EXAMINING THE INTRUSIVENESS AND IMPRESSIONS OF PUBLIC MOBILE
PHONE CONVERSATIONS
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Abstract

Public mobile phone use is often viewed negatively, although the reason for these negative perceptions is unclear. The current study examined perceptions of public mobile phone users in a 2 X 2 factorial design. Participants viewed a staged video of a public conversation that was either face-to-face or over a mobile and later rated their perception of the conversation and target speaker. Two variables were manipulated: whether participants could hear both sides or only one side of the conversation, and whether the conversation took place over a mobile phone or was face-to-face. The results indicated that the one side mobile phone conversation was more noticeable, intrusive, and annoying to overhear compared to the two-sided mobile speaker phone conversation and one side inaudible face-to-face conversation. Additionally, participants indicated that the target speaker in the one side mobile phone conversation was liked less than the target speaker in the mobile speaker phone condition and was perceived as more extroverted when participants could only hear one side of the conversation. The findings from this study are discussed in relation to previous data as to why public mobile phone conversations are generally perceived negatively by others.
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Examining the Intrusiveness and Impressions of Public Mobile Phone Conversations

Mobile phones have revolutionized the way we communicate in contemporary society. Users can be located in virtually any location and during almost any time of the day. Moreover, according to the Cellular Telecommunications and Internet Association (2009), over 285 million Americans have subscribed to some form of a wireless mobile phone contract. With an estimated 307 million people currently residing in the United States in 2009, this would equate to over 90% of Americans owning some form of a mobile phone device (U.S. Census Bureau). Another testament to the popularity of these devices is that in 2002 the number of mobile phones outnumbered the number of fixed line phones (Srivastava, 2005). Given the increased uses and convenience mobile phones offer over traditional telecommunication means, it is quite obvious these devices will continue to be a pursued commodity for many years to come.

However, due to the ubiquity of these devices, the public use of mobile phones can be regarded as intrusive, or illegal, depending on their utilization during various social events. The purpose of this research is to investigate why this occurs. More specifically, this study explores the negative impressions of public mobile phone conversations and the types of characteristics we form of public mobile phone users. First, I will briefly discuss the intimate connections individuals form with their mobile device and how these devices can convey social meaning. Following this, I examine implicit personality theory (IPT) as a mechanism people utilize to infer the possible characteristics that public mobile phone users may possess. Finally, I review the hypotheses of why public mobile phone conversations might be perceived as intrusive.
The Mobile Phone User

The mobile phone differs from preceding communication devices by allowing users a sense of perpetual connection with their family and friends. Vincent (2006) argues that we interact with our mobile phone in ways that we do not with other technological devices – we embrace it during free time, we clutch it during emergencies ready to dial a close one for help or solace, and we imagine our loved ones feel the same way with their mobile devices. DeBaillon and Rockwell (2005) state that according to the Consumer Electronic Manufacturers Association, the prime reason people report owning mobile phones is in cases of emergency crises.

Furthermore, for some individuals, mobile phone use is an articulation of who they are. Researchers have found through interviews and focus groups with young people that mobile phones are often a dominate method of self-expression through the possession of popular models, graphics, logos, and fashionable ring tones (Foley, Holzman, & Wearing, 2007; Plant, 2001; Vincent, 2006). Essentially, by purchasing and publically displaying the latest and most advanced mobile phone model, consumers are broadcasting their connection to the social elite. Moreover, due to the possession of popular mobile phones, it stands to reason that these devices can communicate positive attributes for others to implicitly note. Although no research has been conducted that investigates how people view others with popular mobile phone models and the implicit messages associated with owning such devices, an abundance of research exists on other types of products.
The Social Meaning of Products

The products that an individual purchases can often speak loudly about the characteristics of that consumer. People often infer the social class, occupation, or life style choices of others based on their possessions (Solomon, 1983). While outside observers will differ in some of the methods on how they ascribe meaning to objects, members of a general population or of a particular subgroup are likely to agree on some aspects of an object’s worth (Richins, 1994). For example, Richins asked participants to sort index cards of important possessions mentioned from individuals in a previous study into two stacks indicating whether they thought the person who mentioned the item was likely to be high or low in the construct of materialism. The results of this procedure found individuals who valued family mementos, home movies, or other items with specific associated value tended to be labeled as low-materialism individuals. Conversely, people who highly valued a sophisticated vehicle or diamond jewelry typically were perceived as high-materialism individuals.

For some individuals, possessions can help establish a sense of identity through the broadcasting of popular brand products. Just as clothing, grooming, and jewelry can distinguish an individual from others, certain possessions can also indicate group identity (Belk, 1988). Whether this connection is with formal uniforms, automobiles, or even support of a local sport team, various means exist for individuals to broadcast their alliance to a selective cohort. Testing this notion, Escalas and Bettman (2005) requested college student participants to comment on groups they felt associated with (i.e., ingroups), groups from which they felt alienated from (i.e., outgroups), and to identify a particular brand they felt was consistent with their image along with a brand that was not.
Escalas and Bettman found a general overall pattern in that consumers utilize brands to create or communicate their sense of self to the rest of society. Specifically, participants reported higher connections to brands consistent with the image of their ingroup compared to brands consistent with their indicated outgroups. This effect was also seen to be moderated by brand symbolism, in that brands that communicate something about the user yielded stronger effects than brands that do not.

**Implicit Personality Theory**

One of the reasons people infer traits about others based on their possessions is because of their implicit personality theories (IPT). Researchers describe IPT as an interconnection of assumptions we hold about the relationships among various types of individuals, traits, and behaviors displayed in public settings (Brehm, Kassin, & Fein, 2005; Oxford University Press, 2009). According to IPT, knowing that someone has one particular trait often leads one to infer said person has other related traits by nature. Thus, with a positive correlation existing between the traits of warmth and generosity, a person observed as being warm to others is also likely to be perceived as being generous. Conversely, because coldness and seriousness are positively correlated, a person who is cold to others is often also perceived as generally serious in nature.

As a general background on how IPT is believed to operate, Beer and Watson (2008) note that trait raters rely less on IPT when they are either provided with trait-relevant information and are asked to judge the characteristics of a target person or if they are required to judge the characteristics of a person they know well (or are at least well acquainted with) compared to someone who is a complete stranger. One study demonstrating this phenomenon was conducted by Vonk and Heiser (1990). They
researched the possibility that judgments of personality of unfamiliar targets correspond better with an individual’s IPT than do judgments of the personality of familiar targets. Through four experimental sessions, Vonk and Heiser obtained a stable representation of each participant’s IPT structure and noted their judgments of three familiar and three unfamiliar targets. Of importance, Vonk and Heiser describe that each ideal point representing a target person has a badness-of-fit value, which is essentially the correspondence between the distances of the ideal points of attributes of an individual’s IPT and the ratings in the individual’s data. In the event that certain attributes are far apart from one another, but describe a target person quite well, the higher the rater’s badness-of-fit value will be present and a lower correspondence will exist between the co-occurrences of the individual’s IPT configuration. Ultimately, the results of this study suggests the judgments of the familiar target people do not fit participants’ IPT as well as their judgments of unfamiliar target people (Vonk & Heiser, 1990).

