

Claremont Colleges Scholarship @ Claremont

Scripps Senior Theses

Scripps Student Scholarship

2015

Is the Reception Better on a Different Channel? Interpersonal Communication Satisfaction of Introverts and Extraverts During Face-to-Face Versus Instant Messenger Conversations

Christina S. Whalen
Scripps College

Recommended Citation

Whalen, Christina S., "Is the Reception Better on a Different Channel? Interpersonal Communication Satisfaction of Introverts and Extraverts During Face-to-Face Versus Instant Messenger Conversations" (2015). *Scripps Senior Theses*. Paper 543.
http://scholarship.claremont.edu/scripps_theses/543

This Open Access Senior Thesis is brought to you for free and open access by the Scripps Student Scholarship at Scholarship @ Claremont. It has been accepted for inclusion in Scripps Senior Theses by an authorized administrator of Scholarship @ Claremont. For more information, please contact scholarship@cuc.claremont.edu.

**IS THE RECEPTION BETTER ON A DIFFERENT CHANNEL?
Interpersonal communication satisfaction of
introverts and extraverts during face-to-face versus
instant messenger conversations**

by

CHRISTINA S. WHALEN

**SUBMITTED TO SCRIPPS COLLEGE IN PARTIAL FULFILLMENT OF THE DEGREE
OF BACHELOR OF ARTS**

Professor Judith LeMaster

Professor Kevin Carlson

DECEMBER 12, 2014

Abstract

Satisfying communication is sometimes hard to come by. Due to differences in social expression and reception, individuals tend to express and receive communication in dissimilar ways, especially within different social contexts. In the present study, the effects of personality and channel of communication on individual and mutual satisfaction after a conversation will be tested. Participants will take a personality test to determine introversion or extraversion. They will then be randomly assigned to conversation pairs which will communicate either through an instant messaging (IM) program or face-to-face (FtF). Satisfaction will be determined using a modified version of the Interpersonal Communication Satisfaction Inventory (ICSI). It is hypothesized that individual satisfaction will be significantly higher for introverts in the IM condition and extraverts in the FtF condition. With regards to mutual satisfaction, it is hypothesized that pairs with dissimilar personalities in the FtF condition will be significantly lower than all other pairings. Finally, it is expected that individuals with high ratings of satisfaction will also report feeling as though they were able to express themselves more authentically. The results of this study will contribute to our view of interpersonal relationships in the modern digital age, as well as present possibilities for creating more mutually beneficial communication between differing personality types.

Keywords: *communication, satisfaction, interpersonal communication, collaborative communication, personality, introversion, extraversion, instant messaging mutual satisfaction*

IS THE RECEPTION BETTER ON A DIFFERENT CHANNEL?**Interpersonal communication satisfaction of introverts and extraverts during face-to-face versus instant messenger conversations**

“The single biggest problem in communication is the illusion that it has taken place.”

–George Bernard Shaw

It can be difficult to find a way of communicating with others so that both participants in the conversation feel simultaneously heard and understood. This can leave one or both people feeling ultimately unsatisfied with the conversation (Smith & Wilson, 2010). Dissatisfaction can follow due to a variety of reasons, one of which is a difference in personality traits. Another aspect of conversation that can affect satisfaction is the channel of communication used (Riggio, 2013). Especially for people with disparate personality traits, choosing to talk online or face-to-face can mean the difference between having a satisfying or dissatisfying conversation (Amichai-Hamburger, 2002; Amichai-Hamburger et al., 2002; Peter et al., 2005). However, when a conversation has gone well, it may not necessarily mean that the feeling is mutual. In the present proposed study, the aspects of communication that affect individual and mutual satisfaction, specifically the platform used to communicate (i.e., the channel) and the personalities of the people who are communicating, will be observed in an attempt to expand the knowledgebase that currently exists regarding interpersonal communication and potentially discovering new ways of improving interpersonal communication both in the workplace and our everyday lives.

Interpersonal Model of Communication

Communication happens in many ways by many means, including verbal, written, and digital correspondence, facial expressions, gestures, inflections, and even silence. However, it is important to remember that communication is not a solely individual-focused process. In effective communication, information is both sent and received. The most commonly accepted model of communication in Social Psychology is called the Encoder/Decoder Model (Krauss & Fussell, 1996; Riggio, 2013). In this model, a message (e.g. a thought) is encoded by the individual sending the message (i.e. the encoder). This message is then transmitted to the receiver of the message (i.e. the decoder) via some selected channel of communication. The decoder then processes the message's information. When this information is received, the decoder then conveys acknowledgement or feedback (either verbal or non-verbal) to the sender.

While the information is sent across the chosen communication channel, it has the potential of being disrupted by noise. Noise in this context is any physical or psychological distractor that may influence the flow of effective communication (Riggio, 2013). If there is too much noise, the message may be misinterpreted by the decoder, making it difficult for both people to be on the same page. According to Clark and Wilkes-Gibbs (1986), both people involved in interpersonal communication make active efforts to ensure that they have similar understandings of a message before moving to the next one. This allows both individuals to have a concrete source of referential context. Having that foundation allows both people to know how to phrase their messages in a way that will allow for the conversation to flow without interruption. As the conversation progresses, both people are

able to create meaning. The combination of meaning and flow lead to the perception of effective communication with which each person can be satisfied (Hecht, 1978).

In the present study, communication is viewed both from the perspectives of the individuals and the collective response of the dyad. As discussed above, if one person in the dyad is unable to encode or decode messages in a way that is compatible with their discussion partner, the satisfaction of one or both of the individuals may be compromised.

At this point personality trait differences influence the interaction. Individuals with differing personality traits such as introversion and extraversion (discussed later) have different ways in which they approach socialization (Little, 2014a). Their differences in social expression and reception may in turn affect how each individual encodes and/or decodes information. Specifically, either too much or too little audiovisual social stimulation may lead them to tune out of the conversation (due to a reactionary response from the central nervous system discussed later), which would in turn disrupt their ability to decode information and the overall flow of the conversation (Little, 2014a, 2014b).

