence, personal feedback, and message involvement (see Table 4). The full model was compared to nested models in two ways.

<b>Table 4. Prediction of Intention to Comply: Full vs. Nested Models*</b>							
Relationship	Full**	Coh+Inv	Coh+FB	Coh	Inv+FB	Inv	FB
Inv → Intention to Comply	0.260	0.289	—	—	0.692	0.692	—
Coh → Intention to Comply	0.528	0.537	0.709	0.758	—	—	—
FB → Intention to Comply	0.078	—	0.125	—	0.111	—	0.407
Intention to Comply $R^2$ predicted in the model	0.614	0.610	0.588	0.575	0.500	0.490	0.166
$R^2$ deviation from Full Model	—	-0.004	-0.026	-0.039	-0.114	-0.124	-0.448
Significance of $R^2$ deviation	—	0.013	0.000	0.000	0.000	0.000	0.000
Effect size of $R^2$ Deviation ( $f^2$ )	—	0.010	0.063	0.092	0.228	0.250	0.537
Average Path Coefficient (APC)	0.289	0.413	0.417	0.758	0.380	0.700	0.407
Average R-Squared (ARS)	0.614	0.610	0.588	0.575	0.500	0.490	0.166
Average VIF (AVIF)	2.098	2.418	1.188	1.000	1.261	1.000	1.000

\* Models are arranged in decreasing order of Intention to Comply  $R^2$  value

\*\* Full = Full Model; Coh = Message Coherence; FB = Personal Feedback; Inv = Message Involvement

First, total predicted variance ( $R^2$ ) of intention to comply was compared between the full model and each nested model using F-tests that control for different numbers of variables in each model (Subramani, 2004). Predicted variance in the full model was significantly better than in any nested model, predicting 61% of variance in intention to comply vs. 49% for a model lacking

message coherence and personal feedback. Of the nested models comprising a single factor, message coherence predicted significantly greater variance in intention to comply (58%) than did message involvement (49%) or personal feedback (17%).

Second, average path coefficient (APC) and average R-squared (ARS) statistics calculated by WarpPLS were applied to compare fit among model. This process is described in the WarpPLS 3.0 User Manual as follows:

“Typically the addition of new latent variables into a model will increase the ARS, even if those latent variables are weakly associated with the existing latent variables in the model. However, that will generally lead to a decrease in the APC, since the path coefficients associated with the new latent variables will be low. Thus, the APC and ARS will counterbalance each other, and will only increase together if the latent variables that are added to the model enhance the overall predictive and explanatory quality of the model.” (Kock, 2012b, p. 23)

Although the full model presents the highest ARS value (.61), APC for the full model is low (.29). The single-factor message coherence model presents the highest numeric combination of ARS (.575) and APC (.758).

These results support Hypothesis 5, indicating that the full model does provide superior predictions of intention to comply. However, model fit of the full model is numerically inferior to several of the nested models due to weak contributions by some factors in the full model.

## Discussion

The findings of our research indicate that people do evaluate message coherence and personal feedback of CMC messages within a categorization process that predicts message involvement and intention to comply. These findings have important implications for research and practice.

### ***Implications for Research***

The interpersonality model provides a fundamentally different explanation of online persuasion than has previously been proposed. It proposes that messages are cognitively categorized by receivers to assess interpersonality based upon factors that definitionally distinguish between interpersonal and broadcast persuasion. Where we anticipated that message coherence and personal feedback would help to explain development of message involvement, we find these joint factors are substantially *better* predictors than message involvement of intention to comply with a CMC request message ( $R^2 = .59$  vs.  $R^2 = .49$ ). This suggests interpersonality could be more important in explaining and predicting persuasion outcomes than is involvement, which has been applied in a wide array of online contexts, including web banner ads (Fortin and Dholakia, 2005), weblogs (Shiau and Luo, 2010), mobile Internet phones (Mills, 2006), and online retail sales (Jiang et al., 2010).

