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A TEST OF THE STICKY CUES MODEL USING FACEBOOK

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COMPUTER-MEDIATED IMPRESSION FORMATION: A TEST OF THE STICKY CUES MODEL USING FACEBOOK

By

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ABSTRACT

COMPUTER-MEDIATED IMPRESSION FORMATION:
A TEST OF THE STICKY CUES MODEL USING FACEBOOK
By

Brandon Lee Van Der Heide

This research offers a model of online impression formation that explains how different impression-bearing cues may carry more or less informational value. This research considers the possibility that impression-bearing cues have greater informational value when those cues are distinctive and are task-relevant. This research refers to such cues as *sticky cues*. Further, this research suggests that sticky cues may help to describe how interpersonal and categorical cues vary in terms of the amount of impression-bearing information they provide to observers. This research reports two original experiments that varied both the distinctiveness of interpersonal and group cues and the task-relevance of those cues. This research examined the effects of group cues on judgments of a target's intelligence and the effects of interpersonal cues on judgments of a target's extraversion. The results were consistent with the sticky-cues hypothesis with regard to interpersonal cues to extraversion, but only cue distinctiveness (and not cue relevance) were effective group cues that informed participants' judgments of a target's intelligence. These findings are discussed in light of other theoretical perspectives on impression formation in computer-mediated communication and future research directions are discussed.

This dissertation is dedicated to my wife, Jen Van Der Heide, whose love, patience, and support made this project (and so many other things) possible.

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Chapter 1

COMPUTER-MEDIATED IMPRESSION FORMATION: A TEST OF THE STICKY CUES MODEL USING FACEBOOK

Research on interpersonal impression formation in computer-mediated communication (CMC) has examined a variety of topics including whether or not impressions form in CMC (Kiesler, Siegel, & McGuire, 1984); whether CMC inclines people to form group rather than interpersonal impressions (Reicher, Spears, & Postmes, 1995); whether online impressions are like offline impressions (Jacobson, 1999); at what rate (Walther, 1992, 1993) and under what conditions impressions form online (Walther, 1994); and the breadth and depth of impressions that form in CMC (Hancock & Dunham, 2001). While past research has helped researchers to understand how individuals make interpersonal judgments about others online, less research has examined whether all information that informs the impressions people form of one another online is of equal impression-bearing value.

This research seeks to understand what makes different types of information more or less useful in helping people to form impressions in CMC. In accomplishing this goal, this research proposes a model of impression formation that allows for impressions to form on the basis of particularly useful impression bearing information. Specifically, this piece advances the argument that, in some situations, individuals look for particularly potent cues, which this research coins *sticky cues*, in order to form an impression of another person efficiently even in an environment such as in CMC where interpersonal information is less prevalent than in traditional face-to-face interactions. This work first explores some basic assumptions about the nature of impression

formation. Working from these basic assumptions, this work suggests several dimensions upon which impression-bearing cues are proposed to vary. Finally, hypotheses about the types of information (or cues) that will have the most effect on impression judgments are forwarded and tested using stimuli comprised by mockups of profiles from the popular social networking website, Facebook. Results supported the hypothesis that distinctive cues that were task-relevant together produced the most extreme extraversion judgments, while distinctive group cues alone produced the expected intelligence judgments.

Facebook as an Impression Formation Platform

boyd and Ellison (2007) define social network websites as web-based services that allow individuals to publicly or semi-publicly share information about themselves using a pre-formatted profile page, form connections with other individuals, and peruse these "friends" profiles and connections. Facebook is among the most popular of these social network sites. Research has begun to explore how different cues (i. e., pieces of information about a person) affect impression formation in this computer-mediated environment. For example, Walther, Van Der Heide, Kim, Westerman, and Tong (2008) explored how two elements of individuals' personal profile page, their friends' photograph and the messages their friends left on the profile owners' page affected impressions of individuals' physical attractiveness. Specifically, this research found that a profile owner's friends' physical attractiveness affects a perceiver's judgment of the profile owner's physical attractiveness—profile owners with physically attractive friends were judged to be more physically attractive than profile owners with physically unattractive friends. This research also suggested that what a profile owner's friends say

about him or her can affect judgments of a profile owner's physical attractiveness. When male profile owners' friends left negatively valenced comments about certain moral behaviors on their profiles, profile owners were judged to be more physically attractive than if their friends left positively valenced comments; however, this relationship was reversed for female profile owners.

While some research has begun to explore how impressions of a person form on the basis of a Facebook profile, much research into impression formation in CMC has examined the effects of relatively few isolated cues on impression formation. Facebook provides an interesting venue to study impression formation in CMC because it allows researchers to begin to understand how perceivers utilize social network site profiles that contain a large number of cues about a profile owner in order to form impressions of a target. Online venues such as Facebook allow for a individuals to send large numbers of messages to perceivers, and they allow for a perceiver of a target profile to assess people not only on the basis of what they say about themselves but also what others say about them and the information presented about them as aggregated by the technological system (e. g., the number of friends one has). Previous research has explored and enumerated several different types of cues that may exist in social network environments such as self-generated, other-generated, and system-generated cues (Tong, Van Der Heide, Langwell, & Walther, 2008; Walther et al., 2008; Walther, Van Der Heide, Hamel, & Shulman, 2009). This work builds upon these perspectives to help describe how perceivers select pertinent cues from among the large amount of information available to form an impression of a target.

Additionally, the impression formation process may be unique on Facebook because of the sheer amount of information present on profile pages. Traditionally, impression formation processes have been examined by exploring how an impression of a target develops quickly (and accurately) on the basis of relatively few cues about the target (Albright, Kenny, & Malloy, 1988; Ambady & Rosenthal, 1993). Impression formation in the context of a computer-mediated social network profile raises new questions about how people form focused impressions of a target in the face of a veritable wall of cues about a target's identity.

Factors Affecting Impression Formation

To explore the factors that impact the potency of impression-bearing cues, this research begins by reviewing some key perspectives from interpersonal communication that help to explain the types of information that are judged by perceivers to be useful when forming impressions and how perceivers may go about seeking out particularly useful impression-bearing cues. Next, this research builds on Gigerenzer and Goldstein's (1996) probabilistic mental models theory and Kelly's (1967, 1973) distinctiveness information to inform a model of how particularly potent impression-bearing cues affect impression formation in CMC.

Interpersonal Impression Utility

Do people always find interpersonal impressions useful, or do situations vary in the degree to which people find having an interpersonal impression useful? In their classic text, Miller and Steinberg (1975) argued that interpersonal impressions of others are not necessary for navigating every social situation. There are some situations where

unique knowledge of a person's idiosyncratic qualities is useful, while other situations require only more general sociological or cultural-level knowledge about a person.

Miller and Steinberg (1975) describe three distinct levels of knowledge upon which people may make predictions about how others will behave: the cultural level, the sociological level, and the psychological level. From this Miller and Steinberg propose that the way people interact with others is informed by the predictions people make on the basis of these different sorts of information. The most general level of information about others, cultural information, is defined as "the sum of characteristics, beliefs, habits, practices and language shared by a large group of people" (p. 12). Sociological level predictions rely on specific information about a person's social group membership. A membership group is "a class of people who share certain common characteristics, either by their own volition or because of some criteria imposed by the predictor" (p. 17). Finally, psychological level predictions presume that one has knowledge about the unique idiosyncrasies associated with a specific interaction partner.

If situations vary in the degree to which forming an interpersonal impression is useful and economical, one can extrapolate that the most refined interpersonal predictions—psychological level predictions—are not necessary for every situation. An operating assumption of this research is that the usefulness of forming an impression of another person varies across situations. For example, if one were seeking a potential romantic partner on an online dating website, one may be highly motivated to learn about interpersonal characteristics such as physical attractiveness and likes or dislikes. If, prior to a vacation, a person consulted an online discussion forum about what the weather was like in the Cayman Islands in March, it may be sufficient to know that a

person who answered that question was a resident of the Cayman Islands—knowledge of their music preferences, food allergies, and physical attractiveness may be of little interest to a perceiver. Let us refer to the degree to which it is useful in an interpersonal encounter to form a psychological-level impression of another individual with whom one is interacting as the *interpersonal impression value* of a given situation. If situations vary in terms of how useful it is to form an interpersonal impression of others, it seems logical to ask: When people are in situations for which an interpersonal impression is useful, do they also seek out specific impression bearing information in order to form the impressions needed to navigate these social situations? This work now turns to a discussion of some findings that suggest that people may seek information that best helps them to traverse interpersonal encounters.

Impression Bearing Information Seeking

Previous research has suggested that people form impressions that help them navigate social situations. Hancock and Dunham (2001) argued that, in CMC, people are able to form impressions that, although more narrow than face-to-face (FTF) impressions, are more extreme. In making this conclusion their research examined impression formation among college students who were completing an object-matching task. In a one-shot interaction, one participant was instructed to describe a series of tangrams to another participant who sought to identify the described tangram from an array of possible solutions. Their research examined the effect of communication mode on impression extremity (e. g., how extremely introverted or extraverted a perceiver rated a target) and impression breadth (e. g., how many items per personality characteristic a perceiver made some judgment rather than indicating that had

insufficient information to make a judgment.) Hancock and Dunham found that perceivers rated each targets' traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism) more *extremely* on Costa and McCrae's (1991) NEO-Five Factor Inventory (NEO-FFI) personality measurement in CMC than in FTF interactions. However, the *breadth* of impressions formed was greater in FTF interactions. That is, they found that, when participants were given the option of rating a partner on each item of the NEO-FFI or indicating that they could not answer the question, in FTF interactions people were able to indicate judgments on more items of the NEO-FFI than in CMC. Thus, because participants were able to express a greater number of impression judgments, Hancock and Dunham concluded that the breadth of impressions formed was greater for FTF compared with CMC interactions. Although this effect persisted for judgments of extraversion, neuroticism, and agreeableness, it was qualified by a significant ordinal interaction such that there was no difference in the breadth of impression formation in CMC and FTF interactions for conscientiousness and openness. Hancock and Dunham interpreted this interaction as evidence that "participants were prepared to make judgments regarding their partner's openness and conscientiousness in as much detail in the CMC condition as in the FTF condition" (p. 335).