However, with the use of a communication channel that is not face-to-face, such as through a computer program, the decrease in immediate stimulation and constant presence of social interaction may serve as a mediator between personalities. It is thus hypothesized that those with similar personality traits who communicate face-to-face will be mutually satisfied, whereas those with dissimilar personality traits will only be mutually satisfied when using a computer-mediated form of communication.

Channels of Communication

No matter how advanced communication technologies become, face-to-face communication always remains the standard of interpersonal discourse, against which all

other channels of communication are compared. But, as technology develops, new methods of communicating inevitably emerge.

As Nayab (2013) explains, the development of new communication technology has decreased the cost of connecting with others over long distances and increased the quality, speed, accessibility, and efficiency of sharing information. Due to these quality shifts, the dependence on digital devices has also greatly increased, whereas the dependence on face-to-face conversation has decreased. Every means of communication that currently exists, including telephone calls, email, social media websites, text messages, instant messages, video chats, picture exchanges, writing letters, and even talking face-to-face, comes with its own unique characteristics, but all of them allow individuals to transmit ideas and create interpersonal connections (Lanchantin et al., 2012).

It is possible that digital communication may offer potential remedies for related issues that have been around for decades. The use of modern technologies may provide communicative opportunities more suited for people with certain personality traits, and assist individuals who have differing approaches to interpersonal contact in finding common ground. It is believed that instant messaging in particular will allow individuals with different personalities to engage in more satisfying and effective communication than they would face-to-face.

For the last couple of generations, instant messaging has increased in popularity (Instant Messaging, 2014). Today, instant messaging is one of the most prominently preferred methods of communication (Riggio, 2013). Websites such as Facebook and Google as well as programs such as Outlook, Windows Live, and Office 365 have incorporated instant messaging programs into their user interfaces. Corporate offices are

even beginning to include instant messaging programs into their employee networks (InformationWeek, 2009). This allows information to be discussed in real time between co-workers without the hassle or confusion of a conference call or arranging a meeting. It can thus be seen that digital communication has begun to establish itself as an inevitable and handy conversational tool worth researching. Through further research, the scientific community will be able to discover increasingly better uses for the technology and possibly figure out various means of improving technology with each new development.

One of the reasons that instant messaging (IM) has become so wide-spread is its similarity to oral communication, rather than written communication; a similarity which makes instant messaging programs especially useful when comparing face-to-face and computer-mediated conversation. The oral code and the written code have many distinct features. For example, it is evident that the oral code is more verb-oriented and the written code is more noun-oriented (Cellier, 2003a; Halliday, 1985; both as cited in Lanchantin et al., 2012). In written communication, nouns serve as a means of establishing social context. Since oral communication is much briefer and context is evident through the use of inflection, gestures, and facial features, verbs, rather than nouns, are more frequently used (Lanchantin et al., 2012).

The distinctions between oral and written codes are important because they lay the foundation for distinguishing the differences between text messaging (SMS), writing e-mails, and chatting through an IM program. During preliminary discussions in preparation for this study, it has been unclear to many people how these three forms of digital communication differ and why the choice of IM for this study is so important. In Lanchantin et al.'s (2012) study, they establish that Digital Writing in Instant Messaging

(DWIM) is a hybrid of written and oral communication which has properties more similar to the oral code than the written code. They first affirmed its hybrid status by establishing that when IMing, individuals will use verbs (function words) and nouns (content words) in equivalent amounts. They then also found that when conversing over IM, individuals tend to use phonetic forms of words rather than traditional spellings or grammatical usages (e.g. typing *aaaaahh* instead of *ah*). This usage sets DWIM apart from the digital writing code used in e-mails, which Panckhurst (2009, as cited in Lanchantin et al., 2012) found to be more closely related to the traditional written code. Panckhurst also identified that text messaging (SMS) is more closely related to the oral code. Panckhurst's findings on SMS and Lanchantin et al.'s findings on DWIM provide evidence that the grammatical, lexical, and syntactic patterns for DWIM are unique and separate from those of SMS. This is an important distinction, in that it validates the use of IM as a comparable digital equivalent for face-to-face (FtF) communication over SMS and email. When analyzing communication differences between analog and digital channels, using IM as the digital channel of communication will ensure that the results collected from the IM and FtF conditions in this study will be as comparable as possible.

Regardless of their similarities, IM and FtF communication hold another stark difference between them: the presence (or lack) of non-verbal social cues. As mentioned previously, FtF oral communication involves the presence of certain contextual social cues such as inflection, facial expression, and gestures. Non-verbal cues are considered an integral part of social presence and the communicative process (Abercrombie, 1968; Krauss & Fussell, 1996; Riggio, 2013; Tracy & Robles, 2013). For introverted and extraverted individuals, the presence of social stimuli can have an immense impact on their

experience of communication and interpersonal interaction (Little, 2014; Ponari et al., 2013).

Introversion and Extraversion

Carl Jung (1921) first coined the terms extravert and introvert. In their original definitions, extraverts are identified as individuals whose focus is chronically directed away from themselves, whereas introverts' attentions are focused inward. Jung believed that while every individual has both extraverted and introverted personality traits, one type is usually more prominently expressed. In terms of the Big Five personality traits, introversion and extraversion are extremes of a continuum within the surgency, or extraversion axis of personality (Caprara et al., 1993; Cohen & Schmidt, 1979; Costa & McCrae, 2008; Goldberg, 1992). The elements of each personality type occur in individuals via differences in optimal levels of arousal in the neocortex of the brain (Little, 2014). In their daily lives, extraverts tend to run below their optimal level of neocortical arousal. Due to this deficit, they are characteristically typified by their strong desires for constant social interaction, excitement, activity, and overall engagement with the world. This constant stimulation energizes them, as does the pursuit of such activities as thrill seeking and risk taking. Introverts on the other hand have a resting point above their optimal arousal levels. This leads them to become more reclusive and quiet. Introverts typically enjoy solitude, dislike large amounts of socialization, and do not have a high desire for excitement or sensory stimulation (Little, 2014a). In contrast to extraverts, introverts are energized by quiet time alone or with small groups of close friends.

