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Online Persuasion and Compliance:

Social Influence on the Internet and Beyond

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A colleague of ours once tried to count the number of influence appeals he received throughout a single day. Between the television commercials, t-shirt slogans, bumper stickers, telemarketing solicitations, radio ads, billboards, magazine and newspaper ads, and requests from colleagues, friends, and family, he very quickly counted over 500 in less than an hour! The Internet, having been adopted for both personal and business use, has quickly become yet another channel for influence appeals. We now find advertisements in our email inbox (also called "junk mail" or "SPAM"); and banner ads on web pages and "pop-up" ads appear throughout our web surfing adventures. We also receive instant messages from strangers imploring us to visit their websites. Sometimes misleading advertisements appear telling us that there is something wrong with our computer when in fact it is really a ploy to get us to purchase the software being surreptitiously advertised. Corporations offer us free software as long as we agree to be direct marketed through ads embedded in the software. Additionally, colleagues, friends, and family use the Internet as a means to communicate influence appeals. Thus, this new communications channel has become yet another way for people to attempt to influence us.

Just as influence practitioners, novice and professional alike, have moved into this area, so have the researchers. Social scientists have been studying the impact of the Internet on social behavior across a variety of contexts ranging from the formation of romantic relationships and friendships with strangers without the barrier of geographic distance (e.g., McKenna, Green, & Glason, 2002) to the consumption habits of online shoppers (e.g., Iacobucci, 2003) to decision-making in computer-mediated groups (e.g., Kiesler, Siegel, & McGuire, 1984). Additionally, the authors of this chapter have been involved in examining the impact of this new primarily text-

based communication modality on the interpersonal persuasion process (Guadagno, 2003;

Guadagno & Cialdini, 2002).

Chapter Overview

What has research on computer-mediated persuasion revealed? The purpose of this chapter is

to review the research on social influence on the Internet, primarily via text-based

communications. We will cover the research on social influence – examining both behavior

change and attitude change – in computer-mediated contexts. Our focus will be on empirical

work that has examined the following: (1) text-based interactive influence appeals; (2) web-

based non-interactive influence appeals; and (3) non-text based forms of computer-mediated

influence appeals.

First, we will define some core terms and then review the research on computer-mediated

communication focusing on how it differs from other communication modalities (e.g., face-to-

face interaction). Next, we will briefly review the relevant research on dual process models of

persuasion. A review of the research conducted on persuasion in interactive and non-interactive

computer-based modalities will follow. Then, we will provide an overview of the principles of

influence and the research that has been conducted on compliance in online contexts. A

discussion of the findings on non-text based forms of communication via the Internet (e.g.,

online virtual environments) will follow. We will conclude with limitations of this research and a

discussion of the implications of the research reviewed on future work in this area.

Key Definitions

Social influence, sometimes referred to simply as influence, refers to the change in one's attitudes, behavior, or beliefs due to external pressure that is real or imagined (Cialdini, 2001). We will be focusing on two specific types of influence: persuasion and compliance.

Compliance involves an area of social influence that focuses on change in behavior resulting from a direct request. For instance, if an individual is asked to sign an online petition advocating the continuation of the science fiction television series *Farscape* and agrees to this request, we would say that this individual is complying with this request. Persuasion describes an area of social influence that is focused on the change in a private attitude or belief as a result of receiving a message (Cialdini, 2001). So, for instance, if you read a "Blog" (personal web-based diary or "weblog") entry that contains compelling reasons why the film *Battlefield Earth* is a better science fiction film than *Bladerunner* and your opinion on this topic is changed as a result of reading the arguments, then you have been persuaded.

Additional terms that will appear throughout this chapter describe the individuals involved in an influence attempt. First, influence practitioner, communicator, or agent of influence are terms used to describe the individual who attempts to influence others. For instance, in the example above, the person who made the request to sign the petition to save the TV series is the influence practitioner. Next, the target or target of influence refers to the person who has the influence attempt directed at him/her.

Throughout this chapter, we will use the terms Internet, online, and cyberspace somewhat interchangeably. In all cases, we intend these terms to signify computer-mediated communication involving networked computers. However, it is also important to note that some research that has examined social influence online has been conducted using computers running

Internet applications such as a web browser without actually being connected to the Internet, thus creating a realistic but controlled environment in which to study online behavior.

How Does Computer-Mediated Communication Differ from Other Forms of Communication?

Although people use the Internet for myriad things such as shopping, banking, obtaining information and news, downloading images and computer programs, it is primarily a tool for communication (Kraut, Mukhopadhyay, Szczypula, Kiesler, & Scherlis, 1998). This fairly new communication technology is widely used and has a huge impact on the nature of our interactions with others. However, the nature of the interactions may be very different from that of the interactions we have with others via more traditional communications technologies.

McKenna and Bargh (2000) suggest that there are four novel and important aspects of online interactions. First, the Internet allows for greater anonymity. In cyberspace, we can meet new people but readily visible characteristics, such as our appearance, are not our most salient feature. Individuals may choose what others know about them – name, age, appearance, sex, and many other pieces of information can be concealed or revealed at will. For instance, if an individual chooses to call herself "JellyBean" in her online interactions, and reveal nothing else, she can be just about completely anonymous. Conversely, our professional email addresses convey our full names, our place of work, and if one reads our email signatures, one would know quite a bit about us, thus making us perhaps even less anonymous than over the telephone. The ability to be completely anonymous while in cyberspace has been related to a decrease in self-focus on internal standards for behavior (Matheson & Zanna, 1989). This may explain why individuals are far more likely to engage in non-normative behavior, such as "flaming" or making rude or derogatory statements to others, when in a computer-mediated interaction than in a face-to-face interaction (Siegel, Dubrovsky, Kiesler, & McGuire, 1986).