One plausible explanation of these findings is that, in order to best accomplish the matching task, it was beneficial for participants to form an impression about their partner's openness and conscientiousness. Miller and Steinberg's (1975) suggestion that in some situations it may be useful to have knowledge of a partner's idiosyncrasies helps to explain some findings in impression formation in CMC. In the case of Hancock and

Dunham's (2001) findings, determining a partner's conscientiousness may have helped a perceiver make a judgment about whether the detail a target was providing was adequate to determine the shape of the tangram. Specifically, openness and conscientiousness may have been more relevant to the task because in order to successfully complete the task, participants had to trust that their partners were carefully and accurately describing the tangram to be matched (requiring a conscientiousness judgment) and also may have required confidence about the aesthetic sensitivity and intellectual curiosity of their partner (which, according to Costa and McCrae [1991], are components of openness.) However, it seems unlikely that a partner's extraversion would be a helpful impression to form in order to best accomplish the matching task. Thus, conscientiousness may have been a task-relevant impression while extraversion was not.

Probabilistic mental models. This explanation of Hancock and Dunham's (2001) findings is consistent with Gigerenzer and Kurz's (2001) adaptation of Brunswik's (1956) lens model. Gigerenzer and Kurz argued that when people make judgments based on information, they do not explore all of the possible information available to them. Instead, people make judgments based on the best piece of information available to them. Gigerenzer and Goldstein's (1996) formal explanation of this *take-the-best* heuristic is rooted in probabilistic mental models theory (PMM theory; Gigerenzer, 1993; Gigerenzer, Hoffrage, & Kleinbölting, 1991). Both PMM theory and the take-the-best heuristic emerge from a line of psychological inquiry positing that when people make judgments, they are disinclined to engage in the complex process of evaluating, weighting, and summing each individual piece of decision-relevant information. Rather, people *satisfice*: They sacrifice optimal decision making processes (where an individual

might exhaustively evaluate each decision alternative and be virtually assured of making a correct judgment) in favor of a more efficient decision-making approach that yields an adequate decision and avoids gratuitously expending cognitive effort (Simon, 1945, 1956, 1982; cf. Krosnick, 1991). (In fact, Gigerenzer and Goldstein [1996] present evidence that the take-the-best heuristic, in addition to being efficient, leads users of the heuristic to exceptionally accurate conclusions on some tasks.)

PMM theory may inform an understanding of the impression formation process as it occurs in CMC. When impression bearing verbal and nonverbal information is forced into a text-based channel, the transfer rate of impression bearing information slows (Ramirez, 2007; Walther, 1992, 1993). Because of this, all other things being equal, we see generally less broadly developed impressions in CMC than in face-to-face interaction within a relatively restricted time interval (Hancock & Dunham, 2001). However, it is possible that when the formation of an impression of another person facilitates task or social success, people specifically seek out information that may help them to form a targeted impression of another person, as was the case for impressions of conscientiousness and openness in Hancock and Dunham's (2001) research.

Gigerenzer and Goldstein's (1996) "take-the-best" algorithm assumes that we are able to determine which cue is the clearest indicator of an underlying impression. Based on the arguments above it seems possible that situations vary in the degree to which forming an impression of another person is useful, and that we seek out the best information in order to form a satisfactory impression about a discussion partner's pertinent characteristics. However, the question remains: How do we decide which information is the best available information? In order to explore a possible answer to

this question, this research now turns to a discussion of the informational value of impression bearing cues.

Cue Informational Value

If, as Gigerenzer and colleagues (Gigerenzer & Goldstein, 1996; Gigerenzer & Kurz, 2001) argue, people satisfice by making judgments according to only the best available cues, there must be some mechanism by which people evaluate the relative value of a cue. Let us refer to the degree to which an individual cue allows an observer to discriminate between different values of an underlying impression as the *informational value* of a cue. This research proposes that there are several criteria that shape how different impression-bearing cues affect impression judgments of a target: the warranting value of the information, the distinctiveness of the information, and the relevance of the information to impression utility demands. This research explores the definition of each of these informational characteristics and considers the degree to which each characteristic is a necessary or sufficient condition in determining whether or not a cue has large amounts of informational value.

One factor that may influence the informational value of an impression-bearing cue is the warranting value associated with that cue. Walther and Parks (2002) stated that the warranting value of information is "derived from the receiver's perception about the extent to which the content of that information is immune to manipulation by the person to whom it refers" (p. 552). Walther and Parks argued that individuals prefer to base judgments on information that has greater warranting value. Similarly, Donath (1999, 2007) argued that it in virtual communities signals vary in the degree to which users can manipulate them. Specifically, Donath suggested that while online people may

claim most anything about their personal characteristics, these self-claims may be less trustworthy than less manipulable information. Drawing on Donath's work, Walther, Van Der Heide, Hamel, and Shulman (2009) suggested that when another party gives a third-person testimonial about an individual, the testimonial is of greater judgmental value than a first-person disclosure. The preference for warranted information is hypothesized by the warranting principle to lead one to base judgments of a person's physical attractiveness on a third-party's testimony about the target rather than the target's disclosure of his or her own physical attractiveness. An initial test of the warranting principle indicated that people do indeed display a preference for information with a greater warranting value on some characteristics such as physical attractiveness (Walther et al., 2009).

The warranting value of information should influence a cue's informational value. That is, when the warranting value of impression bearing information is high, it stands to reason that such a cue should also be perceived to have greater informational value to a person who is seeking to make an impression judgment.

Another factor that may influence whether a cue has high levels of informational value is the degree to which the information contained in the cue is distinctive. For the purposes of this research distinctive information can be conceptualized at one end of a bi-polar scale opposite equivocal information. Equivocal cues contain information that allows for the possibility of a number of different interpretations. For instance, a sloppily written email message may easily lend itself to a number of different interpretations (Lea & Spears, 1992). One might make a dispositional inference from the badly composed message and judge the message author to be lacking in

conscientiousness. Alternatively, one might make the situational inference from this same message that the author was in a hurry to write the message. Such an equivocal cue is not likely to have great informational value.

Distinctive cues are similar to Kelly's (1967) concept of distinctiveness information. Kelly suggested that the observation of distinctive behavior allows an observer to make attributions about some perceptive object (including interpersonal impression judgments). Orvis, Cunningham, and Kelly (1975) used the example of Dr. Stanton who complimented the work of a student, whose name is Barry. If an observer of Dr. Stanton knows that he almost never compliments students' work, the observer may consequently make the judgment that Barry's work was good. In this case, Dr. Stanton's behavior is distinctive. Conversely, when an observer of Dr. Stanton notes that he praises almost every student's work, the observer is less likely to judge Barry's work as good. In this case, Dr. Stanton's behavior is not distinctive. Distinctive cues, as used in the present research, differ from Kelly's notion of distinctiveness information in that they can operate when an observer makes a single observation of these cues. Drawing on the example above, distinctiveness information is only available to an observer when she or he is able to observe other instances of Dr. Stanton's behavior.

Distinctive cues allow observers to make judgments about a target or object without multiple observations. Kelly's (1973) subsequent work describes how observers make attributions on the basis of a single exposure to a stimulus. Kelly suggests that observers discount some causal attributions about an effect when other rival causal attributions may be made. A corollary of the discounting principle describes distinctive cues: When a cue (or in Kelly's lexicon an effect) may only have arisen from one

underlying attribute (a cause), observers will not discount the underlying attribute as a possible cause of the cue. Thus, the cue is distinctive.

A distinctive cue does not easily lend itself to multiple interpretations. For instance, given that one is familiar with the sex-linked naming practices in the United States, an email from Bill is a distinctive cue that the originator of the message was male, while an email from Jennifer is a distinctive cue that the originator of the message was female. Alternatively, an email from a person named Alex provides equivocal information, as the name "Alex" is commonly held by both women and men. The distinctiveness of a cue should influence its informational value. That is, when a cue is highly distinctive, it should also be perceived to have high informational value to a person seeking to make an impression judgment.

A final factor that may influence the impressions people form on the basis of a cue is the task-relevance of that cue to the impression value specific to the situation. Cues have a greater effect on judgments when they are more applicable to a particular judgmental task (Todorov, 2000). In other words, the impression that a perceiver forms should be more strongly informed by a cue that provides impression-bearing information about an impression that is useful in helping the perceiver to accomplish his or her goals. However, a perceiver who encounters a cue that provides impression bearing information about an impression that is irrelevant to his or her goals should be less likely to utilize that cue to inform his or her impressions of the target. This should be the case because a perceiver is, presumably, looking for specific cues that helps him or her to accomplish his or her goals. It is possible that the relevance of cues to the impression value of the situation may also explain why Hancock and Dunham (2001) found that in

CMC impressions of the personality dimensions of openness and conscientiousness were as broadly formed as impressions of a partner's openness and conscientiousness in FTF communication. Participants may have focused on those impression-bearing cues that most clearly helped them to accomplish the collaborative tangram-matching task. Thus, when a cue provides perceivers with impression bearing information that is relevant to the impression value of the situation, perceivers should be more likely to attend to this cue because it helps them to accomplish their task goals. Specifically, as a cue becomes more relevant to the impression demands of a situation, it should have a greater effect on a relevant impression judgment.

To recap, when we form impressions of others, we select cues with greater amounts of informational value. It is also conceivable that in a situation where forming an impression of another person might be very useful (there is a high level of impression utility), there may be some cues with high amounts of informational value. Let us refer to these highly useful cues as *sticky cues*. Sticky cues may be exceptionally important in CMC. Weisband and Atwater (1999) found that, in CMC groups, liking between task-group members was positively related to people's task-related communication behaviors. In face-to-face groups, however, liking between group members was not significantly related to task-related communication behaviors. Instead Weisband and Atwater concluded that liking among group members in face-to-face groups was facilitated by nonverbal behaviors not present in CMC groups. This suggests that because CMC filters out many nonverbal cues, users of CMC may be able to focus on specific textual information presented in computer-mediated messages. Thus, in CMC, where people expect to have to seek out salient social information without the aid of

traditional nonverbal cues, sticky cues may function as particularly potent morsels of social information, allowing individuals to form well-developed and efficient, although perhaps narrow, impressions of others' characteristics.