Due to their differences in lifestyle and socialization preferences, it can be hypothesized that if an introvert and extravert came into social contact, the interaction

would be overwhelming for the introvert and underwhelming for the extravert, leaving neither closer to their optimal arousal levels. One study done by Cuperman & Ickes (2009) was able to show trends that hinted at such a result in face-to-face conversations, where the best conversational outcomes were from extravert-extravert pairs, next introvert-introvert pairs, and last introvert-extravert pairs. Further support for this hypothesis can be gleaned from the generally accepted characteristic of extraverts as being more expressive than introverts (Extraverted or Introverted, 2014; Hall, 2014).

There is a third subset of the extraversion axis that addresses those who fall into the middle of the continuum. These individuals are known as ambiverts (Cohen & Schmidt, 1979). Ambiverts are able to traverse both introverted and extraverted qualities without experiencing exhaustion from too much social interaction or restlessness from too little. While ambiverts may account for a large number of individuals in the general population, this study is focused specifically on the needs of those with more polarized personality characteristics, and not the general populace. Due to this and their ambiguous personality orientation, ambiverts will be controlled for during participant selection and not analyzed in this study.

It is also important to distinguish that introversion is not synonymous with social anxiety or shyness. While introversion is one aspect of social anxiety and shyness, not all introverts are socially anxious or lack social confidence. Many introverts are in fact very adept at socialization, but simply prefer not to actively socialize (King, 2014). Regarding the Big Five personality traits, social anxiety is the combination of being low on extraversion and high on neuroticism, and shyness is the combination of being low on extraversion and low on openness to experience. Neither social anxiety nor shyness is

directly focused on in this study; however, due to the fact that each has an element of introversion, past research that has been done on these two elements may be relevant to anticipating the outcomes of the study at hand. This may be the case given that the results of those past studies could have been more so a product of the introversion, rather than the neuroticism of social anxiety or the lack of openness of experience involved in shyness.

These distinctions between personality characteristics are crucial to the understanding of this study. Due to their differences in social preferences and behaviors, introverts and extraverts present a variety of differing characteristics that have a high potential for affecting how satisfactory a conversation is for both parties. Conflicting expectations and ideals for the conversation may prevent the dyad from forming a mutual contextual foundation of understanding and sabotage their collective ability to form a flowing, effective, overall satisfactory experience of the conversation. However, how each individual affects the other is only part of the equation for a successful conversation. Additional noise that can conflict with a positive conversational outcome is added by an individual's internal attempts to present his or herself in a way that is personally satisfying (Hecht, 1978).

True and False Selves

Every individual has multiple selves that make up their personality, each of which is expressed in different contexts (Goffman, 1959; Higgins, 1987; Hogg et al, 1995; Jung, 1953; Stryker & Burke, 2000; Tajfel & Turner, 1979; Winnicott, 1965). Two especially prominent versions of the self that have been given a decent amount of attention are the *true self* and the *false self* (Higgins, 1987; Rogers, 1951, as cited in Tosun, 2012; Winnicott, 1965). The false self is characterized as the façade that one dons, or the set of

overt behaviors and characteristics that are expressed during interaction with others.

Although, it should be noted that “false” does not mean fake here; it merely means that it is not equivalent to the true self. The false self can instead be understood in terms of the actively expressed social self, which one utilizes during conversations with strangers, acquaintances, and other individuals to whom one may not necessarily feel ready or capable of opening themselves up. The true self, on the other hand, was originally defined by Carl Rogers as the set of characteristics that one actually has (similar to the *actual self*). However, Rogers also noted that many of those characteristics are not fully expressed in face-to-face conversation (Rogers 1951, as cited in Tosun, 2012; Schlegel et al., 2013). With the rise of computer-mediated conversation in society, Bargh, McKenna, and Fitzsimmons (2002) developed a theory of the true self on the internet, explaining that in online social contexts, it can often be much easier to express elements of the true self than when communicating face-to-face.

Connection to and expression of the true self has been shown to be crucial to the development of an astounding wealth of positive psychological development and cognitive functioning outcomes (Erikson, 1963; Miller, 1979; Rogers, 1951; Schlegel et al., 2013). Rogers’ understanding of the true self included the notion that if one could develop an understanding of their real, internal self and learn to be in tune with it, then they could achieve higher levels of satisfaction in life. Indeed, studies have shown that true self-expression leads to a greater experience of meaningfulness in conversation and life (Krause, 2007; McGregor & Little, 1998). Meaningfulness itself has then been positively correlated with both life satisfaction and quality of life (Krause, 2007; Steger & Kashdan, 2007; Zika & Chamberlain, 1992). It is hypothesized in the present study that a portion of the

satisfaction that individuals experience during communication with others is dependent on whether they feel they are freely able to accurately express more authentic thoughts and feelings, present themselves in a way that they actively intend, and in turn come close to expressing their true self, rather than their false self.

Distinguishing between these aspects of the self has become the focus of a number of studies which analyze self-expression on the internet. In Bargh et al.'s (2002) study, participants were randomly assigned to interact with a partner either face-to-face or through an internet chat room program. It was found that in general, people seem to be more capable of accessing and expressing their true selves when interacting with others over the internet, whereas the false self was more likely to be expressed during traditional face-to-face interactions. These findings were taken a step further in Amichai-Hamburger, Wainapel, and Fox's (2002) study, wherein they looked at the accessibility of the true and false selves for introverts and extraverts. Their findings indicated that introverts were more prone to identify the self that they expressed online as more authentic, whereas extraverts identified the self that they put forward during face-to-face interactions as more true to themselves.