The interpersonality research model we developed fared well through initial testing, yet the tests generated a number of questions that only can be addressed through future research. Although our decision to study interpersonality within the context of message involvement “direct-effects” research proved successful, it will be especially important to assess the interpersonality model within dual-route theories (e.g., Petty and Cacioppo, 1986). In addition, predictions based on message coherence and personal feedback should be contrasted to other antecedents of persuasion outcomes that have been identified by CMC researchers. These include *social*

*presence* (Campbell, Wright, and Clay, 2010), *flow* (Animesh et al., 2011), and *interactivity* (Jiang et al., 2010).

It also will be important to study the relative importance of message coherence and personal feedback within the model. Although significant, the effects of personal feedback were modest in the present study. However, we anticipate that personal feedback could gain importance in determining message involvement and intention to comply, for example, in cases where the request or circumstances surrounding the request are vague or ambiguous. In addition, we note that personal feedback was substantially more sensitive than message coherence to the known/unknown sender message characteristic we implemented as a treatment. This sensitivity supports the idea that personal feedback is a key component in categorization of interpersonality.

We believe that CMC message characteristics related to content, style, and language use and aspects of the message source other than known/unknown sender may be important in categorizing interpersonality. Wilson (2005) established that visual displays (a message style characteristic) and conforming language (a language use characteristic) increase attitude toward CMC messages, however, it is not known what role interpersonality may play in mediating these effects. Further research will be essential to clarify effects of message characteristics within the interpersonality model.

### ***Implications for Practice***

The practical impact of the findings is to provide an alternate means for evaluating the design of online communications. Our findings demonstrate that CMC users are very sensitive to message coherence and personal feedback aspects of a message, with the simple difference between known vs. unknown sender accounting for  $R^2$  of 6% and 12% respectively in these factors. This suggests that designing online communications to enhance interpersonality can be important in increasing receivers' involvement and compliance not only in commercial communication, such as online advertising, but also in social, educational, governmental, and health-related communication.

### ***Limitations***

The major limitations of this study accrue from the participant population that was studied and the specific message treatments that were used. U.S. undergraduate students use CMC regularly, however, their patterns of usage may not be generalizable to the wider U.S. population or to CMC users outside the U.S. In addition, the "Texts2Africa" message treatment that was designed to have relevance to the U.S. undergraduate student population may have limited generalizability to other contexts.

### ***Conclusion***

This study was predicated on the observation that in CMC the nature of the message sender is often more ambiguous than in media that support primarily interpersonal or broadcast communication. Prior research showed that people strongly desire to avoid unwanted spam messages and that people cognitively categorize messages to determine whether they are advertising or not. Our insight in developing the present study was to hypothesize that receivers of more general CMC messages conduct a similar categorization process to identify messages as interpersonal or broadcast based upon the qualities of message coherence and personal feedback that definitionally distinguish between the two modes of communication.