Interpersonal vs. Group Impression Formation

Research on impression formation in CMC has explored two distinct streams. One of these research directions has explored the way that idiosyncratic impressions form via interactive text-based CMC between communicators over time (see Walther, 1992, 1993). Another direction in impression formation has been to explore the way that categorical information shapes the process of social identification in CMC (see Reicher et al., 1995). The first of these perspectives (collectively referred to as a social information processing theory [SIPT] approach) focuses primarily on how impressions form in a zero-history, text-only interactive exchange. The second perspective, popularized by the social identity model of deindividuation effects (SIDE; Reicher et al., 1995), has focused on how information about the types of groups or categories a person belongs to may shape normative behaviors and beliefs that occur in CMC. The sticky-cues model may improve our understanding of how these categorical / group impressions form by describing the factors that cause group or categorical impressions to form most potently. This research now turns to a discussion of the SIDE model and how sticky cues may affect the formation of categorical / group impressions.

The SIDE model (Reicher et al., 1995) proposes that features common to mediated communication (such as visual anonymity and physical isolation) reduce the salience of one's personal identity and increase the salience of one's group identity. Increased group identity salience leads to a greater adherence to the norms associated

with a salient group. In line with Turner's (1982, 1985) self-categorization theory, SIDE argues that when people personally identify, they think of themselves as individuals with unique characteristics and idiosyncrasies, but when people socially identify, they think of other individuals primarily as members of some salient category or group. In visually anonymous and physically isolated environments such as in CMC, the SIDE model suggests that people relate to one another in group, rather than interpersonal terms.

Fiske and Neuberg (1990) suggested that people form impressions of others in several ways. People may form categorical impressions of others and then recategorize based on individuating attributes, or people form impressions of others based on their individuating attributes. Fiske and Neuberg suggested that instead of choosing just one of these impression formation strategies, perceivers vary on a continuum based on the degree to which they utilize individually individuating information about a target. Fiske and Neuberg argued that the degree to which a perceiver utilizes individuating information varies according to how motivated a perceiver is to determine individuating information about a target. Specifically, Fiske and Neuberg suggested that people first rely on categorical information to form impressions of others. If people remain unmotivated to form an attribute based impression of a target, they will form a categorical impression of a target. After this initial categorical classification, people may be motivated to use an attribute based approach or a categorical approach to refine the initial impression of a target. One factor that may serve to motivate individuals is the impression value of a given situation.

Fiske and Neuberg (1990) argued that categorical impressions initially have priority over interpersonal attribute based impressions. Specifically, Fiske and Neuberg

argued that committed outcome dependencies can motivate individuals to form categorical impressions. A committed outcome dependency occurs when an individual is motivated by a desire to confirm a specific type of expectation (rather than form an accurate impression). For example, if an individual was primed to expect that his or her fellow group members valued efficiency (e. g., Postmes et al., 2001), individuals may be more motivated to maintain categorical impressions that confirm initial expectations while turning a blind eye to individual characteristics that may indicate that his or her partner, in contrast to what one would expect from that person's group membership, is not an efficient person. Fiske and Neuberg argued that the desire to confirm expectations may be especially salient when favorable situational outcomes depend on the confirmation of these expectations.

As Miller and Steinberg (1975) suggested, in many situations categorical (cultural or sociological-level knowledge) about others is sufficient. In situations where these categorical impressions are sufficient, it is likely that perceivers will attend to impression bearing information that confirms their group based expectations about targets. This research has argued that, in some situations, individuated impressions may be more useful (i. e., the situation is high in interpersonal impression value). However, it is also possible that, in some situations, it may be sufficient to form a categorical impression of another person. For instance, if a person were seeking credible medical advice on an Internet discussion board, that person may be motivated to form an impression of an advice-giver's credibility based on cues indicating that the advice-giver belonged to the category "physician". Let us refer to the degree to which it is useful to

form a categorical impression of another person as the *categorical impression value* of a situation.

Testing the Sticky Cues Model

This work proposes that the same cues can have different degrees of informational value based on the different social situations that one encounters. When forming a specific impression of a personal characteristic (e. g., extraversion) is task-relevant, cues relating to that characteristic are more likely to influence impression judgments on the specific impression. Conversely, when a specific impression judgment is not task-relevant, the same cues that may have strongly influenced impression judgments when those judgments were task-relevant may not have a strong influence. This is expected to occur because when a specific impression is task-relevant, an observer should be more likely to actively seek out information about that impression. However, when a specific impression is not task-relevant, an observer should be less likely to be actively seeking cues that inform the task-irrelevant impression. For instance, in massively multiplayer online role-playing games (MMORPG) there are commonly different types of goals. Some goals are social and others are achievement based (Yee, 2007). If one's goals for playing an MMORPG are primarily social, one may try to find out how socially attractive (i. e., likeable) others are, focusing primarily on cues that provide information about a person's social attractiveness (e. g., similarity). Meanwhile players with achievement goals may be more interested in how skilled a slayer of enemies another player is (e. g., Peña & Hancock, 2006; Utz, 2000), making sociability cues less valuable to the perceiver.

This varying degree of information usefulness gives rise to an explanation of the informational value of a given cue. When one can best complete a task by forming a specific impression of a target, an observer should actively seek out information relevant to the specific impression in question. Additionally, distinctive cues provide observers with more impression bearing information than do equivocal cues. For instance, when individuals make outright disclosures that they have some characteristic (e. g., a person claims that she or he is extremely extraverted), this disclosure clearly provides information about an individual's extraversion; such information is distinctive. Other cues to extraversion may be less distinctive. For example, extraverted individuals tend to generate messages that use a preponderance of adjectives (Oberlander & Gill, 2006) and are more verbose (Marcus, Machilek, & Schütz, 2006) than introverts. An observer may perceive a target that generates verbose messages including a preponderance of adjectives to be more extraverted. However, the observer may also attribute such a cue to other characteristics such as intelligence or inability to self-censor. Such information is more equivocal than direct disclosures.

According to the warranting principle (Walther & Parks, 2002), judgments of a target should vary on the basis of cues that an evaluator perceives to be difficult to manipulate (i. e., verbosity and frequent adjective use) rather than easily manipulable cues (i. e., direct disclosures). However, Walther et al. (2009) found that direct self-disclosures of extraversion affected a perceiver's judgments of a target's extraversion. They speculated that the warranting principle might affect judgments especially when a target is perceived to have something to gain. In the case of extraversion, Walther et al. argued that there may be little perceived social benefit to portraying oneself as

extraverted, while for other perceptive judgments such as physical attractiveness, the perceived social benefit of being perceived to be physically attractive is quite high: Thus, the warranting value of information should drive physical attractiveness judgments. Their data were consistent with this suggestion. The warranting value of information has been shown to affect impression judgments of a target. The present research posits that this effect should operate independently from the effect of sticky cues on impression judgments. Because of this, the present research focuses on the effect of distinctive cues and how relevant those cues are to situational demands rather than the warranting value of the cues on impression judgments. The present research speculates that distinctive cues allow individuals to form more extreme impressions than do equivocal cues.

According to the definition of sticky cues, a cue informs impressions most when it is both relevant and distinctive. Because sticky cues have greater informational value than other cues, they allow an observer to form a more extreme impression of a target's characteristics than he or she would have otherwise formed. Observers of impression cues (e. g., extraversion) should judge a target to be most extraverted when they are exposed to a sticky cue to a target's extraversion, but they should judge a target to be less extraverted when the cue is not sticky.

This research predicts that an ordinal interaction between cue relevance and cue distinctiveness on impression formation such that judgments of a target's characteristics are greatest when participants are exposed to a distinctive cue that is also task relevant, but judgments of a target's characteristics are less extreme when a cue is distinctive but the task is not relevant, the task is relevant but the cues to the target's characteristics are

not distinctive, or the task is irrelevant *and* the cue to the characteristic of interest is not distinctive. In order to test this prediction, two studies are reported. The first examined the effects of relevant and distinctive group cues on intelligence judgments. The second examined the effects of relevant and distinctive interpersonal cues on extraversion judgments.

Chapter 2

STUDY 1

This research argues that distinctive *and* relevant group information inform impression judgments to a greater degree than cues that are either (a) distinctive *or* relevant but not both or (b) are neither distinctive nor relevant. Judgments of intelligence were chosen as the focal impression characteristic because, depending on the experimental task, judgments of intelligence could be either extremely relevant or extremely irrelevant. Finally, intelligence was the impression judgment of choice because group cues (a student's university affiliation), which varied in terms of cue distinctiveness and task relevance, were readily available.

The first study examines the effects of sticky group cues to intelligence impression judgments. This research predicts that perceivers judge targets to be most intelligent when group-based intelligence cues are both distinctive and relevant to the task.

Method

Procedure and Materials

In order to manipulate the relevance of intelligence ability judgments to the experimental task, half of participants completed a task for which intelligence judgments are highly relevant: helping to select possible candidates from a pool of people being chosen to participate as individual competitors on a "college-week" version of a popular television quiz show (see Appendix A). Participants were informed that the ideal candidate is someone who demonstrates exceptionally high intelligence. Thus, forming an impression of the target's intelligence was task relevant. Alternatively, half of

participants were directed to a task for which intelligence judgments are not relevant: Helping to select possible candidates from a pool of potential overnight hosts for prospective undergraduate students for a new program being developed by the Admissions Office of the school in question (either Westlake or Harvard University). Participants were informed that the ideal candidate for this program is someone who is very social and extraverted.