The research that Bargh et al. (2002) and Amichai-Hamburger et al. (2002) conducted provides evidence that for everyone, but especially for individuals with introversion, the internet provides a unique opportunity for self-expression (Turkle, 1995). Face-to-face communication involves a variety of real-time social cues and assorted stimuli that can become overwhelming in conversation for those who are introverted (Evitts & Gallop, 2011; Hammick & Lee, 2014). Due to its lack of social cues and direct physical presence, computer-mediated forms of communication have been found in

multiple studies to be a preferable method of social interaction for introverted, socially anxious, and shy individuals (Amichai-Hamburger, 2002; Amichai-Hamburger et al., 2002; Bulu, 2012; Hammick & Lee, 2014; High & Caplan, 2009; Indian & Grieve, 2014; Marriott & Buchanan, 2014; Peter et al., 2005; Pierce, 2009; Tosun & Lajunen, 2010). Given all of these findings, it is hypothesized that individually, introverts will feel more satisfied with online communication and extraverts will feel more satisfied with face-to-face communication.

Communication Satisfaction across Channels

In conclusion, the following study proposal aims to provide evidence in support of these hypotheses:

1. Individual satisfaction will be significantly higher for introverts in the IM condition and extraverts in the FtF condition.
2. Mutual satisfaction will be significantly lower for dyads with dissimilar personality traits in the FtF condition.
3. Each individual who rated their conversation as satisfying will also have a markedly high scoring of the statement “I felt that during the conversation I was able to present myself in a way that felt authentic to who I am.”

The results of this study may provide information that could change the way in which individuals approach interpersonal communication, lead to more positive opinions in regard to modern forms of communication, improve our understanding of the role that personality plays in our daily lives, and validate the importance of being true to oneself.

Proposed Method

Participants

The target population for this study consists of adults born after 1985 (ages 18-29) who feel comfortable and familiar with instant messenger programs. This restriction on the age of participants is due to a belief that DWIM is akin to a second language for those who grew up using it. Comparing individuals who grew up communicating online with instant messaging programs from adolescence to individuals who were not introduced to the technology until their later years could skew the results. In order to control this potential difference, it is the focus of this study to only observe participants who were at most teenagers when instant messaging became popularized in 1997 (AOL, 2014; Schroer, 2004).

Fliers and advertisements will be posted in a variety of online locations and local coffeehouse message boards, requesting participants. Those who volunteer will be compensated with \$5 and the researchers' gratitude. While participant demographic information is not pertinent to the aims of the study, demographic information will be collected. It is expected that given the racial demographics of the Los Angeles area, participants will be predominantly white or Hispanic.

For this 2 x 2 x 2 (Extravert/Introvert x Extravert/Introvert x IM/FtF) study, it is hoped that there will be at least 50 pairs of participants per condition, with a total of about 300 participants. The predictor variables consist of the personality trait of each participant (introvert or extravert) and the condition that the participant is assigned to (IM or FtF). The dependent variables are individual communication satisfaction and mutual communication satisfaction.

Materials

An even number of computers with an instant messenger client installed, internet access, and multiple interview rooms will be needed. There will be three measures used during the course of the study. The first is the NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 2008). The NEO PI-R provides a comprehensive analysis of adult personality based on the Five-Factor Model (FFM) of personality. The NEO-PI-R takes 35-45 minutes to complete and is self-administered. The measure contains 240 items and 3 validity items, and requires a 6th-grade reading level. Each item is rated on a 5-point scale. Internal consistency coefficients range from .86-.95 for domain scales and from .56-.90 for facet scales. The NEO PI-R is validated against other personality inventories as well as projective techniques. The result of this personality test will provide information on whether participants are introverted or extraverted, as well as information regarding neuroticism and openness to experience which may disqualify participants. The second measure used in this study is the Island Task, an ice-breaker activity designed by the researchers that asks participants to choose 9 non-essential items (meaning not food, shelter, etc.; 9 items total, not each) between the two of them that they would want to take with them to a deserted island (see Appendix A for prompt). This task is designed to initiate communication between participants in such a way that encourages sharing information, which may help pairs develop a rapport. The third and final measure used will be a slightly modified version of the Interpersonal Communication Satisfaction Inventory (ICSI; Hecht, 1978; see Appendix B). This measure consists of 19 Likert-scale type items (*Strongly Disagree* [1] to *Strongly Agree* [7]), where 8 items are reverse-coded. Participants are asked to rate a series of statements based on the conversation they just had

(e.g., *I would like to have another conversation like this one, I had something else on my mind..., I felt I could speak freely with the other person*). The ICSI is designed to evaluate how satisfied participants are with their conversations. In this study, mutual satisfaction is calculated by averaging the satisfaction scores of the partners in each dyad. An average score of 5-7 would denote an individually or mutually satisfying conversation experience, whereas an average score of 1-3 would denote an individually or mutually dissatisfying conversation experience. When looking at mutual satisfaction averages, only the averages of pairs where both participants have individual averages of 5 or above should be calculated. This measure in its original form has a reliability coefficient of .96 among those who interacted with strangers and validity coefficients of .64-.87.

After the ICSI, an additional question will be asked of the participants to gauge whether they felt they were able to express their true selves in the conversation. This question will read, "I felt that during the conversation I was able to present myself in a way that felt authentic to who I am."

Procedure

Upon providing consent, participants will complete the NEO-PI-R measure online, preceded by a consent page and followed by a partial de-briefing. Once multiple participants have taken the test and been categorized by personality, researchers will randomly assign individuals to a partner and condition. Researchers will then coordinate a time for each pair to come into the lab.

At the lab, all participants will be asked to provide consent once again. Participant pairs that have been assigned to the Face-to-Face condition will be taken to a room already furnished with two printed copies of the Island Task. Each pair will be left to complete the

task for 20 minutes. Before leaving them to it, a researcher will tell the pair to take their time and that if they need anything, then they should knock on the interview room door. Maintaining an ambiguous time frame will ensure that participants are not concerning themselves with time constraints when they should be focused on the task at hand.¹

For pairs that have been assigned to the instant messenger condition, everything will be the same except they will be taken to separate, computer-equipped rooms and communicate about the task via an instant messenger program.