Various other research has been conducted on the IPT formed by participants in experimental and natural settings to better understand how we form subjective impressions of others. Beginning with the physical attraction stereotype of “what is beautiful is good”, it seems that those high in physical attraction are often characterized with more favorable attributes than they may actually possess. Horton (2003) investigated the role of self-perception by requesting college student participants to complete self-assessments and personality assessments on male and female targets who were high, medium, or low in physical attractiveness. Participants who rated targets high in physical attraction also rated these targets as more sociable than targets both medium and low in physical attraction. Additionally, participants who rated themselves as more attractive
than the average college student possessed more favorable attitudes towards targets high in physical attraction (e.g., “target has integrity”) than participants who did not hold as high opinions of themselves. Participants who rated themselves as relatively unattractive to the average college student, conversely, held more positive attitudes towards less attractive targets. Based on these findings, Horton speculates that an individual’s physical attractiveness can be a large determinant of his/her IPT. However, Eagly, Ashmore, Makhijani, and Longo (1991) conducted a meta-analysis on the physical attraction IPT and found this stereotype to be somewhat modest in size and quite variable depending on the type of dependent variable utilized. While physical attractiveness indeed influences participants to rate attractive targets as possibly more sociable and popular individuals, physical attractiveness also has a low impact on ratings of target’s integrity and concern for others (Eagly et al. 1991).

At a more general level of IPT research, investigators have scrutinized the IPT formulated by college participants and their academic peers. Specifically, Wiggins and Blackburn (1976), along with Ashmore, Griffio, Green, and Moreno (2007), examined how college students mentally form impressions and stereotypes of classmates based on fixed qualitative and verbal descriptions, respectively. Wiggins and Blackburn found the differences in raters IPT were based on ratees’ salient physiognomic characteristics in which targets who were ectomorphs, taller than average, and carefully dressed were generally perceived to be rational, well adjusted, and intellectual individuals. Conversely, targets who were overweight or endomorphs typically were perceived to be unintelligent, not very complex, and not very well-adjusted students. Ashmore et al.’s (2007) participants, when asked to free-sort characteristics of general college student genres
(e.g., “frat boy”), tended to divide mentally these presented attributes into two categories: academic involvement and social involvement. From here, these two categories were subdivided by participants further into 10 clusters of college student types that differed significantly from one another in terms of their respective psychological properties (e.g., stigmatized = fag, gay, fat; addicts = burnout, stoner, smokers; socially inept = loner, dork, bookish). With the data from these studies, it seems possible that IPT are an ongoing mechanism we consistently utilize for every new personal encounter we make.

**IPT and Perceptions of Mobile Phone Users**

A few IPT-relevant studies investigated the impressions public mobile phone users relay to others. Through participation in focus groups and electronic discussions on Usenet.com, Ling (1997) found that those using their mobile phone inappropriately (i.e., talking just to talk) in public areas were often viewed as status seeking yuppies or being ostentatious. Moreover, those who used their mobile phone for inappropriate calls were typically labeled as gossipers. Plant (2001) identified two types of mobile phone users based on their mannerisms when they make or receive mobile calls – the spacemaker and the speakeasy pose. The spacemaker is described as an introverted individual who generally slants his or her body towards his or her mobile phone during conversation focusing all his or her attention to the person on the other end of the line. Mobile phone users who exhibit this posture respect the privacy of others and will seek out areas of comfort and relaxation where they can make or receive their calls. Conversely, those who demonstrate the speakeasy pose often radiate a sense of confidence in how they utilize their mobile phone in public and are often unapologetic in the process. Plant describes speakeasysers as much more extroverted than spacemakers with the former refusing to be
distracted by the outside world while utilizing their devices. It is important to note, however, mobile phone devices can be labeled as intrusive if publically displayed excessively. Interviewed professional occupational women in Chicago said that their male counterparts were inclined to display their mobile phones as a symbol of their status or even virility (Plant, 2001). Numerous other studies have also reported on the intrusiveness of mobile phones and possible reasons why these devices are perceived negatively.

**Intrusiveness of Public Mobile Phone Conversations**

One aspect of mobile phone use that has been investigated is its intrusiveness. Researchers have found mobile phones to be the most intrusive in areas of high concentration (i.e., social settings where people are to focus their attention) with most participants feeling comfortable utilizing their devices in relatively open public settings. Specifically, Höflich (2006) surveyed participants from European countries regarding public mobile phone use and found these devices to be rated as more of a nuisance at cinemas or museums, official events (e.g. a lecture), or in waiting rooms, but less of a nuisance in streets or public parks. Furthermore, nearly half of those questioned felt quite uncomfortable while others were present during their mobile phone conversation, almost a third reported that they tried to avoid situations where others could listen to their mobile phone conversations, and 40 percent reported feeling embarrassed when their mobile phone rang in situations where others were present. Turner, Love, and Howell (2008) presented young adult participants with an image of an actor utilizing his or her mobile phone in five different locations (e.g., bar/restaurant, street) and based on follow-up questionnaires found most participants feeling uncomfortable using their mobile phones
at work and generally more willing to receive than make calls in public places. American contributors interviewed in Plant’s (2001) study mentioned they would not hesitate to ask strangers to stop using their mobile phone in their vicinity if the conversation was perceived as intrusive, just as they might ask people to please stop smoking. Regarding third party observers to mobile phone conversations, researchers have found that males, and those high in individualism, tend to express greater annoyance with these technological devices in public settings (Campbell, 2008; Turner, et al. 2008). Considering that public mobile phone conversations are seen as a form of personal space intrusion, and in some situations males are known to respond more emotionally than females when their physical space is invaded (e.g., see Turner, et al. 2008), it seems plausible these characteristics would be related to a lower tolerance of public mobile phone use.

One possible explanation for why mobile phone conversations are perceived as intrusive was offered by Höflich (2006) who found that audiences who overhear conversations from public mobile phone users generally rate this experience to be a significant nuisance due to the unwanted information they absorb from the process. While this explanation is plausible, a contrasting and perhaps more reasonable explanation is offered by Monk, Fellas, and Ley (2004b) and the need-to-listen effect. Particularly, Monk et al. believe that due to the relative novelty or bad experiences (e.g., dropped calls, hidden fees) associated with mobile phones, it seems possible that some individuals will associate negative attitudes towards these devices. If society has an overall negative view towards mobile phones, it also seems possible that public mobile
phone conversations will be rated as more annoying than public conversations between two individuals.

Building on previous research of the intrusiveness of mobile phones, Monk et al. (2004b) tested whether mobile phones are intrusive due to a commonly shared negative view of these devices or if mobile phones are intrusive because only one side of the conversation is heard. Specifically, Monk et al. (2004b) conducted a field experiment where participants either overheard a conversation between two females, a female on a mobile phone, or two females conversing where one was speaking at an inaudible level. The mobile phone conversation was rated by participants as more noticeable and intrusive than the both audible conversation condition, possibly because participants could overhear only one side of the conversation. This finding parallels previous discoveries regarding mobile phone conversations compared to natural face-to-face conversations (e.g., see Monk et al., 2004a). Of interest, however, the co-present one-audible condition yielded similar ratings to the mobile phone condition in that both were more noticeable, intrusive, and listened to more by the participants than the co-present both audible conversation condition. Monk et al. (2004b) believe this finding offers empirical support for the need-to-listen hypothesis over a commonly shared negative view of mobile phones, and thus explains why public mobile phone conversations are perceived negatively.