Stimuli were comprised by mockups of personal profile pages on the popular Internet social networking site Facebook (see Figure 1). Stimuli were composed to reflect differences in the distinctiveness of the group-based cues to intelligence represented on the target's profile. In the distinct group cue to intelligence condition stimuli depicted the target as being a member of the "Harvard University" network. In the equivocal group cue to intelligence condition stimuli will depict the target as being a member of the network "Westlake University". These cues were chosen as distinctive and equivocal group cues as it is a common belief that Harvard students are intelligent while knowing that a person is a Westlake University student provides little information about the person's intelligence because Westlake University does not actually exist. Thus, knowing that a person is a student at "Westlake University" cannot provide distinctive information about a person's intelligence beyond knowing that the person in question is a university student. Other than these variations, experimental stimuli were identical.

Participants were then informed that they would be basing their impression of the participant upon the target's limited Facebook profile, and they should take as long as necessary to form an impression of the target. In order to enhance the believability of the

task, participants were instructed that they are to evaluate several students' Facebook profiles, and after viewing each profile they will be asked a series of questions. In actuality, only the first profile will contain the induction of interest. Further, in order to encourage the careful evaluation of each profile, participants were told that the person who completed the task by making the *best* evaluation of each target would earn a $50 dollar gift certificate. (In actuality this gift certificate was randomly awarded to a participant.) After participants viewed the experimental stimuli, they completed several dependent measures.

Participants and Design

Participants ($N = 79$) were students in undergraduate communication courses at a large public university in the Midwestern U.S.A. Participants were randomly assigned to one of four experimental conditions using a javascript program (Burton & Walther, 2001). Experimental conditions reflected differences in the distinctiveness of group-based intelligence cues and the relevance of intelligence to the experimental task. Specifically, the study design was a 2 (distinctiveness of group-based intelligence cues: high vs. low) x 2 (relevance of intelligence judgments to the task: relevant vs. irrelevant) between-subjects design. All aspects of the experiment were administered online via Internet web pages and forms. Participants completed the experiment in locations of their own choosing, ostensibly in an environment where they routinely use the Internet.

Dependent Measures

Perceptions of the target's intelligence were measured using five original Likert-type items including "This person is intelligent," "This person knows lots of facts," and "This person is very smart" (see Appendix B). The response set for this measure was a

seven- point scale anchored by "Strongly Agree" and "Strongly Disagree" with "Neutral" anchoring the mid-point of the scale. In an attempt to hold participant fatigue constant among conditions and dependent measures, this scale contained an additional seven filler items that measured various, similar aspects of the target's personality (e. g., the target's task attractiveness; see McCroskey & McCain, 1974).

In order to assess whether the intelligence scale was unidimensional, a confirmatory factor analysis was conducted using the internal consistency theorem (Hunter & Gerbing, 1982). Additionally, a 12-item (ostensibly unidimensional) scale measuring participants' perceptions of the target's extraversion was collected in order to assess parallelism. These analyses indicated that the first intelligence item should be eliminated. With this item eliminated, the data suggested that the intelligence scale was unidimensional. Errors of internal consistency were small for the intelligence scale (e < .07). Only one error of parallelism was substantial (e = .21); other errors of parallelism were small (all other e < .13). Moreover, on average, errors were small (RMSE = .08). Because there was no evidence that the item that produced a large error of parallelism and lacked content validity and because the average error was small, this item was retained in the final factor solution (see Table 1 for items and factor loadings). Finally, the *alpha* reliability estimate based on standardized items was acceptable (α = .79).

Induction Check

In order to determine that the intelligence cue distinctiveness induction was effective, a manipulation check was conducted. An independent sample of participants (N = 87) viewed the single piece of information about the target that was manipulated in the actual experimental stimulus. That is, participants received a single statement about a

target, which informed them that the target was "a student at (Harvard / Westlake) University." After viewing this information, participants reported their degree of confidence in their impression of the target's intelligence. Participants' confidence in their intelligence impression judgment was measured using five Likert-type items such as "I feel very confident about my impression of the person's intelligence," and "It is difficult to make a judgment about this person's intellectual abilities" (reverse-scored). (See Appendix C for a sample stimulus and a complete listing of scale items). This scale displayed acceptable inter-item reliability, $\alpha = .88$. An independent samples t-test was used to evaluate whether greater confidence in intelligence judgments was aroused by the distinctive cue than the equivocal cue. Participants who saw the distinctive group cue (i. e., this person is a Harvard student) to the target's intelligence reported substantially greater confidence in their intelligence impression judgment ($n = 42$, $M = 5.00$, $SD = 1.02$) than did participants who were exposed to the equivocal group cue (i. e., this person is a Westlake student) to the target's intelligence ($n = 45$, $M = 3.18$, $SD = 0.97$), $t(85) = 8.48$, $p < .01$, $\eta^2 = .46$. The experimental induction of greater or lesser cue distinctiveness was successful. The data did not suggest that the group cue induction had an effect on participants' judgmental confidence of the target's extraversion; distinctive group cues ($n = 42$, $M = 5.08$, $SD = 1.40$) did not produce significantly different extraversion impression confidence judgments than did equivocal group cues ($n = 45$, $M = 4.82$, $SD = 1.42$), $t(85) = 0.86$, $p = .60$.

An examination of the experimental task was conducted to insure that this task manipulation successfully induced different degrees of situational task relevance. Another independent sample of participants ($N = 64$) viewed the experimental task

presented in the study and rated the relevance of intelligence judgments to the task on a 6-item Likert-type scale (see Appendix D) including items such as "In order to complete this task I need information about the person's intelligence," and "It is not vital to this task to form an intelligence impression" (reverse-scored). A Cronbach's *alpha* reliability estimate showed that the scale displayed acceptable reliability ($\alpha = .94$). As expected, the participants who viewed the intelligence-relevant (game-show) experimental task responded that they viewed intelligence to be more relevant ($n = 32$, $M = 5.87$, $SD = 0.84$) than those who viewed the intelligence-irrelevant (overnight host) experimental task ($n = 32$, $M = 3.54$, $SD = 1.18$), $t\ (62) = 9.06$, $p < .01$, $\eta^2 = .57$. Thus, the experimental induction of greater or lesser relevance of an intelligence impression was successful.

Chapter 3

STUDY 1: RESULTS AND DISCUSSION

The first study predicted that when group membership cues provide distinctive information about a Facebook profile owner's intelligence for a task in which intelligence judgments are highly relevant, participants would rate the target to be most intelligent.. However, when group membership cues were either equivocal, irrelevant, or both equivocal and irrelevant, participants would rate the target to be less intelligent. In order to test this hypothesis, a contrast analysis evaluated whether the data were consistent with the a priori contrast weights (see Table 2). The means of the study conditions (see Table 3 for means and standard deviations) were not consistent with contrast analysis predictions, t (75) = 0.81, p = .21 (one-tailed), $\eta^2 < .01$. Thus, the data were not consistent with the hypothesized interaction.

In order to determine whether either group cue relevance or distinctiveness alone influenced intelligence judgments, a post-hoc two-way ANOVA was conducted. The data did not suggest that whether a cue provided information that was more or less relevant to the experimental task did not affect intelligence judgments, F (1, 75) = 0.01, p = 0.921. However, cue distinctiveness appeared to influence intelligence judgments such that distinctive group cues to intelligence were associated with judgments of greater intelligence than were equivocal group cues to intelligence, F (1, 75) = 4.87, p = 0.03, η^2 = .06 (see Table 3 for means and standard deviations). In this case, cue distinctiveness had a significant effect on impression judgments such that a highly distinctive intelligence cue caused participants' judgments of a target's intelligence to be

greater than a less distinctive intelligence cue. However, the situational relevance of an intelligence cue did not affect intelligence judgments of a target.

Discussion

This study examined whether a special class of group cue, a sticky group cue, held great impression bearing value when participants were presented with a distinctive cue that was also task-relevant. The data suggested that the combination of both distinctive cues that were task-relevant were not required for group impression cues to be influential. Further, while the distinctiveness of the cue made that cue especially informative to participants making impression judgments, the task-relevance of an intelligence impression did not significantly affect impression judgments.

These findings may be attributable to several factors. First, it is possible that group based (categorical) impressions occur regardless of what cues are task-relevant. As Fiske and Neuberg (1990) argue, categorical impressions may be the first type of impression to form. If perceivers are unmotivated to evaluate a target beyond this initial categorical level, perceivers may instead rely on the best available cue to form an intelligence impression on the basis of categorical information alone (Gigerenzer & Goldstein, 1996; Gigerenzer & Kurz, 2001). In this study, the only cue which varied was the categorical cue participants saw was the university affiliation of the target (i. e., Westlake or Harvard University). Because this was the only cue that varied between subjects and participants saw only one of these cues, they may have judged this cue about the target to be the best possible cue to the target's intelligence and may have based their judgment about the target on that cue alone regardless of whether the task rendered an intelligence judgment task-relevant or not.

Another related explanation of these findings is that it is possible that group based impression cues—because of their primacy—have different requirements than interpersonal impression cues for what makes them sticky or not. If, as Fiske and Neuberg (1990) suggest, categorical impressions form first, and, as Gigerenzer and Goldstein (1996) and Gigerenzer and Kurz (2001) suggest, we form impressions on the basis of the one best piece of available information, one might expect that an observer who is seeking to form an impression of another person might find a distinctive categorical impression cue (as opposed to the task one is to be performing) to be most informative and form a group-based impression with little concern about whether that impression is task-relevant or not. Task relevance may matter only when the categorical impression formed by the perceiver is judged to be insufficient to accomplish his or her goals. Although the only variance in the stimuli reflected differences in the group affiliation of the profile owner, it is possible that, in both the intelligence-judgment relevant and irrelevant condition, participants felt that they had adequate information upon which to make their impression judgments. Thus, participants may not have been motivated to move beyond their initial categorical impressions of the target.