After 20 minutes elapse, the researcher will return and inform participants that the task is over. The participants will then be escorted to separate rooms (different from the original room) where they will be asked to complete the ICSI satisfaction questionnaire. When finished, the participants will be thanked, debriefed, and compensated separately.

Ethics

Results obtained from this experiment have the potential to contribute to the literature that shapes how interpersonal communication is approached and understood by the psychological community and the general population. This research is also promising with respect to the development of future therapeutic practices. The results that could be obtained have the potential to improve our general understanding of interpersonal social behavior and further clinicians' abilities to most appropriately accommodate the needs of different personality types in therapeutic settings. But no matter the outcome of its results, this study may allow for the crafting of a better picture of how people with different personalities interact, thus informing future research as well.

¹ Research has found that when given a time constraint, strangers who communicate through a computer are less likely to engage in friendly, pro-social communication than those who interact face-to-face (Walther et al., 1994, as cited in Finkel et al., 2012). For the purposes of this study, participants will not be notified of their time constraint in order to avoid any discrepancies in the potential for social behavior.

The risks that the participants may face are minimal. Those who take part will not encounter any discomfort that they would not encounter on a daily basis in the context of their normal lives.

One possible concern regarding the anonymity of participants and confidentiality is the fact that they will be exposed to fellow participants without obstruction during the Face-to-Face Communication condition. During the course of the study, participants will be told that they do not have to provide their real name and may utilize an alias if desired. They will be told that they are by no means required to provide any personal information. However, given the nature of the ice breaker activity, they may share information about personal interests and ideals with their partners. Also, because participants will be face-to-face, their physical features will be directly visible. While the participants could be made to interact verbally without seeing each other's faces, this would severely impact the aims of the study. Considering that seeing and interacting with strangers is something that one could very likely encounter on a daily basis, this element of the study also does not exceed minimal risk. Any and all identifying information collected from participants by the research team in order to contact and pair them up will be destroyed once data collection is complete. Before information is destroyed, the data sets linked to each participant will be coded with a participant number. This is the extent of identifying information that will be kept. No visual or audio recordings will be taken and no instant messages will be retained.

Before beginning, participants will be told that if they feel particularly uncomfortable with the conditions of the study or with the partner that they have been assigned, then they may choose to opt out of the study. It is preferable that the participants

feel as comfortable as possible during the stages of this study. In case of any unforeseen circumstances, a researcher will be posted outside the experimentation room at all times.

This study does not involve any deception or interaction with protected populations. Participants will not be asked to answer any questions regarding sensitive personal information or questions concerning provocative topics and issues that may cause discomfort. All participation will be voluntary and require the individual's consent. No one will be coerced to participate. The participants in the study will not receive any particular personal benefit aside from the money with which they are compensated for their time and a heartfelt thank you from the researchers. All participants will be debriefed and given the chance to ask questions after they complete the study or choose to opt out.

The benefits of this study far outweigh any potential risk to the participants. With these circumstances, it is evident that this study does not pose any significantly concerning or controversial elements and abides by ethical research standards.

Proposed Results

In order to test whether satisfaction is higher for introverts in the IM condition, the satisfaction ratings of introverted participants in the IM condition would be compared to the ratings of those in the FtF condition using a differences t-test. It is expected that introverts in the IM condition will have significantly higher satisfaction ratings than introverts in the FtF condition. This conclusion is based on a body of research which suggests that due to the overwhelming nature of face-to-face interaction for introverts, the lack of immediate social presence in the IM condition would allow them to communicate more effectively, express their true selves more accurately, and thus find more overall satisfaction during the interaction than if they were faced with the stressor of social over-

stimulation during a face-to-face encounter (Amichai-Hamburger et al., 2002; Bargh et al., 2002; Cuperman & Ickes, 2009; Little, 2014a, 2014b; Krause, 2007; McGregor & Little, 1998; Schlegel et al., 2013).

When testing whether satisfaction is higher for extraverts in the FtF condition than extraverts in the IM condition, the satisfaction ratings for extraverted participants in each condition will also be compared using a differences t-test. The result of this test would most likely suggest that extraverts in the FtF condition have significantly more satisfying conversations than extraverts in the IM condition. These results are expected in light of research which suggests that in contrast with introverts, the presence of another physical person and the social stimulation that they bring will be energizing for extraverts (Extraverted or Introverted, 2014; Hall, 2014; Little, 2014a, 2014b). In addition, research has found that extraverts are able to more effectively express their true self in face-to-face interactions than through computer-mediated means (Amichai-Hamburger et al., 2002; Krause, 2007; McGregor & Little, 1998; Tosun, 2012).

Next it would be tested whether mutual satisfaction is significantly lower for dyads with dissimilar personality traits in the FtF condition when compared to dissimilar IM dyads and all similar dyads. It is expected that partners with dissimilar personality traits who communicated FtF would be significantly less satisfied with their conversations than both dissimilar partners in the IM condition and similar partners in both the IM and FtF conditions. These results are expected due to the understanding that in a dissimilar FtF pair, neither partner would be particularly satisfied: the introvert could feel over-stimulated by the extravert's sociable behaviors and presence while the extravert could feel under-stimulated by the introvert's lack of pro-social behavior.

All other pairings are near-ideal or effectively mediated as such that for introvert-introvert pairs in the IM condition, both partners would be in their element, on the internet with limited social stimulation and the freedom to express their true selves as effectively as possible. For introvert-introvert pairs in the FtF condition, the more down-played nature of their socialization styles would cater to their individual needs for minimal social stimulation, thus potentially mediating social stressors that might occur with an extravert. With extravert-extravert pairs in the IM condition, while visual and auditory social stimulation would be removed, extraverts would send shorter, more frequent messages, thus maintaining the active pace and social stimulation during their interaction. Extravert-extravert pairs in the FtF condition would have actively present audiovisual social stimulation along with all other social factors. In addition, extraverts would be in a context where they are mutually more able to express their true selves.