One possible explanation for the need-to-listen effect is the lack of predictability when hearing one side of a mobile phone conversation. Emberson, Lupyan, Goldstein, and Spivey (2010) hypothesized that the relative predictability of a conversation affects how distracting it is, and depending on what is overheard, can consequently result in
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decreased cognitive performance. Relating this to mobile phone communication, two similar experiments were conducted in which participants performed both a verbal and nonverbal task while overhearing different types of speech: a dialogue between two individuals, a halfalog (i.e., similar to a mobile phone dialog where only one side of the communication is heard), or a monologue where one person would recap a particular conversation. Experiment 1 supported Emberson et al.’s hypothesis in that overhearing a halfalog was more distracting for participants while performing each task compared to overhearing a full conversation. In Experiment 2, however, Emberson et al. rendered the speech participants overheard incomprehensible to test if this effect is due to mere acoustic unpredictability. The results of this experiment did not demonstrate the same effect as before and thus suggests that the unpredictable speech content of halfalogues produce more distraction compared to incidents where both sides of a conversation are heard. Based on these findings, Emberson et al. offer a cognitive explanation for why public mobile phone conversations are irritating; it is due to the limited predictability of speech content overheard in mobile phone conversations.

Current Study

Public mobile phone use is often viewed negatively although it is not explicitly clear why. One possible explanation is that many people possess a generally negative view of public mobile phone use because of the negative experiences occasionally associated with these devices (e.g., overhearing information that we have no interest knowing). Conversely, Monk et al.’s (2004b) need-to-listen hypothesis is another explanation that posits mobile phone conversations are rated as more intrusive than face-to-face dialogs because with the former only one side of the conversation is heard. Note,
however, that the need-to-listen effect does not explain why public mobile phone conversations are perceived as intrusive. Emberson et al.’s (2010) discovery that halfalogues are more distracting due to their lack of predictability could explain the need-to-listen effect. However, this phenomenon is in need of further examination. The present research investigates how others perceive public mobile phone users and mobile phone conversations by manipulating how the communication is conveyed (one-sided vs. two-sided) and whether it is spoken over a mobile phone or face-to-face.

In the current study, participants were exposed to different versions of a video depicting two students communicating about their recent summer vacation. In each condition, participants observed this conversation occurring over a mobile phone or face-to-face, and either overheard both sides of the conversation or heard only one side. These variables were examined in a 2 X 2 factorial design with communication type (i.e., mobile phone or face-to-face) and exposure (overhearing one side of the conversation or both) serving as independent variables. After viewing a specific video condition, participants completed a survey regarding their perceptions of the conversation with items from the Monk et al. (2004b) study (e.g., “The conversation was intrusive”). If public mobile phone conversations are generally perceived negatively due to the fact that we only hear one side of the conversation, a main effect should be present for the exposure variable. If public mobile phone conversations are generally perceived negatively because people possess a negative attitude towards these devices, however, there should be a main effect for communication type.

In addition to examining the effects of communication type and exposure on perception of conversational behavior, the present study also assessed the effects of these
variables on how well the target speaker was liked by participants. Based on previous data concerning the intrusiveness of public mobile phone conversations, I predicted a main effect for communication type: the target speaker communicating on her mobile phone will be less liked than the same target speaker communicating with her friend in person.

Finally, this study investigated the specific impressions public mobile phone users relay to others. To assess these characteristics, participants were presented with items from Gosling, Rentfrow, and Swann’s (2003) Ten-Item Personality Inventory (TIPI). The TIPI utilizes personality traits from the five-factor model (e.g., see McCrae & Costa, 1985). The five-factor model (i.e., the Big-Five) is described by researchers as the fundamental dimensions of human personality (Larsen & Buss, 2007) and is comprised of the traits extroversion, agreeableness, consciousness, neuroticism, and openness to experience.

No one has yet formally examined how mobile phone users are perceived in terms of specific personality traits. The self-reported traits of mobile phone users, however, have been examined. Butt and Phillips (2008) found through surveying typical mobile phone users that extroverted and disagreeable individuals reported receiving more calls, reported receiving more unwanted calls, and spent significantly more time changing the ring tone and wallpaper on their mobile devices. Individuals who scored high on neuroticism were also more likely to utilize Short Message Services (SMS; aka “texting”) on their mobile phones – possibly suggesting SMS as a method where they can limit the amount of information they revealed about themselves to avoid negative public presentation. In short, while this study addresses the tendencies of mobile phone users in
relation to certain attributes of their personality, the implicit personality traits formed by third-party observers on mobile phone users has yet to be investigated. Thus, based on these findings, I expect a main effect will be present for communication type where the target speaker utilizing her mobile phone in public will be rated as more extroverted than when she is viewed communicating with her friend face-to-face.

**Method**

**Participants**

A total of 120 undergraduate college students (36 males, 84 females) participated in this study for partial course credit. The average age of participants was 19 years old ($SD = 1.92$) with the majority of participants being either a freshman or sophomore (82.5%). Nine participants identified themselves as Black/African-American (7.5%), two as Asian (1.7%), three as Latino/Hispanic (2.5%), 104 as White/Caucasian (86.7%), and two as Other (1.7%). Student participants came from a wide variety of academic backgrounds as there were over 50 distinct majors who agreed to be involved in this study. It is also worth noting that 100% of the participants indicated that they own a mobile phone.

On average, participants reported spending 4 ½ hours using their mobile phones in a given day ($SD = 4.03$ hrs) and only turned their phone off for approximately half an hour each day ($SD = 1.82$ hrs). Sending text messages far exceeded the other activities that participants engaged in with their mobile phone as the average number of texts sent per day was 115 ($SD = 137.85$) compared to 2.94 picture messages sent in a week ($SD = $
5.06), 1.29 hours spent on social networking sites (SD = 2.04), and 1.93 hours spent listening to music (SD = 5.94).

**Stimulus Materials**

I created four staged videos of a female college student communicating with her female friend at a shuttle bus stop location on a public university campus. The method of communication between the female target speaker and her friend differed in that it was either face-to-face or spoken over a mobile phone, and in both of these either only one person was audible (one-sided) or both people were audible (two-sided). More specifically, in the mobile phone condition, the conversation between the target speaker and her friend occurred either over a mobile phone where only one side was heard, or over a speaker phone where both sides of the conversation were overheard. In the face-to-face condition, participants viewed each actor communicating and either heard both speakers clearly, or heard only the target speaker while scarcely being able to comprehend the spoken dialog of the other actor. This latter condition is very similar to what Monk (2004b) utilized when testing the need-to-listen effect hypothesis.

The content of the conversation between the target speaker and her friend was the same in each condition and concerned how the target speaker’s friend spent her summer vacation in France. This scripted conversation is similar to what Monk et al. (2004a, 2004b) used in their public mobile phone conversation research. On average, each video condition was approximately 2.15 minutes long. It is important to note that the actors were filmed with their backs facing the camera so that participants would focus more on the conversation rather than the people communicating. I assumed that by filming each condition with the actors’ backs to the camera that participants were more likely to form
implicit attributes of the target speaker based on the context of her conversation rather than her appearance (i.e., avoiding the “what is beautiful is good” effect mentioned earlier). A copy of this conversation is located in Appendix A.

**Dependent Measures**

**Monk et al. (2004b) items.** After viewing a video, participants completed a brief survey that assessed their impressions of what they viewed. First, participants completed four questions from the Monk et al. (2004b) study. Instructions to participants for the Monk et al. questions read: “On the following pages, these questions ask you to indicate your impression of what you just witnessed from the conversation. Again, please imagine yourself as the student waiting at the Bus Stop and use the rating scale below to indicate your impression of what you just viewed. Describe accurately your impressions and read each statement very carefully. Your responses will be kept in absolute confidence.” The four Monk et al. questions were presented as the following: (1) “The conversation was noticeable:”, (2) “I found the volume of the conversation annoying:”, (3) “The conversation was intrusive:”, and (4) “The conversation was annoying:”. Each question ranged from 1 = strongly disagree to 5 = strongly agree.