In Hancock and Dunham's (2001) study, task-relevant personality characteristics emerged after interactions with a partner. These interactions may have allowed increased exposure to interpersonal impression cues. Because Hancock and Dunham's research utilized interactive dyads there may have been several types of impression-bearing cues available to perceivers. For instance, it is possible that participants made disclosures about their personality characteristics in their interactions. Such disclosures may have provided additional information about a target's personality that allowed a perceiver to

better judge the target's personality. Disclosure cues such as these may be particularly distinctive cues to a person's identity, and when these cues reflect on a characteristic that helps a perceiver accomplish his or her task goals they may be particularly potent pieces of impression-bearing information. Because the first study was focused primarily on the distinctiveness and relevance of group cues, disclosure cues were held constant and intentionally did not reflect on relevant impression judgments. However, these cues are of particular interest given that previous research has found that disclosures are more frequently used in CMC than in face-to-face communication (Tidwell & Walther, 2002) and in CMC a message sender's explicit statements (disclosures) of positive affection are strongly related to a receiver's feelings immediacy and affection (Walther, Loh, & Granka, 2005). In short, in CMC, communicators make disclosures and these disclosures allow a person to communicate immediacy and affection. In order to test whether both the task-relevance and distinctiveness of individual disclosure impression cues affected interpersonal impression formation in CMC, a second study was conducted.

Chapter 4

STUDY 2

A second study used the extraversion / introversion dimension as the impression judgment of interest. Extraversion judgments have been one of the most commonly studied impression judgments in communication technology research. Previous studies of impression formation in CMC have utilized extraversion as a judgmental criterion of interest (e. g., Hancock & Dunham, 2001; Tong, Van Der Heide, Langwell, & Walther, 2008; Walther et al., 2009.) Research in this line has been guided by the fact that extraversion has been associated with a number of positive outcomes (for review see Eysenck & Eysenck, 1985). Thus, knowing an individual's level of extraversion is a helpful and commonly made judgment. Additionally, extraversion is a personality characteristic about which both group and interpersonal cues may have some bearing. Finally, this research seeks to test the critical proposition that the relevance and distinctiveness of a cue impacts the degree to which the cue is utilized when a perceiver forms an impression of a target. As such, extraversion is a favorable impression judgment because previous research has suggested the warranting value of extraversion cues is less important to the judgmental process than other factors (Walther et al., 2009). For example, Walther et al. (2009) found that a target's direct self-disclosure of extraversion significantly affected an observer's judgment of a target's extraversion. This study requires a judgmental criterion that allows the sticky cue hypothesis to be tested most clearly. In order for this hypothesis to be most clearly tested, the judgmental criterion of the study needs to be able to be systematically varied while reducing the other characteristics that might cause an observer's judgments to vary. In this case,

because the warranting value of an extraversion disclosure is not vital to an observer's extraversion judgments, extraversion is a good candidate for a judgmental criterion for the present study as it allows for judgments to occur on the basis of cue characteristics other than the warranting value of the cue.

The second study examines the effects of sticky cues to extraversion impression judgments. This research predicts that perceivers judge targets to be most extraverted when extraversion cues are both distinctive and relevant to the task. Additionally, the second study added two control conditions that were predicted to produce the lowest extraversion judgments because the disclosure cues gave no information about the target's extraversion. These conditions were added to determine whether an equivocal cue allowed observers to make some judgment about a target's extraversion (resulting in higher extraversion judgments than in the control conditions) but still lower than the condition containing a task-relevant, distinctive cue. Thus, the second study predicted that extraversion judgments would be greatest when the stimulus contained a distinctive cue that was task relevant, extraversion judgments would be lowest when stimuli contained non-distinctive (control) cues, and extraversion judgments would be moderate when stimuli contained an equivocal cue (regardless of the task) or when the task was relevant and the extraversion cue was distinctive.

Method

Procedure and Materials

As in study 1, all aspects of the experiment were administered online via Internet web pages and forms. Participants completed the experiment in locations of their own choosing, ostensibly in an environment where they routinely use the Internet. Study 2

was conducted at the same time as study 1. Participants were randomly assigned to one of the two studies by a javascript program (Burton & Wather, 2001).

As in the first study, participants were instructed that their task for the session was to evaluate of one of several students. In order to induce different levels of the relevance of extraversion judgments to the experimental task, a javascript program (Burton & Walther, 2001) randomly directed half of participants to a task for which extraversion judgments are highly relevant: helping to select possible student hosts for a program developed by the Admissions Office. Participants were informed that the ideal candidate for this program is someone who is very social and extraverted. Thus, forming an interpersonal impression of the target's extraversion was task relevant. Alternatively, half of participants were directed to a task for which extraversion judgments are irrelevant: helping to select candidates as individual competitors on a "college-week" version of a television quiz show (see Appendix A). Participants were informed that the ideal candidate is someone who is highly intelligent. Participants based their impression of the profile owner upon the target's limited Facebook page. Thus, the same tasks from study 1 were utilized in study 2; however, for study 2 the task-relevant impression was reversed. That is, for study 2 the quiz show did not require an extraversion judgment (the focal dependent variable) to successfully complete the task, while the student-hosting task did require an extraversion judgment to successfully complete the task. Thus for the student hosting task extraversion was a relevant impression, but for the quiz-show task an extraversion impression was not relevant. As in study 1, in order to enhance task-believability, participants were instructed to evaluate several students' Facebook profiles, and after viewing each they were asked a series of questions. In

actuality, only the first profile contained the induction of interest. Also, as in the first study, participants were instructed that the person who made the best judgment would be awarded a $50 dollar gift certificate.

In the distinct cue to extraversion condition, the stimulus (see Figure 2) included a statement in the "about me" portion of the profile that included a direct claim of extraversion—such direct claims have been successful at inducing judgments of greater extraversion in previous research (Walther et al., 2009). This section of the profile stated that, "I am a sociable people-person...until you get to know me, then I'm EXTREMELY extraverted and outgoing!!!" In the equivocal cue to extraversion condition the stimulus included a statement in the "about me" portion of the profile that indirectly indicated—through greater verbosity (Eysenck & Eysenck, 1985; Rutter, Morley, & Graham, 1972)--that the target was extraverted. In this condition the "about me" section of the profile stated "I am a conscientious person. I try to do a good job with the things that come my way. I enjoy American Idol at the moment, (I'm a Simon Cowell fan). I enjoy college sports...specifically I love basketball (March is my favorite time of year)...and I'm also a foodie. I specifically enjoy Italian and Middle Eastern food. There are a lot of great restaurants around that serve these types of foods and I enjoy going to them." Finally, a control condition contained the brief filler statement, "I really like U2" in the "about me" section of the profile. Other than these manipulations experimental stimuli were identical.

Participants and Design

Participants (N = 108) were students in undergraduate communication courses at a large public university in the Midwestern U.S.A. Participants were randomly assigned

to one of six experimental conditions. Experimental conditions reflected differences in the distinctiveness of interpersonal extraversion cues and the relevance of extraversion cues to the experimental task. Specifically, the study design was a 3 (distinctiveness of interpersonal extraversion cues: high vs. low vs. control) x 2 (relevance of extraversion judgments to the task: relevant vs. irrelevant) between-subjects design.

Dependent Measures

Participants rated the target on extraversion according to the extraversion subscale of the NEO-FFI (Costa & McCrae, 1991; see Appendix E) that was adapted for observers (Hancock & Dunham, 2001; Walther et al., 2009). This scale consisted of 12 Likert-type items including "This person likes to have a lot of people around," and "This person really enjoys talking to people." The response set for this measure was a seven-point scale anchored by "Strongly Agree" and "Strongly Disagree" with "Neutral" anchoring the mid-point of the scale.

In order to assess whether this scale was unidimensional, a confirmatory factor analysis was conducted using the internal consistency theorem (Hunter & Gerbing, 1982). Additionally, a five-item (ostensibly unidimensional) scale measuring participants' perceptions of the target's intelligence was collected in order to assess parallelism. These analyses indicated that the first intelligence item and items 3, 5, and 7 from the extraversion scale be eliminated. With these items eliminated, the data suggested that the extraversion scale was unidimensional. All errors of internal consistency were small (all e's < .09). Only one error of parallelism was substantial (e = .20); other errors of parallelism were small (all other e < .15). Moreover, on average errors were small (RMSE = .08). Because there was no evidence that the item that

produced an error of parallelism lacked content validity and because the average error was small, this item was retained in the final factor solution (see Table 1 for items and factor loadings). Finally, *alpha* reliability estimates based on standardized items were acceptable for (α = .87).

Induction Check

In order to determine that the extraversion cue distinctiveness induction was effective, a manipulation check was conducted. An independent sample (N = 84) viewed one of the three disclosures (distinctive, equivocal, or control) the target made about him/herself as described above. Each participant viewed only the single disclosure about the target that was manipulated in the actual experimental stimulus (whether the target claimed that: "I am a sociable people-person...until you get to know me, then I'm EXTREMELY extraverted and outgoing!!!" [distinctive condition], "I am a conscientious person. I try to do a good job with the things that come my way. I enjoy American Idol at the moment, (I'm a Simon Cowell fan). I enjoy college sports...specifically I love basketball (March is my favorite time of year)...and I'm also a foodie. I specifically enjoy Italian and Middle Eastern food. There are a lot of great restaurants around that serve these types of foods and I enjoy going to them.", [equivocal condition], or "I really like U2" [control condition]. After viewing this information, participants answered a number of questions about the target including five Likert-type items measuring participants' degree of confidence in their impression of the target's extraversion. This scale included items such as "I feel very confident about my impression of the person's extraversion," and "It is difficult to make a judgment about

this person's sociability" (reverse-scored). This scale displayed acceptable inter-item reliability, $\alpha = .86$.