## References

- Abele, S. 2011. "Social Interaction in Cyberspace: Social Construction with few constraints," In Z. Birchmeier, B. Dietz-Uhler, and G. Stasser (Eds.), *Strategic Uses of Social Technology: An Interactive Perspective of Social Psychology*, New York: Cambridge University Press, pp. 84-107.
- Animesh, A., Pinsonneault, A., Yang, S., and Oh, W. (2011). "An Odyssey into Virtual Worlds: Exploring the Impacts of Technological and Spatial Environments on Intention to Purchase Virtual Products," *MIS Quarterly*, (35:3), pp. 789-810.
- Anonymized. "Developing and Validating Feedback and Coherence Measures in Computer-mediated Communication," *Anonymized authors' manuscript currently under review for journal publication*.
- Beardon, W. O., Netmeyer, R. G., and Mobley, M. F. 1993. *Handbook of Marketing Scales*, Newbury Park, CA: Sage.
- Burgoon, J. K ., Guerrero, L. K., and Floyd, K. 2010. *Nonverbal Communication*. Boston: Allyn & Bacon
- Campbell, D. E., Wright, R. T., and Clay, P. F. 2010. "Deconstructing and Operationalizing Interactivity: An Online Advertising Perspective," *Journal of Information Technology Theory and Application* (11:4), pp. 29-53.
- Chin, W.W. 1998. "The Partial Least Squares Approach to Structural Equation Modeling," In Marcoulides, G.A. (Ed.), *Modern Methods for Business Research*, Mahwah, NJ: Lawrence Erlbaum Associates, pp. 1295–1336.
- Cialdini, R. B. 2001. *Influence: Science and Practice* (4th ed.). Boston: Allyn & Bacon.
- Devito, J. A. 2010. "Interpersonal Messages: Communication and Relationship (2nd Edition)," Boston, MA: Allyn & Bacon.
- Ducoffe, R. H. 1995. "How Consumers Assess the Value of Advertising," *Journal of Current Issues and Research in Advertising* (17:1), pp. 1-18.
- Ducoffe, R. H. 1996. "Advertising Value and Advertising on the Web," *Journal of Advertising Research* (36:5), pp. 21-35.
- Ducoffe, R. H., and Curlo, E. 2000. "Advertising Value and Advertising Processing," *Journal of Marketing Communication*, (6:4), pp. 247-262.
- eHow.com 2012. "How to Identify Email Spam," [http://www.ehow.com/how\\_2003326\\_identify-email-spam.html](http://www.ehow.com/how_2003326_identify-email-spam.html)
- Elron, E., and Vigoda-Gadot, E. 2006. "Influence and Political Processes in Cyberspace: The Case of Global Virtual Teams," *International Journal of Cross-Cultural Management* (6:3), pp. 295–317.
- Flynn, L.R., and Goldsmith, R.E. 1993. "Application of the Personal Involvement Inventory in Marketing," *Psychology & Marketing* (10), pp. 357-366.
- Fornell, C., and Larcker, D. F. 1981. "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error," *Journal of Marketing Research* (18:1), pp. 39-50.
- Fortin, D. R., and Dholakia, R. R. 2005. "Interactivity and Vividness Effects on Social Presence and Involvement with a Web-based Advertisement," *Journal of Business Research* (58), pp. 387-396.
- Grimes, G. A., Hough, M. G., and Signorella, M. L 2007. "Email End Users and Spam: Relationship of Gender and Age Group to Attitudes and Actions," *Computers in Human Behavior*, 23, pp. 318-332.