**Likability and clarity items.** Items assessing how much participants liked the target speaker along with the clarity of each student actor were next presented and again phrased in a five-point Likert-scale format. Specific instructions were presented as: “For the following questions, please rate your impressions of Jen (i.e., the target speaker across all conditions) and the conversation she had with her friend from the video. Read each item carefully and circle a number that corresponds with how you feel in relation to the question being asked.” The three items of likability included: (1) “I feel that Jen is a
likable person:”, (2) “I would like to be friends with Jen or someone very similar in personality:”, and (3) “Jen seems easily approachable:”. Two items assessing how clearly participants understood Jen and her friend were also presented and phrased as: (1) “I was able to understand Jen clearly:” and (2) “I was able to understand Jen’s friend clearly:”. The latter item served as a manipulation effect to ensure that participants could clearly hear or comprehend Jen’s friend in the two sided relative to one sided conditions.

**Demographic items and mobile phone usage items.** Basic demographic questions along with mobile phone use items followed next in the assessment. Specific instructions for the mobile phone use questions read: “For the following questions please estimate how often you perform the following activity with your mobile phone.” Due to privacy issues and the nature of their field experiment, Monk et al. (2004b) were unable to obtain such information and consequently questioned how demographic and mobile phone usage data would interact with how people view public mobile phone conversations.

For mobile phone usage items, participants wrote the number of hours or frequency they engage in each activity. Mobile phone use items included: (1) “In a typical day how many hours do you leave your cell phone off?”, (2) “How much time during a typical day do you spend on your cell phone?”, (3) “How many text messages do you send in a day?”, (4) “How many picture messages do you send in a week?”, (5) “How much time do you spend on your cell phone surfing social networking sites in a day?”, and (6) “How much time do you spend listening to music on your cell phone in a given week?”
**Gosling et al.’s (2003) TIPI items.** Lastly, to assess the perceived attributes of
the typical public mobile phone user, participants were asked to rate what personality
traits they believed the target speaker possessed using items from Gosling et al.’s (2003)
TIPI. The TIPI consists of 10 items each consisting of two descriptors. In this section of
the assessment, participants read the following instructions: “Here are a number of
personality traits that may or may not apply to Jen. Please write a number next to each
statement to indicate whether you agree or disagree that Jen possesses these
characteristics. You should rate the extent to which the pair of traits applies to Jen, even
if one characteristic applies more strongly than the other.” The question stem of “I see
Jen as” was then presented to participants in which they wrote a numerical value ranging
from 1= strongly agree to 7= strongly disagree their subjective judgments of this target
speaker. These ten items included: (1) extraverted, enthusiastic; (2) critical, quarrelsome;
(3) dependable, self-disciplined; (4) anxious, easily upset; (5) open to new experiences,
complex; (6) reserved, quiet; (7) sympathetic, warm. (8) disorganized, careless; (9) calm,
emotionally stable; and (10) conventional, uncreative. The TIPI demonstrates adequate
convergent validity (absolute mean .77), discriminant validity (absolute mean .20), test-
retest reliability (.72), patterns of external correlates (> .90), and convergence between
self- and observer ratings (Gosling et al., 2003). A complete copy of this survey is located
in Appendix B.

**Procedure**

This study was conducted in a classroom setting. Undergraduates were recruited
from a psychological participant pool, and received partial course credit for their
participation. This study was only open to students without any serious hearing
impairment. A maximum of 10 participants were run at a time, and all participants within a session were randomly assigned to the same condition. On arrival, participants were seated and handed a copy of the informed consent form to review until all other participants had arrived. After five minutes past the scheduled experiment session, I read a specific set of instructions to participants. The instructions varied based on the experimental condition to which the session had been randomly assigned. For example, participants in the face-to-face condition heard the following instructions:

“Hello everyone, my name is Nate Sutter, and I am a current second year cognitive and social processes student here at Ball State University. If you haven’t already done so, I’d like for you to take a minute and read the informed consent form I have submitted to you. After you have completely reviewed this form, please sign the back to agree to be part of this study. I will then collect this signed form so that you can receive partial course credit. In a moment, you will be watching a video of a BSU student communicating with a friend about her recent summer vacation and you will be asked to provide your impressions of what you just viewed. Please imagine yourself as the student waiting at the bus stop and pay close attention to the conversation that takes place. After completing the questionnaire, please turn it upside down and you will be free to leave. I will hand to you a copy of the informed consent form and debriefing statement as you walk out the door. Are there any questions?”

From these general instructions, the only phrases that differed between conditions was that in the mobile phone and speaker phone conditions, participants were informed that
the BSU student would be communicating on her mobile phone whereas in the one side face-to-face condition participants were told that only the remarks of one student would be clearly audible.

After viewing the video, participants completed the brief assessment described above and were thanked for their time and effort. All participants were given a copy of the informed consent form and a briefing statement as they exited the experimental room. The total duration for each experimental session was between 10 – 15 minutes.

**Results**

**Primary Analysis**

All dependent measures in the assessment were analyzed with a 2 (Communication Type: mobile phone vs. face-to-face) X 2 (Exposure: overhearing one-side vs. two sides of the conversation) Multivariate Analysis of Variance (MANOVA) or Analysis of Variances (ANOVA). All relevant means are presented in Table 1.

**Clarity and Manipulation check.** Participants were asked questions assessing the clarity of the target speaker (“I was able to understand Jen clearly.”) and clarity of the target speaker’s friend (“I was able to understand Jen’s friend clearly.”). Regarding the item assessing the clarity of the target speaker, a significant main effect for exposure, $F(1, 116) = 13.47, p < .001$ and communication type, $F(1, 116) = 18.05, p < .001$ was found. For the significant exposure main effect, participants indicated they were better able to understand the target speaker in the one side conversations ($M = 4.00$) than in the two sided conversations ($M = 3.37$) (see Table 1 for individual means). Conversely, for the significant communication type main effect, participants indicated they were better
able to understand the target speaker when she was physically speaking face-to-face with her friend \((M = 4.05)\) than when she was speaking with her friend on her mobile device \((M = 3.32)\). Considering that the target speaker was understood more clearly in particular conditions, all subsequent analysis will include clarity of the target speaker as a covariate. Of importance, because of the covariate’s influence, the adjusted means in the simple effects analyses will be slightly different than the reported MANCOVA means in Table 1.

Concerning the second clarity question (“I was able to understand Jen’s friend clearly.”), a significant main effect was again found for both exposure, \(F(1, 116) = 4.87, p = .029\) and communication type, \(F(1, 116) = 18.57, p < .001\). For the significant exposure main effect, participants indicated they were better able to understand the target speaker’s friend in the two sides conversations \((M = 1.98)\) than in the one side conversations \((M = 1.63)\). For the significant communication type main effect, participants indicated they were better able to understand the target speaker’s friend in the mobile phone conversation conditions \((M = 2.15)\) than when she was physically speaking with the target speaker face-to-face \((M = 1.47)\). Hence, the exposure manipulation was effective as participants were able to more clearly understand the target speaker’s friend in the two sides condition relative to the one side condition.