A contrast analysis evaluated whether participants reported greatest confidence in their extraversion judgments after viewing the disclosure from the distinctive extraversion condition, than they did after viewing the equivocal disclosure cue, while the lowest levels of confidence in participants' extraversion impressions were found after viewing the disclosure from the control condition. Participants who saw the distinctive extraversion cue reported greater confidence in their extraversion impression judgment ($n = 28$, $M = 5.42$, $SD = 1.19$) than did participants who were exposed to the equivocal extraversion cue ($n = 28$, $M = 4.61$, $SD = 1.06$), while participants who were exposed to the disclosure in the control condition reported being least confident of their impression of the target's extraversion ($n = 28$, M = 3.82, $SD = 1.56$), $t\,(81) = 4.64$, $p < .01$, $\eta^2 = .21$. An examination of the residual explained variance showed that after the expected effect was accounted for the residual explained variance was relatively small and did not achieve statistical significance, $F\,(1, 81) = 0.01$, $p > .99$. Finally, a *least significant difference* analysis of each of the groups with one another showed that after viewing the stimuli was significantly different from one another in expected directions (all p's $< .05$). Thus, the experimental induction of greater or lesser extraversion cue distinctiveness was judged to be successful. The data did not suggest that the extraversion cue induction affected participants' confidence in their judgments of intelligence. A one-way ANOVA did not find any significant differences in confidence in intelligence judgments among the distinctive cue condition ($n = 28$, $M = 4.35$, $SD =$

1.57), the equivocal cue condition (n = 28, M = 4.22, SD = 1.33), and the control condition (n = 28, M = 4.02, SD = 1.29), F (2, 81) = 0.39, p = .68.

The experimental tasks were also checked to determine that they induced higher or lower degrees of task relevance as intended. Another independent sample (N = 64) viewed the experimental task presented in the study and rated the relevance of extraversion judgments to the task on a 6-item Likert-type scale (see Appendix F) including items such as: "Knowing whether a person is a people-person is relevant to this task," and "It is not vital to this task to form an extraversion impression" (reverse-scored). A Cronbach's *alpha* reliability estimate showed that the scale displayed acceptable reliability (α = .94). As expected the participants who viewed the extraversion-relevant task responded that they viewed extraversion to be more relevant (M = 5.81, SD = 0.86) than those who viewed the extraversion-irrelevant task (M = 3.97, SD = 1.37), t (62) = 6.52, p < .01, η^2 = .41. Thus, the experimental induction of greater or lesser relevance of an extraversion impression was successful.

Chapter 5

STUDY 2: RESULTS AND DISCUSSION

This study predicted that participants would rate the target to be most extraverted when cues to the target's extraversion were both relevant and distinctive, participants would rate the target to be less extraverted when cues to the target's extraversion were either relevant or distinctive, or neither relevant nor distinctive, and participants would rate the target to be least extraverted when they saw the extraversion cue in the control condition (see Table 2 for contrast weights). In order to test this hypothesis, a contrast analysis evaluated whether means were consistent with this predicted pattern (means and standard deviations are presented in Table 3). The observed pattern of means was consistent with the pattern of means predicted by the contrast analysis, t (102) = 2.56, p = .01 (one-tailed), η^2 = .06. In order to determine whether the pattern of results was likely to be consistent with the predicted contrast but not other possible contrast patterns, the residual explained variance was analyzed (see Keppel & Wickens, 2004). After the variance predicted by the model was accounted for, there was little residual explained variance, F (4, 103) = 0.18, p = .95. Thus, the data were consistent with the sticky cues hypothesis for interpersonal impression judgments.

Discussion

Consistent with the sticky-cues hypothesis, this study suggests that distinctive interpersonal impression cues that are also task-relevant are especially potent influencers of extraversion impression judgments. In other words, the data were consistent with the trend suggesting that distinctive and relevant interpersonal cues to higher extraversion caused judgments of greater extraversion more together than they do in isolation of one

another and that both equivocal and distinctive cues caused target ratings to be larger than control cues. The size of the sticky-cue effect was not particularly large. However, it is comparable to other effect sizes reported for other studies examining the effects of different types of cues in CMC and communication modalities on impression formation. For example, Walther et al., (2009) reported an effect size of approximately $\eta^2 = .02$ for the effect of the warranting value of a cue on physical attractiveness impressions. Additionally, Hancock and Dunham (2001) reported an ordinal interaction consistent with the effect of task-relevance on impression formation with an effect size of approximately $\eta^2 = .04$. Further, a study examining the effect of system-generated cues (i. e., number of friends) in a Facebook environment found similar effect sizes ($\eta^2 = .02$) for the number of friends presented on a target's profile and participants' judgments of the target's social attractiveness (Tong et al., 2008), and another study found an effect size of $\eta^2 = .04$ for the effect of credibility cues present in a text-based message on credibility impressions (Van Der Heide & Walther, 2009).

Chapter 6

GENERAL DISCUSSION

The two experiments reported here examined how the relevance of an impression to the task and the distinctiveness of an impression cue affect impression formation in CMC. The data suggest that when individuals are exposed to more distinctive impression-bearing cues they form more extreme judgments of the characteristic upon which the distinctive cue provides information. In some situations, cues can potently influence of impressions when a task requires an individual to form an impression of some particular characteristic *and* there is a distinctive cue present that reflects upon that characteristic (i. e., an individual is seeking information about a target's extraversion and a distinctive cue to the target's extraversion is present). However, in other situations (i. e., when a distinctive categorical cue about group membership which, distinctively, reflects on a target's intelligence), the relevance of a specific impression to the task was not an important determinant of impression formation. Only the distinctiveness of a cue strongly informed impressions.

One of the contributions of this research is to extrapolate from attribution theory (Kelly, 1967, 1973) and PMM theory (Gigerenzer & Goldstein, 1996; Gigerenzer & Kurz, 2001) to inform a perspective on impression formation in CMC. This research argued that because perceivers are motivated to be efficient processors of information, perceivers do not consider all relevant social information when they form impressions of a target. Instead perceivers focus on the cues that are most relevant to the impression they need to fulfill their social goals. Further, this perspective suggested that distinctive cues allow a perceiver to form an extreme impression of a target on the basis of a single

exposure to the target. Taken together, this suggested that in CMC, where impression cues are more limited in short-term encounters, a perceiver should seek an impression cue that is relevant to his or her task, and should base his or her judgments of a target most strongly on a distinctive cue that allows a perceiver to best accomplish his or her goals.

An analogy helps to describe this perspective. One can imagine the impression formation process as building a tower of blocks. One can imagine each block as an impression cue providing an observer with information about a characteristic of the target. First, this perspective suggests that people try to build specific types of towers (i. e., try to form specific impressions) in order to fulfill their goals. Second, this perspective suggests that not all building blocks are the same size. Some blocks (i. e., equivocal cues) add only a little to the impression formation tower, other blocks (i. e., distinctive cues) are significantly larger and add more to the impression formation tower. Finally, perceivers may focus upon some already-large building blocks (distinctive cues) when a perceiver specifically seeks them. Thus perceivers are even more likely to use these blocks to provide a particularly large amount of impression-bearing information about a target.

These data offered general support for the sticky-cues perspective. Specifically, interpersonal disclosure cues were sticky when they provided information that was task-relevant and distinctively reflected upon a target's extraversion. The data also suggested that in some cases even when certain impressions are not specifically task-relevant, perceivers utilize distinctive cues to form well-developed impressions of a target's characteristics. Specifically, the first study found that a distinctive cue reflecting

positively on a target's intelligence produced more positive intelligence judgments than did an equivocal cue reflecting on the target's intelligence regardless of whether an intelligence impression helped a perceiver to accomplish his or her goals. As previously suggested, these findings may have occurred because participants were not motivated to form intelligence impressions beyond what could be inferred by the categorical university affiliation cues present in the stimuli. Generally, this finding is supportive of the SIDE model (Reicher et al., 1995). In a single, short-term exposure to a target, participants formed an impression of the target's intelligence on the basis of salient group identity cues.

The only caveat to this support is that the SIDE model (Reicher et al., 1995) requires a target to be visually anonymous in order for such group impression attributions to occur. In this study, a photograph of the target was visible on stimuli. This suggests that in some situations SIDE's requirement of visual anonymity may not be required for salient group cues to prime a group-cue-based impression of a target. Future research is required to understand the specific conditions under which group impressions (a) have primacy over individuated impressions and (b) are able to form even when visually identifying photographs of a target are present. Although the second study did show that individuating self-disclosures have a potent effect on extraversion impressions, it is not possible to draw conclusions about the primacy of group impressions because in the second study all cues to the group membership of the target were held constant. Future research should vary interpersonally individuating cues, categorical cues, and the impression relevance of a task to determine if categorical

impressions truly do form first and, if they do, if interpersonal cues may change that group impression when they are task relevant.

A related explanation of these findings may be that, in the short-term, zero history impression formation, the value of categorical impressions does not affect the impression that a perceiver forms of a target. This research assumed that categorical impression values varied among different situations and proposed that this variance should affect impression formation. It is possible that categorical impression values only affect impression formation after some period of interaction between a perceiver and a target. In this case, when it is useful to form a categorical impression of another person, cues to a person's group identity and the characteristics associated with that group identity might be especially salient and greatly shape impressions. However, when it is not useful to form a categorical impression of another person these group cues may have less impact on impressions. Finally, when a perceiver does not interact with a target (or perceive that future interaction with a target is likely), the perceiver may simply form an impression of a target that is comprised by the best available categorical cues about the target. In this study, no actual interaction between perceiver and target occurred, nor did the perceiver anticipate the possibility of interacting with the target. Because of this, perceivers may not have been motivated by the experimental task to move beyond the salient group impression brought about by the group cue. Future research that allows for greater interactivity between a target and perceiver is necessary to determine if the effect of categorical impression value on impression formation changes as interaction occurs between a target and a perceiver.