And finally, for the extravert-introvert IM condition pairs, the computers would serve as a means of mediating the over-stimulating elements of social interaction for the introverts and the extraverts would still have visual and verbal social stimulation. While extraverts would be at a disadvantage as far as expression of the true self is concerned, research by Bargh et al. (2002) and Amichai-Hamburger et al. (2002) suggests that while extraverts are more able to express the true self face-to-face, computer-mediated forms of communication do not diminish their ability (i.e. IM is not a detriment to extraverts' ability to express themselves, FtF just gives them an extra boost). This would mean that neither party would necessarily be *dissatisfied* with the conversation, just not as satisfied as they could be. This is in contrast to the FtF dissimilar pairs, wherein both parties would have a likelihood of being dissatisfied due to a variety of factors.

Finally, the individual satisfaction ratings, and feelings that participants were able to represent themselves in ways that felt authentic during the conversation, would be correlated. This correlation would be analyzed using a Spearman's correlation test. It is anticipated that these variables will be correlated due to substantial evidence that expression of the true, authentic self results in higher levels of personal satisfaction (Krause, 2007; McGregor & Little, 1998; Schlegel et al., 2013; Steger & Kashdan, 2007; Zika & Chamberlain, 1992).

Discussion

The proposed results of this study would contribute to the pool of knowledge that currently exists about interpersonal interaction and provide further insight into how the traits of each interacting person and the channel they choose to communicate over can lead to a more or less successful conversation. These results would suggest that when preparing to get in contact with someone, taking note of their personality traits and choosing a channel of communication accordingly could be quite important when seeking a satisfying and effective interaction. However, the personality of an individual may not always be apparent enough to make a clear decision.

These results would show that instant messenger conversations have a higher chance of mutual satisfaction than face-to-face overall; of all 6 pairing conditions, only the dissimilar face-to-face pairing would result in mutual dissatisfaction. It could be gleaned from this information that when choosing the best method of getting in touch with someone that you are not familiar with, making initial contact through an instant messenger program would be the option most likely to foster a mutually satisfying conversation.

The other results of this study would suggest that introverts prefer instant messenger conversations and extraverts prefer face-to-face conversations. These results would also provide evidence that communicating through their preferred channels would enable introverts and extraverts to express their true selves more effectively. This information would most notably contribute to the relevant knowledge base for practicing clinicians in therapeutic psychological settings. Knowing that the channel of communication can have such a strong impact on an individual's satisfaction with his or her ability to express themselves authentically, clinicians in therapeutic settings could be motivated to expand their practices online. This could include offering instant messenger therapy sessions and encouraging the use of an online journal for introverts who may not feel comfortable speaking about their intimate thoughts and feelings in face-to-face settings. By creating a more comfortable environment for their clients, clinicians would ideally in turn be able to work through issues more effectively and develop a better sense of what goals should be set for the client's healing process.

These same concepts could also be applied to workplace settings and the development of methods which could improve inter-employee communication. Improving employee communication could then allow for more effective problem solving and productive discussions in meetings. More generally, this information could lead to better communication systems for daily use, specifically aiding computer scientists when working to design and implement improved user interfaces and social media communities.

Limitations

The theories of communication that exist (especially the encoder-decoder theory) are somewhat rigid and do not lend themselves to all of the nuances of casual conversation.

As such, it can only be said that these results would express trends that could occur during general conversation, and may not reflect the unique variations that exist in every day conversation. In addition, due to the fact that participants would be strangers, these trends may not apply to interactions between individuals with a greater level of acquaintanceship. Also, due to the relative newness of IM, adults who grew up with and are thoroughly accustomed to IM are a minority in the general population, thus restricting the participant pool. It is suggested that this study be run after a few more years have passed, allowing the target population to grow in size.

Directions for Future Research

In future studies, it would be beneficial to look at communication satisfaction with participants who have personality traits other than introversion and extraversion, such as social anxiety, neuroticism, and ambiversion, as well as across different mediums, such as hand-written letters, e-mails, texting, and video chatting, and online forums. Ideally, with the implementation of this study and future related research, individuals will not only be able to feel more able to express themselves in satisfying ways, but also lay a social foundation for making more meaningful connections with the people that they come in contact with each day.

References

- Abercrombie, D. (1968). Paralanguage. In J. Laver, S. Hutcheson (Eds.), *Communication in Face to Face Interaction*, (pp. 64-70). Baltimore, MD: Penguin Books.
doi:10.3109/13682826809011441
- Amichai-Hamburger, Y. Y. (2002). Internet and personality. *Computers in Human Behavior*, 18(1), 1-10. doi:10.1016/S0747-5632(01)00034-6
- Amichai-Hamburger, Y., Wainapel, G., & Fox, S. (2002). 'On the internet no one knows I'm an introvert': Extroversion, neuroticism, and internet interaction. *Cyberpsychology & Behavior*, 5(2), 125-128. doi:10.1089/109493102753770507
- AOL Instant Messenger. (2014). In *Wikipedia*. Retrieved November 27, 2014 from http://en.wikipedia.org/wiki/AOL_Instant_Messenger
- Bargh, J. A., McKenna, K. A., & Fitzsimons, G. M. (2002). Can you see the real me? Activation and expression of the 'true self' on the internet. *Journal of Social Issues*, 58(1), 33-48. doi:10.1111/1540-4560.00247
- Bulu, S. (2012). Place presence, social presence, co-presence, and satisfaction in virtual worlds. *Computers & Education*, 58(1), 154-161.
doi:10.1016/j.compedu.2011.08.024
- Caprara, G. V., Barbaranelli, C., Borgogni, L., & Perugini, M. (1993). The "big five questionnaire:" A new questionnaire to assess the five factor model. *Personality and Individual Differences*, 15(3), 281-288. doi:10.1016/0191-8869(93)90218-R
- Clark, H. H. & Wilkes-Gibbs, D. (1986). Referring as a collaborative process. *Cognition*, 22, 1-39.