**Monk et al. (2004b) questions.** For the Monk et al. (2004b) items, the factorial MANCOVA revealed a significant main effect for exposure, \(F(4, 112) = 3.54, p = .009\), however, this was qualified by a significant Communication Type X Exposure interaction, \(F(4, 112) = 5.94, p < .001\). The summary for the factorial MANCOVA for the Monk et al. (2004b) items are displayed in Table 2. Univariate analyses with perceived
target clarity as a covariate were performed to explore each of Monk’s four questions in more detail.

“The conversation was noticeable”. A significant interaction was found between Communication type X Exposure for the question assessing “The conversation was noticeable”, $F(1, 115) = 9.47, p = .003$. The covariate of perceived target clarity was significant in this analysis, $F(1, 115) = 8.59, p = .004$. Follow-up tests found the one sided mobile phone conversation was rated as more noticeable ($M = 4.25$) than the two sided mobile phone conversation (i.e., speaker phone) ($M = 3.68$), $F(1, 57) = 7.17, p = .010$. No significant difference for noticeability was found between the two sides face-to-face conversation ($M = 4.05$) and one side face-to-face conversation ($M = 3.64$), $F(1, 57) = 1.91, p = .173$. Additionally, it was seen that the one sided mobile phone conversation was rated as more noticeable ($M = 4.47$) than the one side face-to-face conversation ($M = 3.59$), $F(1, 57) = 10.49, p = .002$. Finally, no significant difference was found for noticeability between the two sides mobile phone conversation ($M = 3.67$) and two sides face-to-face conversation ($M = 3.90$), $F(1, 57) = .76, p = .388$.

“I found the volume of the conversation annoying”. The Communication type X Exposure interaction was not significant for the question assessing “I found the volume of the conversation annoying”, $F(1, 115) = 2.04, p = .156$. There was, however, a significant main effect for exposure whereby participants rated the volume of the conversation in the one sided condition as more annoying ($M = 4.03$) than in the condition where two sides of the conversation could be overheard ($M = 3.52$), $F(1, 115) = 8.15, p = .005$. This finding appears logical because if participants desired to clearly comprehend both sides of the conversation, the volume in the one sided condition would
be rated as more annoying than the volume in the two sides condition due to what participants could not hear in the former. The covariate of perceived target clarity was not significant in this analysis, $F(1, 115) = 1.53, p = .219$.

“The conversation was intrusive”. Significant main effects for exposure, $F(1, 115) = 6.37, p = .013$ and communication type, $F(1, 115) = 5.55, p = .020$ were found for the question assessing “The conversation was intrusive”. However, both of these main effects were qualified by a significant Communication type X Exposure interaction, $F(1, 115) = 8.70, p = .004$. The covariate of perceived target clarity was not significant in this analysis, $F(1, 115) = .88, p = .350$. Follow-up tests found the one sided mobile phone conversation was rated as more intrusive ($M = 3.43$) than the one side face-to-face conversation ($M = 2.47$), $F(1, 57) = 11.95, p = .001$. No significant difference was found between the two sided mobile phone conversation ($M = 2.42$) and two sided face-to-face conversation ($M = 2.52$), $F(1, 57) = .210, p = .649$. It was also seen that the one sided mobile phone conversation was rated as more intrusive ($M = 3.32$) than the two sided mobile phone conversation ($M = 2.45$), $F(1, 57) = 13.94, p < .001$. No significant difference was seen between the two sided face-to-face conversation ($M = 2.54$) and one sided face-to-face conversation ($M = 2.53$), $F(1, 57) = .0001, p = .984$.

“The conversation was annoying”. A significant Communication type X Exposure interaction was found for the question assessing “The conversation was annoying”, $F(1, 115) = 14.31, p < .001$. The covariate of perceived target clarity was not significant in this analysis, $F(1, 115) = .191, p = .663$. Again, follow-up tests indicated that the conversation in the one side mobile phone conversation was rated as more annoying ($M = 3.74$) than the two sides mobile phone conversation ($M = 2.92$), $F(1, 57) =$
9.01, \( p = .004 \). The two sides face-to-face conversation was rated as more annoying (\( M = 3.55 \)) than the one side face-to-face conversation (\( M = 2.82 \)), \( F(1, 57) = 6.10, p = .017 \). Additionally, it was seen that the one sided mobile phone conversation was rated as more annoying (\( M = 3.67 \)) than the one side face-to-face condition (\( M = 2.86 \)), \( F(1, 57) = 7.73, p = .007 \). The conversation in two sides face-to-face condition was rated as more annoying (\( M = 3.54 \)) than the conversation in the two sides mobile phone condition (\( M = 2.95 \)), \( F(1, 57) = 3.99, p = .05 \).

**Overall Likability.** The three likability items “I feel that Jen is a likable person”, “I would like to be friends with Jen or someone very similar in personality”, and “Jen seems easily approachable” indicated a Cronbach’s Alpha of .719 and thus were combined into a single overall likability measure. The covariate of perceived target clarity was significant in this analysis, \( F(1, 114) = 25.02, p < .001 \). A significant Communication type X Exposure interaction was found, \( F(1, 57) = 5.28, p = .023 \) whereby the speaker in the one side mobile phone conversation condition was liked less (\( M = 10.36 \)) than the target speaker in the two sides mobile phone condition (\( M = 11.31 \)), \( F(1, 57) = 5.19, p = .027 \). No significant difference was found for overall likability between the two sides face-to-face condition (\( M = 11.18 \)) and one side face-to-face condition (\( M = 11.55 \)), \( F(1, 56) = .80, p = .374 \). The summary for the analysis of variance for the target’s likability is displayed in Table 3.

**Trait of Extroversion.** Significant main effects were found for exposure, \( F(1, 115) = 5.55, p = .020 \) and communication type, \( F(1, 115) = 7.88, p = .006 \) regarding how extroverted the target speaker appeared in each condition. The covariate of perceived target clarity was not significant in this analysis, \( F(1, 115) = 1.05, p = .307 \).
speaker in the one side condition was rated as more extroverted ($M = 11.09$) than the target speaker in the two sides condition ($M = 9.95$). This finding partially supports my original hypothesis in that people who have conversations in which only one side can be heard (one side inaudible face-to-face conversation, mobile phone conversations) can be perceived as more extroverted than those who have conversations where both sides can be heard. It was unexpected, however, to find that the target speaker who was physically present and speaking with her friend to be rated as more extroverted ($M = 11.21$) than the target speaker in the mobile phone condition ($M = 9.84$). The summary for the analysis of variance for the target’s extroversion is displayed in Table 4.

**Additional Analysis**

In addition to the primary analyses, I investigated correlations between perceptions of the target speaker and participants reported mobile phone use. Additionally, I examined how the target speaker was perceived on the traits of neuroticism, conscientiousness, agreeableness, and openness to new experiences.

**Correlates of Mobile Phone use and Target Speaker.**

**Extroversion and time spent on mobile phone.** A non-significant correlation was found between participants reported time spent on their mobile phone and their perception of the extroversion of the mobile phone target $r(30) = -.202, p = .284$. This finding suggests that no relation exists between an individual’s average mobile phone use and whether mobile phone users are judged as being extroverted in nature.

**Extroversion and composite mobile phone use.** To further assess whether a significant correlation exists between participants reported mobile phone use and their perception of the extroversion of the mobile phone target, items 15 ("How much time
during a typical day do you spend on your cell phone?”), 16, (“How many text messages do you send in a day?” and 18 (“How much time do you spend on your cell phone surfing social networking sites ((e.g., Facebook)) in a day?”) were combined into a composite measure of mobile phone use and correlated with participants’ perceptions of the extroversion of the target in the one-sided mobile phone condition. Again, a non-significant correlation was found between participants’ composite mobile phone use and their perception of the extroversion of the mobile phone target $r(30) = -.050$, $p = .794$.