Another explanation for the findings in the first study is that participants may have focused on group-based impressions because they did not anticipate interacting with the person who ostensibly owned the Facebook profile presented in the stimulus. Walther (1994) found that when people anticipated future interaction with others in CMC, they generally show more affect, depth, and trust for their partners than when people did not anticipate future interaction with their partners. Additionally, the anticipation of future interaction has been shown to motivate people to attend to cues to a target's characteristics (Kellermann & Reynolds, 1990; Ramirez, 2007). Because the focus of this research was to examine the effect of the impression relevance of a situation and the distinctiveness of a cue on *initial* impression formation, the first study is unable to confirm this possibility. In order to determine if the anticipation of future interaction causes people to be more attentive to task demands while they form impressions of others, future research should vary the amount of anticipation of future interaction a perceiver has with a target. Such investigations may reveal that the anticipation of future interaction heightens not only people's attention to the personal characteristics of others, but also it may motivate a perceiver to pay more attention to the specific task-demands of a situation, which may, in turn, deepen impressions that helps a person accomplish their goals in CMC.

Another area for future work revolves around the clarification of the concepts of distinctiveness and relevance. This research conceptualized distinctiveness as a perceptual judgment that a perceiver made about a particular cue. That is, a cue was distinctive when a perceiver determined that the cue clearly provided information about a particular characteristic of the target. While the distinctiveness of a cue clearly must be

perceived by an observer in order for the cue to be sticky, there may also be objective characteristics that assign greater distinctiveness to cues. Future research should examine what these objective cue differences are in order to better understand the concept of cue distinctiveness.

Similarly, the present study examined relevance as a perceptive characteristic. That is, cues were task relevant when they provided information that the observer deemed relevant to the task. In the present research, this was accomplished by giving participants a task which varied in terms of how relevant participants should view a specific personal characteristic to completing the task, and this induction was instantiated by directly informing participants about the characteristic that they should find most relevant to the task. In the relatively controlled setting of the experiments presented here, this induction of impression task-relevance was successful. However, in the unregulated wilds of the Internet relevance may change according to context, and even different observers will likely bring individual differences that could affect how relevant people find certain personal characteristics to completing a task. In some cases, this may affect which cues observers select as particularly relevant. The dynamics of task-relevance on impression formation deserve future research attention.

Boundaries, Implications, and Future Directions

The present findings may be bounded by several conditions. Just because a cue is distinctive and offers a perceiver relevant information about a target may not always mean that the cue is utilized by a perceiver and affects impression judgments. If a perceiver suspects that a target may be presenting a sticky cue to receive some social benefit from that cue, it seems likely that the perceiver would not weight such a cue as

heavily as if it could be substantiated (Donath, 1999, 2007; Walther et al., 2009). Donath (2007) suggested that a great deal of suspicion surrounds self-descriptions on the Internet and thus easily manipulable cues are not as reliable and less trusted by perceivers. Walther et al.'s findings suggest that for some judgments, from which a person is expected to receive social benefit (i. e., physical attractiveness), suspicion may cause a perceiver to rely on cues with greater warranting value. However, for other judgments (i. e., extraversion) self-disclosures may be trusted. Taken together, these findings suggest that there is likely some variance in terms of the amount of suspicion about a person's disclosures of various characteristics. It seems possible that when suspicion is low that a target is inflating his or her self-presentation, task-relevant and distinctive cues may be enough to form an impression of a target. However, when suspicion of inflated self-presentation is high, task-relevant and distinctive cues may also need to have great warranting value in order to be sticky. Future research should address the possibility that the degree of suspicion a perceiver has about a target's claims may make the warranting value of cues a necessary factor of the stickiness of those cues.

This research examined impression formation in CMC after a single, non-interactive exposure to a target. This represents a departure from some previous research on impression formation in CMC that explored how impressions formed among people who were previously unacquainted over an extended period of interaction (Ramirez, 2007; Walther, 1993). Although this research did not examine the same interactive process of impression formation in CMC, sticky cues may also influence our understanding of the way impression formation occurs. First, the zero-history, text-only

interactive discussions may be informed by the presence of a social networking profile. That is, interactive discussions in CMC that start off at ground zero may be relatively rare. Because information about a discussion partner is only a Google or Facebook search away (Ramirez, Walther, Burgoon, & Sunnafrank, 2002), it may be possible that prior to interaction people have already formed a well-developed impression of one another. Further, recent technological developments have allowed people to make higher bandwidth self-presentations. For example, one is no longer limited to a text-based self-description on the Internet, it is now possible to learn about others through posted photographs and videos, through one's social network—even by what a person's friends say about them. Thus, preformed impressions may influence the interaction individuals have and subsequently the impressions they form of one another.

The present model may also inform how impressions form within the bounds of interactive CMC. Walther's (1992) SIPT suggests that people in CMC form impressions of others over time, through interactive discussions wherein cues about a partner's identity are encoded, transmitted, and decoded through text-based interaction. The findings presented by this research suggest that not all of these cues are equal. To employ the building-block analogy, some cues may have the ability, even in text-based interactive CMC, to be large blocks that have a great impact on the impressions people form of one another, while other blocks may only add a little to a person's impression of another. Walther's (1993) examination of global impression development during an extended period of interaction in CMC, which gave participants multiple tasks over the course of their interaction, found that global impressions developed at slower rates than in face-to-face interaction. However, in the end impression development in CMC

approached levels similar to face-to-face interaction. It is possible that the use of focused measures of specific impressions that are task relevant may have shown a similar pattern of narrow impression formation as was seen in Hancock and Dunham's (2001) work. It is possible that if people are given a specific task (the successful completion of which requires a focused impression of some of a partner's characteristics) these focused impressions may develop rather quickly as people are using a variety of information seeking techniques to extract the cues that help them to accomplish their goals. This may especially be the case if these cues are particularly distinctive. Future research should address these possibilities.

Limitations

One limitation of the first study may have been that a different dependent variable would be more sensitive to the actual effect of sticky cues on intelligence impression formation. In this study, participants judged targets that were ostensibly members of the Harvard University network to be more intelligent than targets ostensibly from the fictional Westlake University network. While Harvard may have been a reliable indicator of intelligence no matter the task, participants who were seeking information about the success of targets on a popular quiz show may have attended specifically to information that helped them to complete their task of predicting the best performer on the quiz show. As such, a dependent variable such as participants' predictions of the success of the target's success on a quiz show may have been more sensitive to the predicted sticky cue effects. Future research should address this possibility.

Another related limitation also concerns participants' motivation to process the stimulus profiles. In order to heighten motivation to process the profiles accurately, participants were told that the best profile evaluator would receive a 50-dollar reward. It is possible that this motivator too successfully caused participants to attend to stimulus profiles. This may explain why, in the first study, participants generally found targets from the Harvard University network to be more intelligent than those from the Westlake University network. However, in the second study where inductions were more subtle manipulations of statements of self-disclosure, participants' motivation may have been at a more optimal level. This suggests that motivation to form an impression may be an important variable that may affect the role of sticky cues in the impression formation process. This possibility deserves future research attention.

Conclusion

This research makes an important contribution to the literature regarding how people weight social information as they form impressions of others in CMC. Beyond understanding how people may form impressions of one another on social network sites, this work has a number of other practical applications. For example, understanding the dynamics of cue distinctiveness and relevance may help researchers to better understand what cues make a user of an online commerce system a trustworthy seller, or what signals might make an online health information diffuser appear to be most trustworthy. In addition to the theoretical research directions outlined above, research into the practical applications of how sticky cues may help both users to navigate social processes on the Internet and designers of CMC systems to build systems that intuitively facilitate these social processes.

Appendix A

Participant Instructions

Thank you for taking part in this study of participant evaluation. The Department of Communication has agreed to conduct this research on behalf of the [Admissions Office / Jeopardy College-Week Talent Committee]. Today, your role will be to help us by judging several of your fellow students' Facebook profiles.

The [Admissions Office / Jeopardy College-Week Talent Committee] is implementing a new program for [high school seniors who are unfamiliar with MSU that lets them spend a night in the dorms socializing with a host student / MSU students to demonstrate their mathematical abilities on a team selected to compete in a mathematical problem solving contest]. Your role will be to evaluate how good a [host the students you've been assigned / Jeopardy contestant] these other MSU students would be. The ideal candidate for this program would be someone who is [extremely extraverted and sociable / extremely intelligent].

So that you have some information to base your judgment on, you will be directed to a Facebook profile for each of the students you've been assigned to. There should be plenty of information on these profiles for you to make a judgment.

After you feel that you have formed an adequate impression of the candidate selected for you to evaluate, you may click the link at the bottom of the webpage with questions about the candidate.

Please take as much time as you need to form an impression of the candidate.

Appendix B

Intelligence Impression Measure

Personality questions: Please read the following statements carefully and click the circle to mark the choice that best describes the extent to which you agree or disagree with the statement about the person whose information you just looked at. Use the following choices to indicate whether your agreement with the statement.

Describe the other person honestly and as accurately as possible. Even if you did not get much information that would definitely tell you how to answer the question, indicate your most likely impression.

1. This person is intelligent.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

2. This person knows lots of facts.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

3. This person is very smart.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

4. This person enjoys intellectual challenges.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

5. I could trust this person's answer to almost any question to be correct.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

Appendix C

Group Perception Study

In this research study you will be asked to look at some facts about several individuals and answer some questions about those individuals. Your participation should take no longer than ten minutes.

You will only be given a small amount of information about the individuals in the study, please do your best to answer the questions even though you have only a small amount of information about the person.

PERSON #1

Fact: This person is a student at Harvard University.

1. I feel very confident about my impression of the person's intelligence.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

2. It is difficult to make a judgment of this person's intellectual abilities.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

3. Knowing what I know about the person I can judge his/her intelligence accurately.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

4. I am uncertain whether or not this person is smart.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

5. I am confident in my judgment about whether he/she knows a lot of facts.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

Appendix D

Intelligence Impression Relevance Scale

1. In order to complete this task I need information about the person's intelligence.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

2. It is not vital to this task to form an intelligence impression.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

3. Paying attention to information about whether a person is very smart or not is very important to this task.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

4. To complete this task it is NOT important to know anything about a person's intelligence.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

5. To complete this task it would be good to know whether a person is bright.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

6. Knowing whether a person is brilliant is relevant to this task.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

Appendix E

Extraversion Impression Measure

Personality questions: Please read the following statements carefully and click the circle to mark the choice that best describes the extent to which you agree or disagree with the statement about the person whose information you just looked at. Use the following choices to indicate whether your agreement with the statement.