- Cohen, D., & Schmidt, J. P. (1979). Ambiversion: Characteristics of midrange responders on the introversion–extraversion continuum. *Journal of Personality Assessment*, 43(5), 514-516. doi:10.1207/s15327752jpa4305_14
- Costa, P. T., & McCrae, R. R. (2008). The revised NEO Personality Inventory (NEO-PI-R). *The SAGE Handbook of Personality Theory and Assessment*, 2, 179-198.
- Cuperman, R., & Ickes, W. (2009). Big Five predictors of behavior and perceptions in initial dyadic interactions: Personality similarity helps extraverts and introverts, but hurts “disagreeables”. *Journal of Personality and Social Psychology*, 97(4), 667-684. doi:10.1037/a0015741
- Email. (2014). In *Wikipedia*. Retrieved October 21, 2014 from <http://en.wikipedia.org/wiki/Email>
- Erikson, E. (1963). *Childhood and society* (2nd ed.). New York, NY: Norton.
- Evitts, P., & Gallop, R. (2011). Objective eye-gaze behaviour during face-to-face communication with proficient alaryngeal speakers: A preliminary study. *International Journal of Language & Communication Disorders*, 46(5), 535-549. doi:10.1111/j.1460-6984.2011.00005.x
- Extraverted or Introverted (2014). Extraverted or introverted preferences. *MyPersonality*. Retrieved November 27, 2014 from <http://www.mypersonality.info/personality-types/extraverted-introverted>
- Finkel, E. J., Eastwick, P. W., Karney, B. R., Reis, H. T., & Sprecher, S. (2012). Online dating: A critical analysis from the perspective of psychological science. *Psychological Science in the Public Interest*, 13, 3-66.
- Goffman, E. (1959). *The presentation of self in everyday life*. New York: Doubleday.

Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure.

Psychological Assessment, 4(1), 26-42.

Hall, A. (2014). 10 ways introverts interact differently with the world. *The Huffington Post*.

Retrieved on December 9, 2014 from

http://www.huffingtonpost.com/2014/11/07/physical-behavior-of-introverts_n_6069438.html

Hammick, J. K., & Lee, M. J. (2014). Do shy people feel less communication

apprehension online? The effects of virtual reality on the relationship between personality characteristics and communication outcomes. *Computers in Human Behavior*, 33, 302-310. doi:10.1016/j.chb.2013.01.046

Hecht, M. L. (1978). The conceptualization and measurement of interpersonal

communication satisfaction. *Human Communication Research*, 4(3), 253-264. doi:10.1111/j.1468-2958.1978.tb00614.x

Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological*

Review, 94(3), 319-340.

High, A. C., & Caplan, S. E. (2009). Social anxiety and computer-mediated

communication during initial interactions: Implications for the hyperpersonal perspective. *Computers in Human Behavior*, 25(2), 475-482.

doi:10.1016/j.chb.2008.10.011

Hogg, M. A., Terry, D. J., & White, K. M. (1995). A tale of two theories: A critical

comparison of identity theory with social identity theory. *Social Psychology Quarterly*, 58(4), 255-269.

- Indian, M., & Grieve, R. (2014). When Facebook is easier than face-to-face: Social support derived from Facebook in socially anxious individuals. *Personality and Individual Differences, 59*, 102-106. doi:10.1016/j.paid.2013.11.016
- InformationWeek (2009). Beyond AIM: Top instant messaging clients for business. *Information Week*. Retrieved November 26, 2014 from <http://www.informationweek.com/applications/beyond-aim-top-instant-messaging-clients-for-business/d/d-id/1076766>
- Instant Messaging. (2014). In *Wikipedia*. Retrieved October 21, 2014 from http://en.wikipedia.org/wiki/Instant_messaging
- Jung, C. G. (1921). *Psychological Types*. Oxford, England: Harcourt, Brace.
- Jung, C. G. (1953). *Two essays in analytical psychology* (R. F. Hull, Trans.). New York, NY: Pantheon.
- King, Carl (2014). 10 myths about introverts. *Carl Kingdom*. Retrieved November 26, 2014 from http://www.carlkingdom.com/10-myths-about-introverts#.VHafY2fmt_A
- Krause, N. (2007). Self-expression and depressive symptoms in late life. *Research on Aging, 29*, 187-206. doi: 10.1177/0164027506298226
- Krauss, R. M., & Fussell, S. R. (1996). Social psychological models of interpersonal communication. In E. T. Higgins, A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 655-701). New York, NY, US: Guilford Press.

- Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukophadhyay, T., & Scherlis, W. (1998). Internet paradox: A social technology that reduces social involvement and psychological well-being?. *American Psychologist*, *53*(9), 1017-1031.
doi:10.1037/0003-066X.53.9.1017
- Lanchantin, T., Simoës-Perlant, A., & Largy, P. (2012). The case of Digital Writing in Instant Messaging: When cyber written productions are closer to the oral code than the written code. *PsychNology Journal*, *10*(3), 187-214.
- Little, B. R. [TEDx Talks]. (2014a). Confessions of a passionate introvert: Brian Little at TEDxOxbridge [Video file]. Retrieved October 22, 2014 from <http://www.youtube.com/watch?v=NZ5o9PcHeL0>
- Little, B. R. (2014b). *Me, myself, and us: The science of personality and the art of well-being*. Canada: HarperCollins.
- Locke, J. L. (1998). *The de-voicing of society: Why we don't talk to each other anymore*. New York, NY, US: Simon & Schuster.
- Marriott, T. C., & Buchanan, T. (2014). The true self online: Personality correlates of preference for self-expression online, and observer ratings of personality online and offline. *Computers in Human Behavior*, *32*, 171-177.
doi:10.1016/j.chb.2013.11.014
- McGregor, I., & Little, B. R. (1998). Personal projects, happiness, and meaning: On doing well and being yourself. *Journal of Personality and Social Psychology*, *74*, 494-512. doi:10.1037/0022-3514.74.2.494
- Miller, A. (1979). *The drama of the gifted child: The search for the true self*. New York, NY: Basic Books.