Monk et al. (2004b) questions and time spent on mobile phone. Non-significant correlations were found between participants reported time spent on their mobile phone and participants’ perceptions of the target speaker in the mobile phone conditions in regard to Monk et al. (2004b) questions “The conversation was noticeable” $r(30) = .110$, $p = .563$, “I found the volume of the conversation annoying” $r(30) = -.243$, $p = .196$, “The conversation was intrusive” $r(30) = -.051$, $p = .789$, and “The conversation was annoying” $r(30) = -.208$, $p = .270$.

Monk et al. (2004b) questions and composite mobile phone use. Participants composite mobile phone use (i.e., items 15, 16, & 18) was correlated with Monk et al. (2004b) questions and non-significant correlations were again found for “The conversation was noticeable” $r(30) = -.132$, $p = .486$, The conversation was intrusive” $r(30) = -.202$, $p = .285$, and “The conversation was annoying” $r(30) = -.206$, $p = .274$ in regard to the one-sided mobile phone condition. A marginally significant correlation was found between participants composite mobile phone use and Monk et al. item “I found the volume of the conversation annoying” $r(30) = -.348$, $p = .060$ in the one-sided mobile phone condition, indicating the possibility that the more time participants spend on their
mobile phone the less annoyed they are by the volume of public mobile phone conversations. In general, however, these findings are somewhat surprising as Monk et al. speculated that demographic information and mobile phone usage data may influence how people view public mobile phone conversations.

**Perception of Target Speaker with remaining Big Five Traits.** No significant Communication type X Exposure interactions were found for perceptions of the target in terms of neuroticism, $F(1, 115) = 1.32, p = .253$, conscientiousness, $F(1, 101) = .87, p = .353$, agreeableness, $F(1, 115) = .02, p = .888$, or openness to experiences, $F(1, 84) = .43, p = .515$. Across each condition, non-significant main effects were also present for neuroticism, $F(1, 115) = .94, p = .334$ (exposure), $F(1, 115) = .04, p = .834$ (communication type); conscientiousness, $F(1, 101) = 1.70, p = .196$ (exposure), $F(1, 101) = .88, p = .350$ (communication type); agreeableness, $F(1, 115) = .02, p = .898$ (exposure), $F(1, 115) = .54, p = .462$ (communication type); and openness to new experiences, $F(1, 84) = .40, p = .527$ (exposure), $F(1, 84) = .43, p = .584$ (communication type). The covariate of perceived target clarity was significant in these analyses for neuroticism, $F(1, 115) = 11.48, p = .001$, conscientiousness, $F(1, 101) = 9.55, p = .003$, and openness to new experiences, $F(1, 84) = 4.09, p = .046$.

**Discussion**

**Study Overview**

The current study examined mobile phone conversations and whether negative perceptions are due to being able to overhear one side of a conversation or due to negative feelings about mobile phones. Participants were exposed to one of four different
video conditions where a target speaker was communicating with her friend either face-to-face or over her mobile phone. It was expected that participants’ implicit personality theories of mobile phone users would influence their perceptions of the targets’ personality traits. After viewing a specific video condition, participants completed a brief questionnaire with items assessing their impressions of the conversation and target speaker. The results from these analyses seem to indicate that the one-side mobile phone conversation was perceived more negatively relative to the other conditions assessed and the target speaker in this condition was more unlikable and extroverted relative to other conditions as well.

**Perceptions of Mobile Conversations**

In general, participants indicated that the one sided mobile phone conversation was more noticeable, intrusive, and annoying compared to the two sided mobile phone conversation and one side face-to-face condition. These results support both Monk et al.’s (2004b) need-to-listen hypothesis and other research claiming that people have a generally negative view of mobile phone technology. More specifically, because a main effect did not occur for either communication type or exposure regarding participants’ perceptions of the conversation, my data suggests that it is both the technology and being able to overhear only one side of conversation that people generally dislike about mobile phone conversations. As noted above, research has found that one side mobile phone conversations are perceived negatively for various reasons. Again, Höflich (2006) found that public mobile phone conversations are a nuisance because people absorb unwanted information while overhearing these conversations whereas Emberson et al.’s (2010) found that one side overheard conversations are distracting because of the limited
predictability of speech content compared to incidents where both sides of a conversation are heard. Additionally, other research suggests that when people are asked to complete a series of cognitive tasks while in a quiet room or chatting on a mobile phone, the latter circumstance results in lower accuracy and reaction time (i.e., cognitive distractions) compared to the former (Kemker, Stierwalt, LaPointe & Heald, 2009). I believe these factors in combination with the need-to-listen hypothesis could explain why the one side mobile phone conversation was rated more negatively than the other conditions assessed. If participants have a generally negative view of mobile phone technology for specific reasons, or find mobile phone conversations distracting, this, along with the need-to-listen effect could explain why the one side mobile phone conversation was rated more negatively than the two sides mobile phone conversation and face-to-face conversation. It is important to note that this is the first study to suggest that it is not one specific factor that explains why public mobile phone conversations are perceived negatively by others.

**Perceptions of Mobile Phone Users**

Participants indicated that the target speaker in the one side mobile phone conversation was liked less than the target speaker in the two side mobile phone condition and was perceived as more extroverted when participants could only hear one side of her conversation with her friend. Based on these significant differences, it would appear that participants’ perceptions were influencing their implicit personality theories regarding mobile phone users. Not only does my data indicate that IPT’s influence people’s perceptions of others, but more specifically suggests that mobile phone users are disliked when chatting on their devices in public and are occasionally perceived as extroverted – much like the speakeasyer of which Plant (2001) spoke. Essentially it
seems as if others perceived us to be more gregarious and unlikable if we have one side mobile phone conversations on our mobile phone in public compared to those who have a similar conversation with a friend face-to-face. Further research will be needed to understand what it is about mobile phone technology and one side overheard conversations that alter our perceptions of others.

Besides the marginally significant negative correlation between participant composite mobile phone use and Monk et al. (2004b) item “I found the volume of the conversation annoying”, it was surprising not to find any other significant correlation between the amount of time participants spent on their mobile devices and their perceptions of the conversation or target speaker they observed. One would imagine that with higher mobile phone use participants would be less likely to perceive a mobile phone conversation as intrusive or annoying because they would become used to such “mobile phone mannerisms”. It also seems possible that the more time one spends on his or her mobile phone the more extroverted he or she would perceive others who also used their mobile phone in public. This was not the case; however, as there were no significant correlations between the amount of time participants spend on their mobile phone and Monk et al.’s (2004b) items or the trait of extroversion. Additionally, no significant difference was found across conditions where participants were asked to rate how neurotic, conscientious, agreeable, or open to new experiences the target speaker was. Again, it could be possible there is something about the mobile phone and how it is used that causes people to more easily infer that mobile phone users possess extroverted qualities relative to the other Big Five traits. Conversely, the possibility also exists that participants did not feel as comfortable assigning the traits of neurotic, conscientious,
agreeable, or open to new experiences to the target speaker based on the approximately 2.15 minutes long conversation and limited cues (e.g., mannerisms of the target speaker) they observed.