- Hair, J.F., Black, W.C., Babin, B.J., and Anderson, R.E. 2009. *Multivariate Data Analysis*. Upper Saddle River, NJ: Prentice Hall.
- Hill, K., and Monk, A. F. 2000. "Electronic Mail Versus Printed Text: The Effects on Recipients," *Interacting with Computers* (13), pp. 253-263.
- Hollingshead, A. B., McGrath, G. E., and O'Connor, K. M. 1993. "Group Task Performance and Communication Technology: A Longitudinal Study of Computer-Mediated Versus Face-to-Face Work Groups," *Small Group Research* (24:3), pp. 307-333.
- Janneck, M., and Staar, H. 2011. "Playing Virtual Power Games: Micro-political Processes in Inter-organizational Networks," *International Journal of Social and Organizational Dynamics in Information Technology* (1:2), pp. 46-66.
- Jiang, Z. and Benbasat, I. 2007. "Investigating the Influence of the Functional Mechanisms of Online Product Presentations," *Information Systems Research* (18:4), pp. 454-470.
- Jiang, Z., Chan, J., Tan, B. C. Y, and Chua, W. S. 2010. "Effects of Interactivity on Website Involvement and Purchase Intention," *Journal of the Association for Information Systems*, (11:1), pp. 34-59.
- Kettanurak, V. N., Ramamurthy, K., Haseman, W. D. 2001. "User Attitude as a Mediator of Learning Performance Improvement in an Interactive Multimedia Environment: An Empirical Investigation of the Degree of Interactivity and Learning Styles," *International Journal of Human-Computer Studies* (54:4), pp. 541-583.
- Kock, N. 2012a. *WarpPLS*, <http://www.scriptwarp.com/warppls/>
- Kock, N. 2012b. *WarpPLS 3.0 User Manual*. Laredo, TX: ScriptWarp Systems.
- McMillan, S. J., Hwang, J. S. and Lee, G. 2003. "Effects of Structural and Perceptual Factors on Attitudes Toward the Website," *Journal of Advertising Research* (43), pp. 400-409.
- Micheaux, A. L. 2011. "Managing E-mail Advertising Frequency from the Consumer Perspective," *Journal of Advertising* (40:4), pp. 45-65.
- Mills, A. M. 2006. "Understanding Involvement in Technology Adoption," In *ACIS 2006 Proceedings*, paper 78. <http://aisel.aisnet.org/acis2006/78>
- O'Keefe, D. J. 1990. *Persuasion: Theory and Research*. Newbury Park, CA: Sage.
- Perloff, R. M. 1993. *The Dynamics of Persuasion*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Petty, R. E., and Cacioppo, J. T. 1986. *Communication and Persuasion: Central and Peripheral Routes to Attitude Change*, New York: Springer-Verlag.
- Podsakoff, P. M., Mackenzie, S. B., Lee, J. Y., and Podsakoff, N. P. 2003. "Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies," *Journal of Applied Psychology* (88:5), October, pp. 879-903.
- Podsakoff, P.M., and Organ, D.W. 1986. "Self-reports in Organizational Research: Problems and Prospects," *Journal of Management* (12:4), Winter, pp. 531-544.
- Reardon, K. K. 1991. *Persuasion in Practice*, Newbury Park, CA: Sage.
- Reardon, K. K., and Rogers, E. M. 1988. "Interpersonal Versus Mass Media Communication: A False Dichotomy," *Human Communication Research* (15:2), pp. 284-303.
- Shiau, W. and Luo, M. M. 2010. "Continuance Intention of Blog Users: The Impact of Perceived Enjoyment and User Involvement," In *PACIS 2010 Proceedings*. Paper 85. <http://aisel.aisnet.org/pacis2010/85>
- Subramani, M. 2004. "How do Suppliers Benefit from Information Technology Use in Supply Chain Relationships?", *MIS Quarterly* (28:1), pp. 45-73.

- Teo, H., Oh, L., Liu, C., and Wei, K. 2003. "An Empirical Study of the Effects of Interactivity on Web User Attitude," *International Journal of Human-Computer Studies* (58), pp. 281–305.
- Wilson, E. V. 2003. "Perceived Effectiveness of Interpersonal Persuasion Strategies in Computer-mediated Communication," *Computers in Human Behavior* (19:5), pp. 537–552.
- Wilson, E. V. 2005. "Persuasive Effects of System Features in Computer-mediated Communication" *Journal of Organizational Computing and Electronic Commerce* (15:2), pp. 161-184.
- Wilson, E. V., and Lu, Y. 2008. "A Communication Goals Model of Compliance-gaining in Computer-mediated Communication," *Computers in Human Behavior* (24), pp. 2554-2577.
- Zaichkowsky, J. L. 1985. "Measuring the Involvement Construct," *Journal of Consumer Research* (12), pp. 341-352.
- Zaichkowsky, J. L. 1986. "Conceptualizing Involvement," *Journal of Advertising* (15: 2), pp. 4-14.
- Zaichkowsky, J. L. 1994. "The Personal Involvement Inventory: Reduction, Revision, and Application to Advertising," *Journal of Advertising* (23:4), pp. 59-70.