Social category salience such as one's group membership (e.g., sex, ethnic group, university affiliation) has been demonstrated to impact the kind of behavior exhibited during anonymous computer-mediated communication. For instance, if an individual's social category is made salient by a username (e.g., such as "101Female") in an anonymous computer-mediated interaction, that individual is likely to exhibit behavior consistent with normative expectations for the behavior based on that social category (e.g., "101Female" may act more feminine in that specific context as opposed to other online contexts). For further information on this topic, we recommend an examination of the work of Postmes, Spears, and Lea (1998) on the SIDE (social identity model of deindividuation effects) model.

In addition to anonymity, McKenna and Bargh (2000) presented three other factors that make Internet-based communication different from other forms of communication. First, as we alluded to above, owing to the text-based nature of the typical online interaction, physical appearance is far less important than in face-to-face forms of communication. This aspect of online interaction is important for this is the dominant communication modality that allows us to meet people in the comfort of our own home with no concern about differential treatment owing to our physical appearance. Second, physical distance is no longer a barrier for interacting with others. Thus, our accessibility to new friends and colleagues is broader than before the advent of the Internet. Individuals can find others with similar interests with great ease. All one has to do is find the online community that best caters to his or her interests and similar others will be found. And the variety is such that online communities range widely from Beanie Baby collectors to Star Trek fans to individuals seeking social support due to an abusive romantic relationship to individuals looking for advice, information, and support for their diabetic cat. Finally, individuals have greater control over the time and place of interactions. This experience is by and large

empowering for the Internet user, but can sometimes be the exact opposite as the line between work and home life blur due to the ubiquity of the Internet.

Another aspect that makes online interactions different from interactions in visual and auditory modalities is the absence of available social cues, such as eye contact or voice tone. Although as we mention above, in some contexts, social category salience impacts behavior in online contexts, other research indicates that certain cues that may accompany a communication in other modalities are far less salient in computer-mediated communication.

For instance, Dubrovsky, Kiesler, and Sethna (1991) reported that status and expertise cues were less salient and had less of an impact on behavior in a computer-mediated interaction as compared to an analogous face-to-face interaction. Others have also found liking for a communicator to be linked to persuasion in face-to-face influence appeals but not in analogous online appeals (Guadagno & Cialdini, 2002; Matheson & Zanna, 1989). This decreased salience of social cues associated with an online communication suggests that communicator cues, such as liking and expertise, may be less important in a computer-mediated influence appeal as compared to a face-to-face appeal. We will have more to say about this later on in this chapter.

What Factors Impact the Persuasion Process?

Persuasion researchers have proposed Dual Process Models of Persuasion--that there are two primary ways in which individuals process information (Chaiken, Wood, & Eagly, 1996; Petty & Cacioppo, 1984). Individuals either process information centrally (also called systematic processing) or peripherally (also called heuristic processing). In the case of central route persuasion, individuals focus on the content of the message and make decisions as to their attitude on the topic based on factors such as the quality of the argument. Individuals are more likely to engage in central route persuasion if the topic is of importance to them, they have the

cognitive resources available to process the message, they know something about the topic, and the arguments are written (Chaiken, et al., 1996; Petty & Cacioppo, 1984).

Conversely, an individual who engages in peripheral route persuasion is likely to use decision cues or rules of thumb, also called heuristics, to make decisions about their attitude on the topic. For instance, a person engaging in peripheral route persuasion may be more swayed by the quantity of the persuasive arguments rather than the quality or may make a decision based on the perceived credibility of the influence agent rather than the veracity of his/her statements. People are most likely to engage in this type of message processing when the topic is of little relevance to them, they do not have the ability to process the message, the communication mode is one in which the influence agent is salient, and they know very little about the topic (Chaiken, et al., 1996; Petty & Cacioppo, 1984). Although individuals tend to process persuasive messages using either the central or peripheral route depending on the features of the influence attempt, we do not mean to say that message processing will always be entirely central or entirely peripheral -- individuals will engage in both types of message processing under certain circumstances.

In an early attempt to examine persuasion in different communication modalities, Chaiken and Eagly (1983) examined the impact of the likeability of the communicator on persuasion in one of three communication modalities: written, videotape, or audiotape. To manipulate the appeal of the influence agent, participants also read a personal statement from the influence agent that portrayed him as a likeable or unlikable individual. When the influence agent was likable, influence targets in both video and audiotape conditions showed greater attitude change than those in the written communication condition. When the influence agent was not likable, attitude change was greatest for targets who received the written communication. These results suggest that in the video and audiotape conditions, the personal cues of the communicator were

salient and participants engaged in heuristic processing of the persuasive message. Conversely, in the written communication condition, where source cues were less salient, participants processed the message systematically. Thus, prior research in this field suggests that computer-mediated influence appeals may be akin to written appeals, in that the cues of the communicator are less salient and targets of influence may therefore be more focused on the characteristics of the message content than the message source when determining their attitude on a topic.

Persuasion Online

In this next section, we will review the research that has been conducted to examine the impact of the Internet on the persuasion process. First, we will focus on non-interactive persuasive appeals, then on interpersonal influence attempts.