Nayab, N. (2013). How communication has changed amidst new technologies. *Bright Hub PM*. Retrieved October 22, 2014 from [http://www.brighthubpm.com/methods-](http://www.brighthubpm.com/methods-strategies/79052-exploring-how-technology-has-changed-communication)

[strategies/79052-exploring-how-technology-has-changed-communication](http://www.brighthubpm.com/methods-strategies/79052-exploring-how-technology-has-changed-communication)

Peter, J., Valkenburg, P. M., & Schouten, A. P. (2005). Developing a model of adolescent friendship formation on the internet. *Cyberpsychology & Behavior*, 8(5), 423-430. doi:10.1089/cpb.2005.8.423

Pierce, T. (2009). Social anxiety and technology: Face-to-face communication versus technological communication among teens. *Computers in Human Behavior*, 25(6), 1367-1372. doi:10.1016/j.chb.2009.06.003

Ponari, M., Trojano, L., Grossi, D., & Conson, M. (2013). "Avoiding or approaching eyes"? Introversion/extraversion affects the gaze-cueing effect. *Cognitive Processing*, 14(3), 293-299. doi:10.1007/s10339-013-0559-z

Riggio, R. E. (2013). *Introduction to industrial/organizational psychology (6th ed.)*. San Francisco, CA, US: Pearson Education.

Rogers, C. R. (1951). *Client-centered therapy: Its current practice, implications and theory*. Oxford, England: Houghton Mifflin.

Schlegel, R. J., Hirsch, K. A., & Smith, C. M. (2013). The importance of who you really are: The role of the true self in eudaimonia. In A. S. Waterman (Ed.), *The best within us: Positive psychology perspectives on eudaimonia* (pp. 207-225).

Washington, DC, US: American Psychological Association. doi:10.1037/14092-011

Schroer, W. J. (2004). Generations X, Y, Z, and the others – cont'd. *The Social Librarian*.

Retrieved October 22, 2014 from

<http://www.socialmarketing.org/newsletter/features/generation3.htm>

Smith, S. W., & Wilson, S. R. (2010). *New directions in interpersonal communication research*. Thousand Oaks, CA, US: Sage Publications, Inc.

Steger, M. F., & Kashdan, T. B. (2007). Stability and specificity of meaning in life and life satisfaction over one year. *Journal of Happiness Studies*, 8, 161-179.

doi:10.1007/s10902-006-9011-8

Stryker, S., & Burke, P. J. (2000). The past, present, and future of an identity theory.

Social Psychology Quarterly, 63(4), 284-297.

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. *The Social Psychology of Intergroup Relations*, 33(47), 74-88.

Tosun, L. P. (2012). Motives for Facebook use and expressing “true self” on the Internet.

Computers in Human Behavior, 28(4), 1510-1517. doi:10.1016/j.chb.2012.03.018

Tosun, L., & Lajunen, T. (2010). Does internet use reflect your personality? Relationship between Eysenck's personality dimensions and internet use. *Computers in Human Behavior*, 26(2), 162-167. doi:10.1016/j.chb.2009.10.010

Tracy, K., & Robles, J. S. (2013). *Everyday talk: Building and reflecting identities (2nd ed.)*. New York, NY, US: Guilford Press.

Turkle, S. (1995). *Life on the screen: Identity in the age of the internet*. New York: Simon & Schuster.

Turkle, S. (2012). The flight from conversation. *The New York Times: Sunday Review*.

Retrieved October 22, 2012 from

<http://www.nytimes.com/2012/04/22/opinion/sunday/the-flight-from-conversation.html>

Winnicott, D. W. (1965). Ego distortions in terms of true and false self. *The Maturation Processes and the Facilitating Environment*, pp. 140-152. New York: International Universities Press, 1965.

Zika, S., & Chamberlain, K. (1992). On the relation between meaning in life and psychological well-being. *British Journal of Psychology*, 83, 133-145. doi: 10.1111/j.2044-8295.1992.tb02429.x

Appendix A

Island Communication Task

You and your partner are going to be put onto an island away from civilization for an uncertain amount of time. You will have food, water, shelter, and all other necessities for survival. Pick 9 items of personal value or significance between the two of you [Note: 9 items total, not 9 items each] that you would like to have on the island with you. Make a case for bringing each item by explaining why you would like to have it or why it is important to you.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.

Appendix B

Interpersonal Communication Satisfaction Inventory [Modified]

The purpose of this questionnaire is to investigate your reactions to the conversation you just had. On the next few pages you will be asked to respond to a number of statements. Please indicate the degree to which you agree or disagree that each statement describes the conversation you just had. The 4 or middle position on the scale represents “undecided” or “neutral,” then moving out from the center, “slight” agreement or disagreement, then “moderate,” then “strong agreement or disagreement.

[Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree]

1. The other person let me know that I was communicating effectively.
 2. Nothing was accomplished.
 3. I would like to have another conversation like this one.
 4. The other person genuinely wanted to get to know and/or understand me.
 5. I was very dissatisfied with the conversation.
 6. I had something else on my mind that distracted me during the conversation.
 7. I felt that during the conversation I was able to present myself as I wanted the other person to view me.
 8. The other person showed me that he/she understood what I said.
 9. I was very satisfied with the conversation.
 10. The other person expressed a lot of interest in what I had to say.
 11. I did NOT enjoy the conversation.
 12. The other person did NOT provide support for what he/she was saying.
 13. I felt I could speak freely with the other person.
 14. We each got to say what we wanted.
 15. I felt that we could laugh easily together.
 16. The conversation flowed smoothly.
 17. The other person changed the topic when his/her thoughts or feelings were brought into the conversation.
 18. The other person frequently said things which added little to the conversation.
 19. The conversation was NOT very interesting or engaging.
-

Scoring Note:

Items 2, 5, 6, 11, 12, 17, 18, and 19 should be reverse-coded.