**Limitations**

A few limitations of the current study must be noted. First, it is important to compare the present method with that used by Monk et al.’s (2004a, 2004b). Monk et al. conducted a field experiment where participants were exposed to conversations that varied by medium, whereas my study asked participants to imagine being physically present while observing a conversation that differed by medium. By conducting an experiment in a laboratory, relative to a field setting, one is able to closely monitor the variables being manipulated. However, a certain degree of realism is also lost in the process. It seems possible that participants who are asked to imagine being present when a mobile phone conversation occurs experience something significantly different than those who are unaware they are part of a psychological experiment. Thus, one reason why my results may differ from Monk et al.’s could be due to the nature in which the conversation was presented to participants.

Another limitation that should be noted is that while the covariate of perceived target clarity was included in each analysis to account for the fact that the target speaker was understood more clearly in particular conditions over others, it would have been ideal if each condition was perceived exactly the same by participants. With the need-to-listen effect being a relatively new phenomenon to test, however, some design flaws should be expected for such an experiment.
Future Research

It is suggested that future researchers who are interested in the need-to-listen effect to conduct an experiment as the current analysis in a field setting so that this phenomenon can be thoroughly analyzed. This could be accomplished by utilizing a design similar as Monk et al.’s (2004a, 2004b) and having confidents recite an everyday conversation that only differs by medium. Unsuspecting observers of the conversation could then be given a brief survey that assesses their perception of what they just overheard. Again, I would like to emphasize that asking participants to imagine being present during a conversation may be significantly different than physically experiencing the same event.

Additionally, one may need to question what motivation factors may have played a role in the current study. Participants in my study were offered ½ credit hour and instructed to pay attention to a particular conversation whereas those in Monk et al.’s (2004b) were generally unaware they were involved in a psychological experiment. Upon speculation, it remains questionable if motivation, or lack there off, could have played a role in my experiment.

Finally, future research should investigate if people have a generally negative view on mobile phone technology for specific reasons besides those already mentioned and why one sided overheard conversations significantly influence our perceptions of others in relation to particular personality characteristics (e.g., extroversion). As noted above, I believe the need-to-listen effect only partially explains why one side mobile phone conversations are perceived more negatively relative to other forms of communication. If other reasons exist as to why one side mobile phone conversations are
more annoying and intrusive, however, such research should be pursued due to added insight it can offer on this phenomenon. Additionally, the current analysis suggests there is something about only being able to overhear one side of a conversation that alters our perception of a person speaking relative to someone who has the same conversation where both sides can be overheard. Again, future research should pursue why this is the case.
References


Appendix A:

*Character 1 is waiting for bus while character 2 approaches to also wait for bus. Character 1 notices character 2 and then begins conversation.*

**Speech**

Character 1: Hey you, how are you doing, I haven’t seen you all summer!?!”

Character 2: Hi Jen, I’m doing great! My summer was awesome by the way!!

Character 1: Oh yeah? What did you do?

Character 2: My family and me spent the summer in France to sight see and visit relatives!

Character 1: Oh wow!, I’m jealous! (smiles) What was it like?!

Character 2: It was great; first we visited my aunt and uncle who live in Normandy for most of June.

Character 1: Oh yeah? How are they doing?

Character 2: They’re doin’ great. They’re both civil servants and absolutely love their jobs. But who wouldn’t, its France?!

Character 1: I bet (laughs), so did you do any sight seeing?

Character 2: Yeah, we saw the Eiffel Tower and visited a few museums. Later we ate at a few 5-star restaurants, the food was amazing!

Character 1: So, I’m guessing you saw a bunch of cool things, huh?
Character 2: Yeah, we saw the Mona Lisa and stuff. We also saw these cave paintings that were pretty cool. I think they were called Lascaux or something like that. . .

Character 1: Did you see any parades or anything like that while you were there?
Character 2: Yeah! We saw the fireworks go off on Bastille Day. It was kind of like the fireworks here in town, but WAY better!!!

Character 1: (Smirks) Well yeah, but what can ya do?
Character 2: Yeah.

Character 1: Well, nothing has really been going on here with me, just the same old, same old.
Character 2: Well, maybe you should come with me some time to Normandy, I’m sure my aunt and uncle won’t mind.

Character 1: Really?! That would be so cool. I’d love to do that sometime.
Character 2: I’ll let you know after I call them sometime; it shouldn’t be a problem at all!

Character 1: Well hey, my ride is here, but it was really nice talking to you again!

*(1 actor walks off camera to imaginary bus)*

Character 2: Yeah you too Jen. I’ll see you later!!

**Person on Mobile phone will be speaking/ acting the mannerisms of Character 1 lines**
Appendix B:

On the following pages, these questions ask you to indicate your impression of what you just witnessed from the conversation. Again, please imagine as the student waiting at the Bus Stop and use the rating scale below to indicate your impression of what you just viewed. Describe accurately your impressions and read each statement very carefully. Your responses will be kept in absolute confidence.

1. The conversation was noticeable:
   
   1  2  3  4  5
   Strongly Disagree  Disagree  Undecided  Agree  Strongly Agree

2. I found the volume of the conversation annoying:
   
   1  2  3  4  5
   Strongly Disagree  Disagree  Undecided  Agree  Strongly Agree

3. The conversation was intrusive:
   
   1  2  3  4  5
   Strongly Disagree  Disagree  Undecided  Agree  Strongly Agree

4. The conversation was annoying:
   
   1  2  3  4  5
   Strongly Disagree  Disagree  Undecided  Agree  Strongly Agree

Continue on next page...
For the following questions, please rate your impressions of Jen from the video. Read each item carefully and circle a number that corresponds with how you feel in relation to the question being asked.

5. I feel that Jen (female with black coat and white scarf) is a likable person:

1 \hspace{1cm} 2 \hspace{1cm} 3 \hspace{1cm} 4 \hspace{1cm} 5
Strongly Disagree \hspace{1cm} Disagree \hspace{1cm} Undecided \hspace{1cm} Agree \hspace{1cm} Strongly Agree

6. I would like to be friends with Jen or someone very similar in personality:

1 \hspace{1cm} 2 \hspace{1cm} 3 \hspace{1cm} 4 \hspace{1cm} 5
Strongly Disagree \hspace{1cm} Disagree \hspace{1cm} Undecided \hspace{1cm} Agree \hspace{1cm} Strongly Agree

7. Jen seems easily approachable:

1 \hspace{1cm} 2 \hspace{1cm} 3 \hspace{1cm} 4 \hspace{1cm} 5
Strongly Disagree \hspace{1cm} Disagree \hspace{1cm} Undecided \hspace{1cm} Agree \hspace{1cm} Strongly Agree

8. I was able to understand Jen clearly:

1 \hspace{1cm} 2 \hspace{1cm} 3 \hspace{1cm} 4 \hspace{1cm} 5
Strongly Disagree \hspace{1cm} Disagree \hspace{1cm} Undecided \hspace{1cm} Agree \hspace{1cm} Strongly Agree

9. I was able to understand Jen’s friend clearly:

1 \hspace{1cm} 2 \hspace{1cm} 3 \hspace{1cm} 4 \hspace{1cm} 5
Strongly Disagree \hspace{1cm} Disagree \hspace{1cm} Undecided \hspace{1cm} Agree \hspace{1cm} Strongly Agree

Continue on next page...
Please provide the following information about yourself.