Non-interactive online persuasion. What may have been the first computer-mediated persuasion study compared written paragraphs to one another, with some participants reading the passage on a computer and some reading it in written form after a face-to-face interaction with other participants (Matheson & Zanna, 1989). The purpose of their study was to examine the impact of self-awareness on persuasion. They predicted that individuals in the computer-mediated communication condition would experience greater private self-awareness (e.g., heightened awareness of internalized personal values) than participants in the face-to-face condition, and that this increased private self-awareness would lead participants in the computer-mediated condition to process the persuasive message systematically. They also predicted that participants in the face-to-face condition would engage in heuristic processing of the persuasive message and therefore would experience more attitude change if the message was presented by a likeable source.

Participants completed several tasks. In the face-to-face condition, participants each wrote a short paragraph on an assigned topic with paper and pencil. Next, they completed two decision-making problems with a partner. Finally, they read a persuasive communication printed on paper. Participants in the computer-mediated condition typed the paragraph on the computer, completed the decision-making problems via computer, and read the persuasive communication on the computer. After they read the persuasive communication, participants in both communication conditions filled out an attitude measure and a measure of private and public self-awareness. They defined private self-awareness as personal attitudes, beliefs, and feelings and public self-awareness as a focus on one's awareness of themselves from the view of others including self-presentational concerns.

Results indicated that, although there was no overall difference in attitude change between the online interaction and the face-to-face condition, there were differences in the way in which the persuasive message was processed. For instance, participants in the online interaction condition reported higher levels of private self-awareness than those in the face-to-face condition. Additionally, although the predicted communication modality difference did not occur, the authors did report that social cues had a direct influence on the message reception of the face-to-face condition participants, but not for the computer-mediated condition participants. The authors concluded that this difference in message processing may have been due to their finding that respondents in the computer mediated condition reported greater private self-awareness than face-to-face respondents. Thus, the results of this study suggest that a message received through computer-mediation is more likely to be centrally processed.

In another study on persuasion, this time in a web-based context, Duthler (2001) asked participants to read a series of persuasive statements that varied in argument strength, personal

relevance, and the complexity of the peripheral cues associated with the message. Some participants read strong, well-reasoned arguments endorsing comprehensive exams as a new graduation requirement, while some participants read a set of weak, poorly reasoned arguments advocating the same topic. Personal relevance was manipulated by telling some participants that, if approved, the new graduation requirement would apply to them, thereby making the topic highly relevant to them. Participants in the low-relevance condition were told that, if approved, the exam would not be implemented for 10 years. Finally, complexity of peripheral cues was manipulated by amount of color and graphics in the website. In the low-complexity condition, the website was essentially in black and white, whereas in the high-complexity condition, the website was in color and had several colored graphics.

The results indicated that participants had a more positive attitude toward the comprehensive exam after reading the strong arguments as compared to the weak. However, there was no difference in positivity toward the exam based on whether they were personally relevant. In addition, the website that was high in complexity of peripheral cues (i.e., with full color and graphics) enhanced the attention paid by participants to the persuasive message when the personal relevance was low. The results of this study are comparable to written communication modes in traditional persuasion literature such as the Chaiken and Eagly (1983) study reviewed above, suggesting that when the persuasive attempt is non-interactive (e.g., web-based), participants respond to web-based influence attempts by engaging in a message-focused approach which makes systematic processing more likely.

In a series of studies designed to examine the persuasive impact of online ads, Sagarin, Britt, Heider, Wood, and Lynch (2003) asked participants to solve anagrams on a computer while ads appeared at the edge of the screen throughout their exercise. Across three studies, the results

indicated that these visually peripheral ads were both persuasive and a source of distraction even though participants reported that they were not attending to them.

Overall, the few studies that have been conducted using non-interactive methodologies akin to "SPAM", banner ads, or "pop-up" ads indicate that when there is no interaction between the influence agent and the target of influence, individuals respond in a manner similar to participants from prior studies who have read persuasive communications on paper. There is a tendency toward central processing of the message. Additionally, one implication of the studies reviewed here is that the online ads that frequently disrupt our web surfing actually do have a persuasion effect even when we do not actively attend to them.

Interpersonal persuasion online. What about when individuals use a computer as the mode through which to engage in a persuasive interaction? How is the persuasion process impacted by the features of online communication?

Two studies conducted by Guadagno and Cialdini (2002) examined these questions. In the first study, an influence agent attempted to persuade a same-sex participant in either a face-to-face discussion or via a non-anonymous email discussion. The influence agent presented either strong or weak arguments adopted from Petty, Harkins, and Williams (1980) to persuade research participants that a comprehensive exam as a new graduation requirement was a good idea. As would be expected, the results indicated that the strong arguments were more persuasive than the weak arguments. In addition, there was also an interesting gender effect. Regardless of the strength of the arguments, female participants who discussed the topic via email reported less agreement with the message than did women in the face-to-face condition, whereas there was no communication mode difference for the male participants.

Insert Figure 1 about here

These results were interpreted in terms of gender-based expectations for behavior (Carli, 1989): Female targets were oriented towards forming a bond with the influence agent, whereas male targets were oriented towards the task and maintaining their independence. Because the email condition did not allow for bonding with ease, the female participants were less inclined to change their attitude in the direction expressed by the influence agent. However, this was not the case in the face-to-face discussion condition, which did lend itself to the formation of a bond between the female target and the female influence agent. Because the male targets were focused on maintaining their independence and focused on the task, the communication mode was not relevant to meeting these goals.