Describe the other person as honestly and as accurately as possible. Even if you did not get much information that would definitely tell you how to answer the question, indicate your most likely impression.

1. This person likes to have a lot of people around.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

2. This person laughs easily.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

3. This person would rather go his/her own way than be a leader of others.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

4. This person really enjoys talking to people.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

5. This person usually prefers to do things alone.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

6. This person is a very active person.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

7. This person doesn't consider him/herself especially "light hearted."

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

8. This person likes to be where the action is.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

9. This person often feels as if he/she is bursting with energy.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

10. This person is a cheerful, high-spirited person.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

11. This person is not a cheerful optimist.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

12. This person's life is fast-paced.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

Appendix F

Extraversion Impression Relevance Scale

1. In order to complete this task I need information about the person's extraversion.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

2. It is not vital to this task to form an extraversion impression.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

3. Paying attention to information about whether a person is a people-person is very important to this task.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

4. To complete this task it is NOT important to know anything about a person's sociability.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

5. To complete this task it would be good to know whether a person is outgoing.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

6. Knowing whether a person is a people-person is relevant to this task.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

Appendix G

Person Perception Study

In this research study you will be asked to look at some facts about several individuals and answer some questions about those individuals. Your participation should take no longer than ten minutes.

You will only be given a small amount of information about the individuals in the study, please do your best to answer the questions even though you have only a small amount of information about the person.

PERSON #1

Fact: This person makes the following claim about him/herself: "I am a sociable people-person...until you get to know me, then I'm EXTREMELY extraverted and outgoing!!!"

1. I feel very confident about my impression of the person's extraversion.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

2. It is difficult to make a judgment of this person's sociability.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

3. Knowing what I know about the person I can judge his/her outgoingness accurately.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

4. I am uncertain whether or not this person is a people-person.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

5. I am confident in my judgment about whether he/she is sociable.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

Appendix H

Table 1.

Item - Factor Loadings

	Factors			
	Study 1		Study 2	
Items	1	2	1	2
1. This person knows lots of facts.	.77*	.13	.84*	.13
2. This person is very smart.	.72*	.09	.89*	.20
3. This person enjoys intellectual challenges.	.90*	.15	.84*	.13
4. I could trust this person's answer to almost any question to be correct.	.43*	-.05	.63*	.04
5. This person likes to have a lot of people around.	.21	.43*	.08	.77*
6. This person would rather go his/her own way than be a leader of others.	.16	.83*	.21	.54*
7. This person really enjoys talking to people.	-.23	.66*	.18	.75*
8. This person is a very active person.	.11	.67*	.22	.67*
9. This person likes to be where the action is.	.03	.82*	.06	.74*
10. This person often feels as if he/she is bursting with energy.	--**	--**	-.01	.69*
11. This person is a cheerful, high-spirited person.	-.01	.56*	.15	.76*
12. This person is not a cheerful optimist.	.08	.79*	.03	.36*
13. This person's life is fast-paced.	.21	.66*	.01	.59*

Notes. Factor loadings were estimated using the centroid method. * indicates factor hypothesized to drive item. Factors 1 and 2 are intelligence and extraversion, respectively. ** indicates item was excluded from analysis.

Appendix I

Table 2.

Contrast Weights for Predictions

	High Cue Distinctiveness		Low Cue Distinctiveness		Control	
	High Cue Relevance	Low Cue Relevance	High Cue Relevance	Low Cue Relevance	High Cue Relevance	Low Cue Relevance
Study 1: Intelligence Judgments	+3	-1	-1	-1		
Study 2: Extraversion Judgments	+3	+1	+1	+1	-3	-3

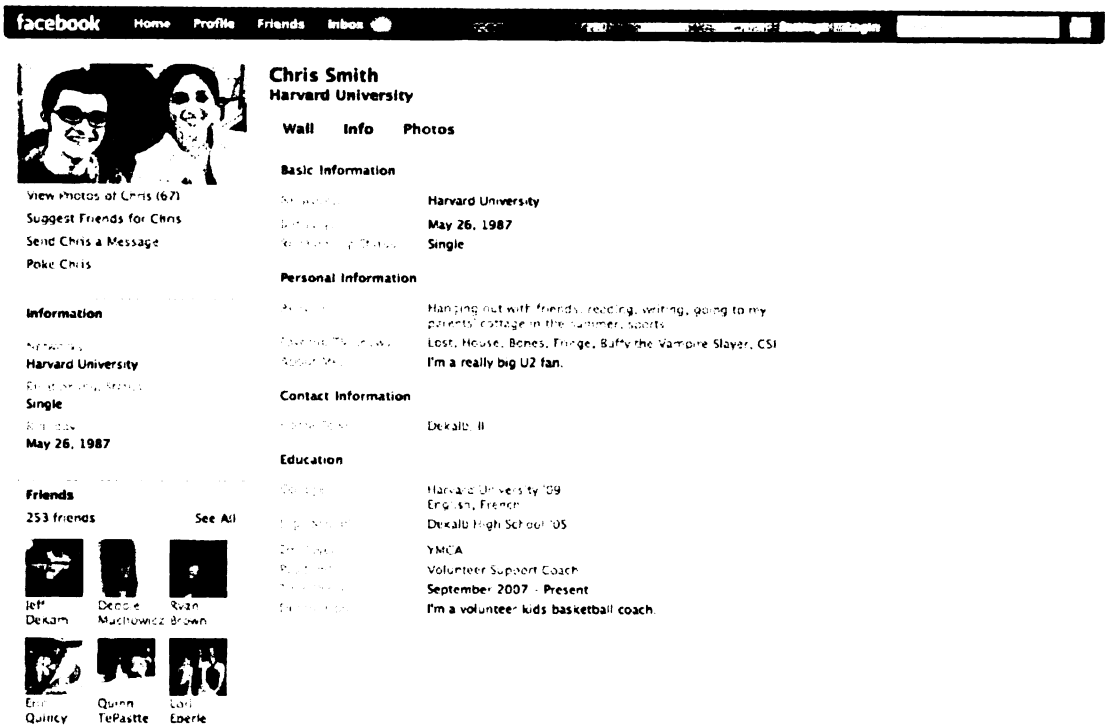
Appendix J

Table 3.

Means (and Standard Deviations)

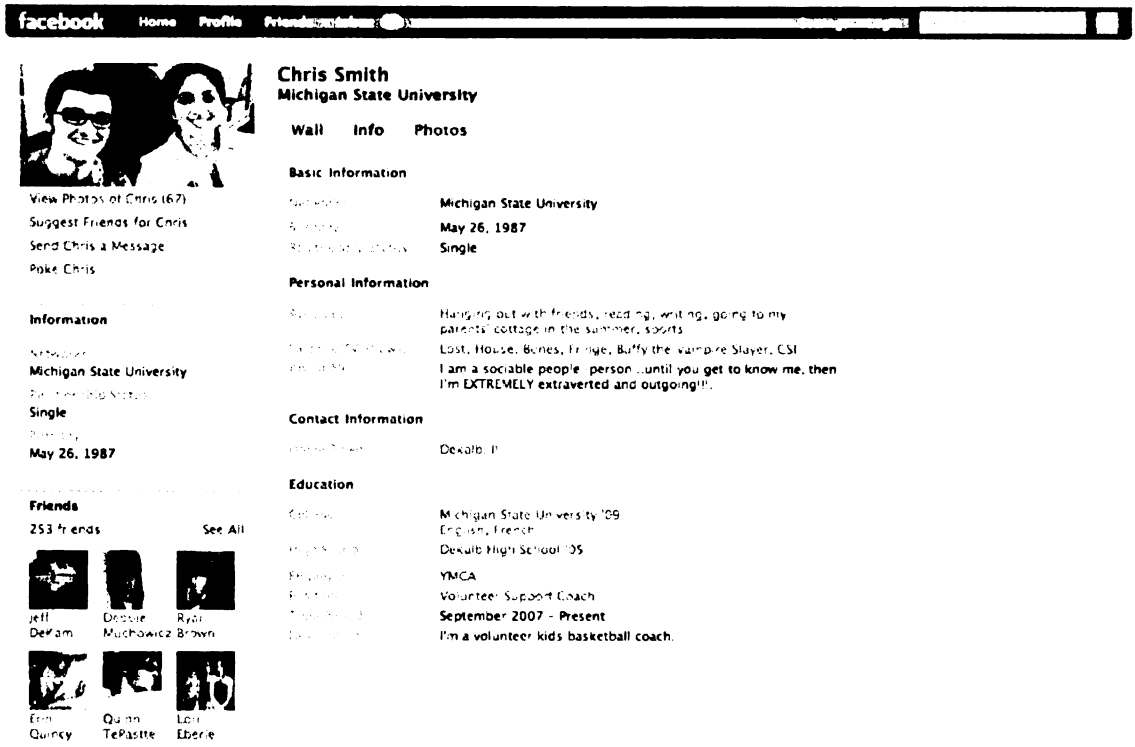
	High Cue Distinctiveness		Low Cue Distinctiveness		Control	
	High Cue Relevance	Low Cue Relevance	High Cue Relevance	Low Cue Relevance	High Cue Relevance	Low Cue Relevance
Study 1:						
Intelligence Judgments	4.92 (0.63) n = 18	5.08 (1.19) n = 19	4.59 (0.88) n = 23	4.47 (0.94) n = 19		
Study 2:						
Extraversion Judgments	4.79 (0.98) n = 18	4.53 (0.66) n = 18	4.50 (0.89) n = 18	4.50 (0.76) n = 18	4.13 (0.74) n = 18	4.27 (0.87) n = 18

Figure 1



Study 1 Sample Stimulus Material

Figure 2



Study 2 Sample Stimulus Material

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