8. Please circle your gender: Male Female

9. How old are you? ______________

10. What year are you in college? Circle one:

   Freshman   Sophomore   Junior   Senior

11. What is your ethnicity? (circle all that apply)

   Black/African-American   Asian   Latino/Hispanic

   White/ Caucasian   Other (explain) ______________

12. Major _______________________ (please indicate)

13. Do you own a mobile phone? Yes/ No (If no, please skip to question 20).
For the following questions please estimate how often you perform the following activity with your mobile phone.

14. In a typical day how many hours do you leave your cell phone OFF?

_____ hrs. per day

15. How much time during a typical day do you spend on your cell phone?

_____ hrs. per day

16. How many text messages do you send in a day?

_____ messages per day

17. How many picture messages do you send in a week?

_____ pictures messages per week

18. How much time do you spend on your cell phone surfing social networking sites (e.g., Facebook) in a day?

_____ hrs. per day

19. How much time do you spend listening to music on your cell phone in a given week?

_____ hrs. listening to music per week

Continue on next page...
Ten-Item Personality Inventory-(TIPI)

Here are a number of personality traits that may or may not apply to Jen. Please write a number next to each statement to indicate whether you agree or disagree that Jen possesses these characteristics. You should rate the extent to which the pair of traits applies to Jen, even if one characteristic applies more strongly than the other.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Disagree a Little</th>
<th>Neither Agree or Disagree</th>
<th>Agree a Little</th>
<th>Agree Moderately</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

I see Jen as:
20. _____ Extraverted, enthusiastic.
21. _____ Critical, quarrelsome.
22. _____ Dependable, self-disciplined.
23. _____ Anxious, easily upset.
24. _____ Open to new experiences, complex.
25. _____ Reserved, quiet.
26. _____ Sympathetic, warm.
27. _____ Disorganized, careless.
28. _____ Calm, emotionally stable.
29. _____ Conventional, uncreative.
Table 1

Perceptions of Target Speaker and Conversation as a Function of Mode and Modality

<table>
<thead>
<tr>
<th>Communication Mode</th>
<th>Mobile Phone</th>
<th></th>
<th>Face-to-Face</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>One-Sided</td>
<td>Two-sided</td>
<td>One-Sided</td>
</tr>
<tr>
<td>Dependent Measure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noticeable Conversation</td>
<td>4.371* (.173)</td>
<td>3.762 (.185)</td>
<td>3.523 (.183)</td>
<td>3.977 (.173)</td>
</tr>
<tr>
<td>Annoying Volume</td>
<td>4.235 (.170)</td>
<td>3.481 (.182)</td>
<td>3.827 (.180)</td>
<td>3.557 (.170)</td>
</tr>
<tr>
<td>Intrusive Conversation</td>
<td>3.368 (.162)</td>
<td>2.459 (.173)</td>
<td>2.480 (.171)</td>
<td>2.527 (.162)</td>
</tr>
<tr>
<td>Annoying Conversation</td>
<td>3.699 (.190)</td>
<td>2.935 (.204)</td>
<td>2.862 (.201)</td>
<td>3.537 (.190)</td>
</tr>
<tr>
<td>Overall Likability</td>
<td>10.358 (.287)</td>
<td>11.309 (.287)</td>
<td>11.555 (.284)</td>
<td>11.184 (.289)</td>
</tr>
<tr>
<td>Target Clarity</td>
<td>3.667* (.173)</td>
<td>2.967* (.173)</td>
<td>4.333* (.173)</td>
<td>3.767* (.173)</td>
</tr>
<tr>
<td>Friend Clarity</td>
<td>1.867* (.159)</td>
<td>2.433* (.159)</td>
<td>1.400* (.159)</td>
<td>1.533* (.159)</td>
</tr>
<tr>
<td>Extroversion</td>
<td>10.204 (.458)</td>
<td>9.448 (.491)</td>
<td>11.969 (.485)</td>
<td>10.446 (.458)</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>5.521 (.405)</td>
<td>5.471 (.434)</td>
<td>5.147 (.429)</td>
<td>6.028 (.406)</td>
</tr>
<tr>
<td></td>
<td>First Group</td>
<td>Second Group</td>
<td>Third Group</td>
<td>Fourth Group</td>
</tr>
<tr>
<td>----------------</td>
<td>-------------</td>
<td>--------------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>10.490</td>
<td>10.346</td>
<td>11.115</td>
<td>10.363</td>
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<tr>
<td></td>
<td>(.323)</td>
<td>(.348)</td>
<td>(.344)</td>
<td>(.323)</td>
</tr>
<tr>
<td>Openness</td>
<td>10.645</td>
<td>10.640</td>
<td>10.661</td>
<td>10.253</td>
</tr>
<tr>
<td></td>
<td>(.310)</td>
<td>(.314)</td>
<td>(.345)</td>
<td>(.311)</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>7.299</td>
<td>7.227</td>
<td>7.470</td>
<td>7.471</td>
</tr>
<tr>
<td></td>
<td>(.262)</td>
<td>(.281)</td>
<td>(.277)</td>
<td>(.262)</td>
</tr>
</tbody>
</table>

*Unadjusted Means
NOTE: Values in parenthesis represent standard error.
Table 2

Multivariate Analysis of Variance for Perception of Conversation (Wilks’ Lambda)

<table>
<thead>
<tr>
<th>Source</th>
<th>Value</th>
<th>F</th>
<th>Hypothesis df</th>
<th>Error df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target Clarity</td>
<td>.910</td>
<td>2.781</td>
<td>4.000</td>
<td>112.000</td>
<td>.030</td>
</tr>
<tr>
<td>Exposure</td>
<td>.888</td>
<td>3.537</td>
<td>4.000</td>
<td>112.000</td>
<td>.009</td>
</tr>
<tr>
<td>Communication Type</td>
<td>.931</td>
<td>2.073</td>
<td>4.000</td>
<td>112.000</td>
<td>.069</td>
</tr>
<tr>
<td>Exposure * Communication Type</td>
<td>.825</td>
<td>5.939</td>
<td>4.000</td>
<td>112.000</td>
<td>.000</td>
</tr>
</tbody>
</table>
Table 3

Analysis of Variance for Likability of Target Speaker

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target Clarity</td>
<td>57.559</td>
<td>1</td>
<td>57.559</td>
<td>25.022</td>
<td>.000</td>
</tr>
<tr>
<td>Exposure</td>
<td>2.254</td>
<td>1</td>
<td>2.254</td>
<td>.980</td>
<td>.324</td>
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<tr>
<td>Communication Type</td>
<td>.051</td>
<td>1</td>
<td>.051</td>
<td>.022</td>
<td>.882</td>
</tr>
<tr>
<td>Exposure * Communication Type</td>
<td>12.156</td>
<td>1</td>
<td>12.156</td>
<td>5.285</td>
<td>.023</td>
</tr>
<tr>
<td>Error</td>
<td>262.241</td>
<td>114</td>
<td>2.300</td>
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</tbody>
</table>
### Table 4

**Analysis of Variance for Extroversion of Target Speaker**

<table>
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<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target Clarity</td>
<td>6.622</td>
<td>1</td>
<td>6.622</td>
<td>1.053</td>
<td>.307</td>
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<tr>
<td>Exposure</td>
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<td>34.924</td>
<td>5.556</td>
<td>.020</td>
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<tr>
<td>Communication Type</td>
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<td>49.533</td>
<td>7.879</td>
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<tr>
<td>Exposure * Communication Type</td>
<td>4.407</td>
<td>1</td>
<td>4.407</td>
<td>.701</td>
<td>.404</td>
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<tr>
<td>Error</td>
<td>722.978</td>
<td>115</td>
<td>6.287</td>
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