In support of this interpretation, Guadagno and Cialdini (2002) reported that participants' ratings of the likeability, knowledge, and trustworthiness of the influence agent were correlated with attitude toward the comprehensive exam only for women in the face-to-face condition. In contrast, men made their decisions based primarily on the arguments. Regardless of communication modality, proximity and personality characteristics of the confederate did not have an impact on their opinions. There was also evidence from the analysis of cognitive responses measured by examining the thoughts that participants recorded during the study that participants in the email condition engaged in central route processing of the message, whereas there was more communicator focus in the face-to-face condition indicating peripheral route processing.

To replicate and extend these findings, Guadagno and Cialdini (2002) conducted a follow-up study in which participants engaged in an interaction with the influence agent prior to the comprehensive exam discussion. This prior interaction was competitive, cooperative, or independent in nature and was always a face to face interaction. Next, half of the participants

received a persuasive message from the influence agent in a face-to-face context while the other half received the same message from the same influence agent via email. The influence agent presented only strong, well-reasoned arguments.

Consistent with predictions, once the female influence target had an opportunity to interact with the female influence agent, the mode of communication did not impact the level of positivity toward the message. Only female participants who had no interaction with the influence agent – those who were in the independent prior interaction condition and who then communicated via email – reported less positivity towards the message. For male participants, only those who competed with the influence agent during the prior interaction and then took part in a face-to-face discussion exhibited less opinion change than men in all other conditions. Thus, for women, it was the lack of social interaction with the communicator (in the independent prior interaction condition) coupled with the lack of social cues (in the email communication condition) that led to the least willingness to adopt the communicator's sound arguments. For men, on the other hand, it was the presence of a competitive social interaction (in the competitive prior interaction condition) coupled with the presence of social cues (in the face-to-face communication condition) that most retarded acceptance of the communicator's position.

Additional research on gender differences in online interaction supports the interpretation of these results. Dennis, Kinney, and Hung (1999) conducted research on gender and interaction in online versus offline contexts and reported that female dyads who completed a decision-making task in a face-to-face discussion made better decisions than did women in a comparable computer-mediated group. Communication mode had less of an impact on performance for mixed-sex and male dyads.

A third study was conducted to further examine these issues. In this study, Guadagno (2003) sought to replicate the basic finding that women report less positivity towards a topic after a persuasive attempt in an email exchange as compared to face-to-face context and to expand on this topic by investigating the extent to which perceived similarity impacts this. Men and women engaged in the same discussion of comprehensive exams with a same-sex influence agent. This time, however, prior to the interaction, participants received feedback as to their similarity with the other individual in terms of their personality and the way they perceived the world. This false feedback was intended to induce a perception of oneness. Oneness refers to a sense of merged or interconnected identity (Cialdini, Brown, Lewis, Luce, & Neuberg, 1997).

Participants received one of three oneness manipulations: High, none, or low. In the high-oneness condition, participants were told that they were so similar to the influence agent that they could be siblings. Participants in the low-oneness condition were given the opposite feedback: They were told that they were so dissimilar from the influence agent that it was unlikely that two people would ever be so different. Finally, in a pair of conditions designed to replicate the findings of the Guadagno and Cialdini (2002) studies, some male and female participants were given no oneness information. As with the second study in Guadagno and Cialdini (2002), only strong arguments were used.

The results indicated that, regardless of communication mode, there was an overall effect for oneness – the higher the level of oneness, the greater the positivity towards the position on the comprehensive exams espoused by the influence agent. Across communication modality and gender, the amount of oneness reported predicted attitude toward the comprehensive exam proposal. Thus, the more the participants felt a sense of merged identity, the more likely they were to change their attitude to match the confederate.

As in the two Guadagno and Cialdini (2002) studies, in the absence of the oneness manipulation, women reported less positivity towards the message in the email condition as compared to the face-to-face condition, while there was no communication mode difference for men. In terms of the oneness conditions, oneness eliminated communication mode difference for women: They either had very positive opinions or very negative opinions depending on the oneness condition, regardless of whether they received the persuasive communication in an email or face-to-face context.

Specifically, across all the female conditions, women in the low-oneness condition, regardless of communication mode, reported the least positivity toward the exam. In the low-oneness condition, the female influence agent was a person from an outgroup, a person so dissimilar that participants did not attempt to cross group boundaries to bond with her. Given that research on adolescent friendships indicates that girls tend to strengthen their friendship groups in part through the exclusion of others (Henrich, Kupermine, Sack, Blatt, & Leadbeater, 2000), it may be that the women in this study chose to reject the influence agent and her message regardless of communication mode because there was no possibility of bringing her into their group.

For males, there was no communication mode difference for high oneness, but there was a difference for low oneness. Similar to Guadagno and Cialdini's (2002) second study, when faced with a face-to-face discussion with someone who they might categorize as a competitor or outgroup member, men reported the least positivity towards the message as compared to any other condition. However, in the low-oneness email condition, the decreased salience of the influence agent appeared to neutralize this effect. Men in this condition reported levels of positivity toward the message that were equivalent to the other oneness conditions. The male

participants may have felt competitive toward the dissimilar other. When he was salient in the face-to-face condition, they rejected his message. However, when he was not present in the same room and the competitive social cues were not salient, they were more open to his arguments delivered by email. There is no doubt that men in this condition did project a competitive orientation onto the confederate: Collapsed across communication modality, men in the low-oneness condition rated the confederate as more competitive than did participants in the no- and high-oneness conditions.

Insert Figure 2 about here

Taken together these studies indicated that, at least in same-sex interactions with strangers, women may have a hard time persuading other women via email unless they are able to discover some sort of similarity or commonality. Whereas, for men, the mode of communication is less important except in the case of a competitor or outgroup member. In this case, men are likely to reject even the sound arguments of such a person in a face-to-face interaction. Fortunately, the decreased salience of the interaction partner's social cues in email appears to alleviate the competitive aspects of the interaction.

The final study on interpersonal, computer-mediated persuasion revealed by our literature review was conducted by Moon (1999). In two studies, Moon compared the impact of response latency (low: 0-1 sec. vs. medium: 5-10 sec. vs. high: 13-18 sec.) defined as the amount of time between sending a message and receiving a response, and perceived distance (several miles away vs. several hundred miles away) on computer-mediated persuasion. Participants filled out a survival task that asked them to rank the importance of items needed to survive in the desert on their own. Then a computer agent tried to persuade them to change their responses. In the first

study, participants were told that they were interacting with another human. In the second study, they were told that they were interacting with a computer program.

The results indicated the medium length response latency was the most persuasive as compared to the low and high latency conditions. Additionally, the close perceived distance condition produced more persuasion than did the far perceived distance condition. Moreover, there was no difference in results based on being told that they were interacting with a real human versus a computer agent. The results of this study indicated that the length of time an individual takes to respond to a message may have a substantial impact on the way his/her message is received. Additionally, although the Internet provides us access to individuals all over the world, there is still an effect for proximity. Indeed, participants also rated the close proximity persuader as being higher in credibility and as providing higher quality information. Finally, these results suggest that the decreased salience of the interaction partner in online interactions is so strong that it does not matter whether the interaction partner is human or a computer program.

Influence Principles Online: Do People Comply?

We now turn our attention away from persuasion in cyberspace and on to compliance online. Cialdini (2001) suggested that many tendencies to comply with another's request can be explained in terms of six fundamental principles of influence: scarcity, reciprocity, consistency/commitment, authority, social validation, and friendship/liking. The principles serve as rules of thumb or decision heuristics (e.g., "rare = valuable") that assist in decision making. Influence agents often use decision heuristics to obtain compliance from their targets (e.g., an influence appeal involving a limited opportunity capitalizes on the "rare = valuable" decision heuristic). Although these principles have been examined broadly across a variety of contexts

and communication modes, we will only focus on those principles that have been examined in computer-mediated contexts.

One important aspect of examining compliance in online interactions is that, although non-verbal cues are not available in online interactions, social category cues are still available and people may respond to influence appeals based on those cues. So, for instance, if the only thing you know about an online interaction partner is that she is a lawyer, you are likely to be more persuaded by her advice on legal matters.

Guégen and Jacob (2002) conducted a study that examined this salience issue and its impact on compliance. In this study, participants were emailed a request to fill out a survey on dietary habits. Half the participants received photographs of the influence agent along with the request. The results revealed that including photographs with the request increased compliance. There were also gender effects. Men were generally more compliant than women. Additionally, both men and women were more likely to comply with the request when the influence agent was female. Thus, in this case, the photographs increased the salience of the communicator and increased compliance, but across the board, men and women responded differently in part based on the social category information of the sex of the influence agent.

Based on our review of the literature, only two of the six principles of influence have been examined empirically in online contexts: authority and commitment/consistency. The remainder of this section of the chapter will examine these principles and their ability to induce compliance online.

Authority online. We all want to make good choices and we frequently choose the course of action to take based on information such as the recommendation of an authority (Cialdini, 2001). Authority figures often influence others in part because they are perceived as experts. This

activates the "believe an expert" decision heuristic. Although some of the literature on online behavior demonstrates a decrease in the transmission of social cues, are people still more likely to comply with the request of an authority figure? On the one hand, being an expert or an authority figure is a social category that can easily be made salient by an email signature or email address. In this case, we would expect that individuals who received an influence appeal from an authority figure to respond much in the same way as they would in a context where the authority figure was more salient. That is, we might expect individuals to be more compliant with an authority figure's request than compared to a low-status requestor. However, when the online context is interactive in nature, will authority cues be salient enough to alter the behavior of others in the group?

In a study designed to examine the impact of expertise and status in computer-mediated and face-to-face decision-making, Dubrovsky, et al. (1991) asked groups comprising of one high-status group member (a graduate student) and three low-status group members (college freshmen) to discuss two topics in either a computer-mediated or a face-to-face interaction. The career choices available to college graduates was the topic in which the graduate student was an expert, while the other was a topic in which the low-status group members were experts.

The results indicated several significant differences between face-to-face and online interaction groups relevant to the transmission of authority cues online. In the face-to-face condition, the graduate student was more likely to be first advocate, to be engaged in greater participation in the discussion, and to have more influence over the ultimate group decision than a low-status first advocate. Thus, the high-status group member successfully maintained the position of authority in the group. However, this was only the case when the high-status group member was also an expert on the topic. In the computer-mediated discussion, status cue effects

were reduced: Both the high-status and low-status participants were equally likely to be the first person in the group to advocate a position on the topic because they were likely to start expressing themselves at the same time, regardless of the high-status member's expertise. Thus, these results support the notion that status and expertise are less salient in the computer-mediated decision groups (Dubrovsky et al., 1991).

What about when it is not a discussion but rather a more traditional attempt to induce compliance? Guégen and Jacob (2002) tested this in a study designed to assess the effectiveness of status in online compliance. In this study, participants were asked to complete a short survey on dietary habits. The request was either from an influence agent who was either high in status (a professor) or low in status (a college student). This study was conducted with an ingroup sample (university students) and an outgroup sample (members of the surrounding community).

For students within the university, nearly all (97.5%) complied with the request from the professor, whereas 65% complied when the influence agent was low in status. Additionally, the latency in response rate (i.e., time taken to return the completed questionnaire) was lower with the high-status influence agent than with the low-status one. With the outgroup sample, compliance was lower in both conditions, but the same pattern of results was reported. Thus, status does appear to serve as a meaningful social category in cyberspace and can translate into higher compliance, particularly when the influence agent is a high-status ingroup member.

Thus, it appears that authority is successful in increasing compliance in online groups when it is used as a decision heuristic, but is far less influential when present in an interactive discussion. However, more studies on this topic need to be conducted before we draw a firm conclusion.

Commitment and consistency online. Another factor that may increase the likely success of an influence attempt is commitment and consistency: whether one has committed oneself to a

similar position in the past. This consistency with prior commitments is a highly successful influence principle because it alters one's self-perception. We often look to our own behavior to understand who we are. However, the outcome of our actions based on self-perception information varies based on the level of internal consistency we desire and the way a request is presented (Guadagno, Asher, Demaine, & Cialdini, 2001).

Although there are several commitment and consistency-based influence tactics, there is only one that has been examined in cyberspace: the foot-in-the-door technique. The foot-in-the-door technique works as follows: First an influence agent asks for something small – usually a minor commitment, such as signing a petition to ban censorship on the Internet. The influence agent then builds upon that small commitment to gain compliance with a second (usually related) larger request, such as spending five hours volunteering with an organization that supports free speech online. Freedman and Fraser (1966) initially investigated the foot-in-the-door technique. They called this tactic the foot-in-the-door technique because the small request is like the proverbial foot that allows a salesperson to get in the door of a potential customer.

Given the way the foot-in-the-door effect operates – that it is primarily a function of a desire for internal consistency – we would expect commitment and consistency-based influence attempts to be successful in online as well as in more traditional communication modes such as the telephone and face-to-face interactions.

The foot-in-the-door has been demonstrated to be effective across multiple computer-mediated contexts. For instance, Guégen (2002) examined the effectiveness of the foot-in-the-door through an email solicitation for assistance. In this study, a (fictitious) university student first asked half the participants for instructions on how to save a document as a rich text file format as the first request. For the second request, which all participants received, the same

requester asked the participants to fill out a 40-item survey on their dietary habits. The results of this study indicated that there was a significant foot-in-the door effect: 76% of participants who had complied with the first request also filled out the dietary habits survey as compared to 44% in the control group. Guégen and Jacob (2001) also demonstrated a significant foot-in-the-door effect using web pages. In this study, participants who were first asked to sign a website petition advocating a humanitarian cause were more likely to read further into the website and click links to other sites than were those who were not asked to sign the petition.

Markey, Wells, and Markey (2001, study 3) also demonstrated the foot-in-the-door's effectiveness in a chat context. In this study, a "novice" Internet user asked for assistance using the chat features as the first request, then asked the target of influence for a second request--an email message to make sure his email program was functioning properly. Although compliance rates were relatively low, there was still a significant foot-in-the-door effect: 16% of participants who first complied with the request for help using the chat features sent the email as compared with only 2% of participants who only received the second request. See Table 1 for a summary of the methodology and results of all three studies reviewed above.

Insert Table 1 about here

Finally Petrova, Cialdini, and Sills (2003) examined the effectiveness of computer-mediated foot-in-the-door cross-culturally. In this study, American-born and Asian international students were first asked to fill out a short online survey, then one month later were asked to fill out a more lengthy similar survey. Interestingly, their results indicated that, although American participants were more likely to refuse the initial request, those who complied showed higher rates of compliance with the subsequent request than did the Asian participants. The authors interpreted these findings in terms of cultural differences: American students are more

individualistic and therefore their internal commitments are centrally important, whereas Asian

students are more collectivistic and their individual internal commitments are less directive

because they define themselves in terms of their group membership rather than their past

behavior.

Thus, overall it appears that the foot-in-the door effect is effective in online contexts as well

as in other communication modalities, presumably because it functions through an individual's

internal consistency motives rather than the salience of the influence agent.

Beyond Text-based Computer-mediated Social Influence

What about when the online communication is *not* text-based? Individuals can also persuade

others via the Internet in graphical formats. There are a wide variety of online role-playing

games (e.g., Everquest) and communities (e. g., the Palace.com) that allow individuals to interact

with others while appearing as a graphical avatar in a virtual world. This increased salience of

the individual in the virtual world may drastically alter the nature of online interpersonal

interactions as compared to traditional text-based computer-mediated communication.

Research on social behavior in virtual worlds is an emerging field. For instance, researchers

have examined personal space in virtual worlds and found that the amount of realism in the

behavior of a virtual human predicts the amount of personal space real humans give it

(Bailenson, Blascovich, Beall, & Loomis, 2003). In terms of social influence, Blascovich (2002)

has proposed a model of social influence in virtual environments which states that the more

realistic the setting and the behavior of the virtual humans, the more influential a virtual other

will be on the behavior of influence targets. Immersive virtual environments also have the

advantage that they allow for both high experimental realism due to the immersive aspect of the

technology, and high experimental control as all participants run through the same exact sequence of events generated by the computer program.

Additionally, research on persuasion in a virtual environment has reported results similar to Guadagno and Cialdini (2002) – in same-sex groups, the extent of social cues transmitted via non-verbal behavior did not impact men's attitude on a topic, but it did for women. Female participants exhibited the most positivity when the communicator was making full eye contact with them as compared to conditions with moderate to low levels of eye contact during the persuasive interaction (Bailenson, Beall, Blascovich, Loomis, & Turk, 2003; Beall, Bailenson, Loomis, Blascovich, & Rex, 2003). This suggests that women may respond differently than men across a variety of computer-mediated contexts.

Conclusions, Limitations, and Recommendations for Future Work

Owing to the dearth of research on influence in cyberspace available to review, much remains to be learned about the nature of online influence. However, there are some conclusions that we can draw. We will also discuss limitations of this review and conclude with recommendations for future research in the area.

Overall, the studies we have reviewed indicate that sometimes online influence attempts function similarly to attempts of the same kind in other contexts and sometimes they do not. Factors that determine this include the nature of the influence attempt, specifically whether it is interactive or static, the amount of prior exposure between the influence agent and target, and whether the influence agent is perceived as a member of the target's ingroup. Influence attempts in cyberspace may operate differently owing to the increased internal focus prevalent in online interactions. So, as a general rule, influence appeals that are mediated by self-focus should

operate similarly in online contexts as more traditional text-based modalities, but others that rely on an interpersonal interaction may function differently in an online interaction.

It also seems evident from some of the research reviewed in this chapter that gender is an important factor, at least in same-sex groups. Future research should examine this issue further to test if these effects are similar with mixed-sex groups. Additional work on this issue should also seek to deepen our understanding of women's seeming discomfort communicating with others via communication modes that limit the transmission of non-verbal cues.

Most of the research reported in this chapter examined strangers interacting once with each other, but this does not reflect what is really occurring in online contexts. Individuals use the Internet primarily to interact with people they know or to establish new relationships. Even comparatively anonymous activities often involve maintaining an ongoing virtual identity. The one-time interaction with a stranger is the exception, not the rule, and researchers should address this.

Additionally, we should mention the research conducted on computer-mediated group influence focusing primarily on decision-making in the form of choice dilemmas that was outside the scope of this review. For more information on this topic, we recommend an examination of the following articles: Kiesler et al. (1984), Lee and Nass (2002), McGuire, Kiesler, and Siegel (1987), Sassenberg and Boos (in press), and Siegel, et al. (1986).

We would also like to point out that there are other models of social influence that have yet to be tested in an online context. Although many of our computer-mediated interactions may take place with co-workers, this review failed to find any research examining online interpersonal influence from the theoretical perspective of organizational researchers (although Thompson and colleagues have conducted several studies on computer-mediated negotiation; e.g., Morris,

Nadler, Kurtzburg, & Thompson, 2002) . Raven's power/interaction model of social influence is one such perspective (Raven 1993; Raven, Schwarzwald, & Koslowsky, 1998). This model proposes that there are different bases of power from which people influence others, depending on their resources the influence agent has to his or her disposal. Thus, it would be interesting to investigate the conditions under which the decreased salience of the influence agent in a computer-mediated interaction could enhance or reduce the effectiveness of a power-based influence appeal.

As the Internet advances in both capacity and reach, the options for online communication will continue to diversify beyond primarily text-based interaction. Researchers should attempt to keep up with the advances in technology, not only to stay abreast of changes in society but for opportunities to study ways people interact in new modalities. For example, we recommend that researchers interested in influence and technology consider examining such behavior in Immersive Virtual Environments in addition to text-based, computer-mediated communication. With the different technologies emerging and the different theoretical perspectives from which to derive hypotheses, this area of research is wide open and sure to yield many interesting findings as our knowledge-base is built.

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Table 1

Summary of the Results of the Online Foot-in-the-Door Studies

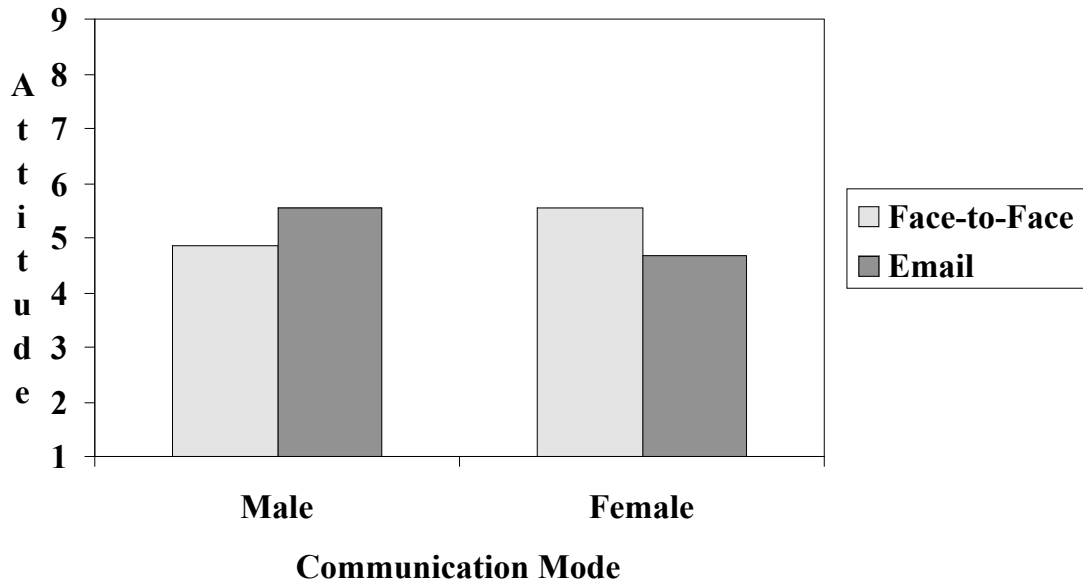| Author(s)	First Request	Second Request	% Compliance to the Second Request	
			FITD Condition	Control Condition
Guégen (2002)	Participants were asked to provide instructions on how to save a file as .RTF	Participants were asked to fill out a 40-item questionnaire on their dietary habits	76%	44%
Guégen & Jacob (2001)	Participants were asked to sign a petition on a web page	Participants' activity on the website (e.g., additional links clicked)	14%	3%
Markey, Wells, & Markey (2001, Study 3)	Participants were asked to provide help to an Internet novice using chat features	Participants were asked to send a test email to the novice check	16%	2%

Figure 1: Gender by communication interaction on the attitude measure in Study 1 (Guadagno &
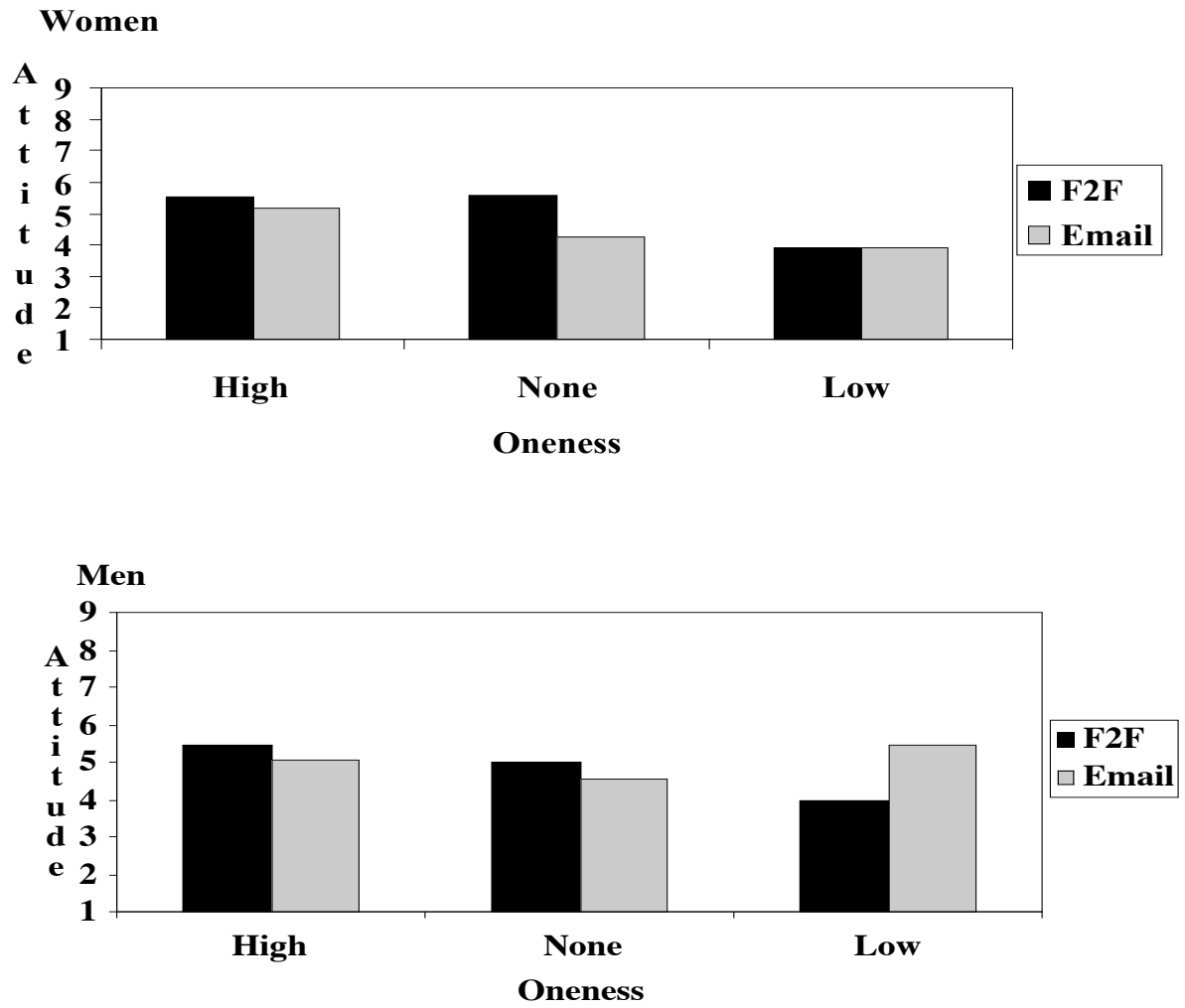
Cialdini, 2002).

Women

Men

Figure 2. Attitude toward the comprehensive exam broken down by oneness, communication mode, and gender (Guadagno, 2003).