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Perceiving Sex in Text Messages: Pepperdine Students Use Screenshots to Distinguish Individuals' Sexes

Rachel Yoshimura

Edmund Rothfus

Jingy Liu

Baixue Zheng

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Rachel Yoshimura, Edmund Rothfus, Jingy Liu, Baixue Zheng
Pepperdine University
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Abstract

This study aims to investigate communication styles of the sexes within the context of computer-mediated communication. Though prior research has been conducted regarding the communication styles of males and females, this study focuses on whether people can distinguish the sex of individuals through analyzing text messages as well as what kind of communication factors influence their determination of sex. An online survey containing screenshots of text messages and corresponding questions was sent out to Pepperdine University undergraduates, and 108 students responded. The responses of the survey found that the college students could accurately determine the sex of the individuals in the text messages 83.07 percent of the time. According to the participant's surveys, the most frequent influencing factor that lead to the correct determination of sex was vocabulary choice (selected 71.9 percent of the time), followed by message length (selected 49.5 percent of the time), and then emoji or emoticon use (selected 45.6 percent of the time). The results of this study imply that people are aware that males and females communicate differently and are able to identify the specific differences between the sexes' communication style within text messages.

Key words: Sex, gender, communication style, computer-mediated communication.

Gender can be a source of identity for many people; their masculinity or femininity allows them to belong to a larger group of people who share common mannerisms and traits. Although gender is different than sex, sex is one of the first things used to describe a person (Cameron, 2006). Besides physical anatomy, there are many other attributes that make the sexes distinguishable. For example, women tend to ask more questions than men, and men often use more assertive language than women (Verderber, 1995). Large amounts of differences exist between the communication styles of males and females, but can people use the specific aspects of each gender's communication style to indicate an individual's sex? What if people were only given screenshots of text messages to determine the sex of an individual?

Review of Literature

Gender

While one's sex is physically determined from birth, one is not born with a gender; gender is determined by a socially and psychologically created culture (Cameron, 2006). Gender is learned "through a process of socialization and education and [is] culturally determined by a society's perceptions of the roles which men and women are expected to perform"(Loosemore & Galea, 2008, p 126). Because gender, itself, is a form of culture, it strongly affects the way people communicate with each other (Loosemore & Galea, 2008). At a large public university,

Henrtenstein and Keltner (2010) conducted an experiment with 212 students who were randomly paired to encoded or decoded emotion words such as anger, disgust, love, and pride. The participants were not allowed to speak or see each other and were only able to express through touch. The study found that women in the study were better able to communicate sympathy and happiness by briefly touching the arm of a stranger, while the men in the study were better able to communicate anger through physical touch.

In addition to exploring nonverbal expression, researchers have also studied verbal language to further understand gender distinction in communication. Loosemore and Galea (2008) interviewed construction workers in Australia with experience ranging from 1-year to 45-years to examine the verbal communication styles within the Australian construction industry. The researchers found that in conflict, men use word choices and tones that feed altercations, while women use language that detaches themselves from situations and addresses the underlying cause of problems. In Henrtenstein and Keltner's (2010) study and in Loosemore and Galea's (2008) study, researchers found differences in the behavior and communication styles of each gender. Although sex doesn't not determine gender (Cameron, 2006), the majority of men adopt a masculine style of communication and the majority of females adopt a feminine style of communication (Kwal & Gamble, 2014). The previous two studies (Henrtenstein & Keltner, 2010; Loosemore & Galea, 2008) examined the differences between the communication styles of each gender and how to go about accommodating these differences.

Genderlect Styles Theory

In her theory, Tannen (2011) distinguishes masculine and feminine communication as two unique categories and states that male-female interactions should be viewed as cross-cultural communication. The theory claims that men try to gain status through their communication, while females try to gain connections. There are differences in the nature and motivation behind each gender's communication as well as in their style of delivery and use of language (Griffin, 2014). Researchers have used Genderlect Theory as a framework for investigating the communication styles of women and men. Edwards and Hamilton (2004) used Tannen's theory as the foundation of their study and administered questionnaires to 192 European American university students. The results found that females are more likely than males to interpret messages as cooperative, but Edwards and Hamilton (2004) also clarify that "gender role is a better predictor of cooperative inferences than is biological sex" (p 502). According to Tannen (2011), people must understand that each gender has a distinct style of communication in order to effectively communicate and co-exist with each other. Gender differences in communication styles have been observed in verbal communication (Loosemore & Galea, 2008) and nonverbal communication (Henrtenstein & Keltner, 2010). Besides nonverbal communication using physical touch, other research has examined communication styles in technological correspondences like computer-mediated communication (CMC).

CMC

CMC is solely text-based, computer-mediated communication that allows virtual groups to interact. Mobile phones have enabled the rapid growth of CMC in recent decades and support mostly private communication (Herring & Stoerger, 2013). Igarashi, Takai, and Yoshida (2005) utilized the medium of mobile phone text messages (MPTM) to investigate gender differences in the establishment of social networks. The researchers surveyed 132 first-year law undergraduates about their interpersonal communication with friends via MPTM and found that women have

more consistent, stable relationships than men in social networks created through MPTM. In group-chats, both men and women establish interpersonal relationships early on, but women tend to establish more group relationships over time.

In addition to the unique relationships men and women form through CMC, males and females use different vocabulary and syntax in their messages. Savicki and Merle (2000) conducted experiments using group chats to analyze four separate focus groups composed of undergraduates with varying age and gender. The researchers found that in groups of only women, women use more "I" statements than men in male-only groups; in groups of only men, men use more coarse language than women in female-only groups. Baron (2004) analyzed 22 college-aged students' Instant Message records and found that men are more likely to use contractions and women tend to send longer messages. Tossell, Kortum, Shepard, Barg-Walkow, Rahmati and Zhong (2012) analyzed the text-message histories of 21 college students and discovered that females use more emoticons.

These three sets of researchers (Savicki & Merle, 2000; Baron, 2004; Tossell et al., 2012) combined Genderlect Theory with CMC to examine gender-specific behaviors in communication. Their findings ranged from the differences of the broad motivation behind the text messages to the specific vocabulary choice. Although these three studies alone show the extensive amount of gender distinctions in communication, no research was found on how accurately people can perceive a person's gender based off of CMC interactions. Gender and sex aren't necessarily related and gender is performed while sex is determined from birth (Cameron, 2006), but most males assume a masculine style of communication and most females assume a feminine style of communication (Kwal & Gamble, 2014).

Hypothesis and Research Question

Genderlect Theory as well as the topic of gender within the context of CMC acted as the foundation for the following hypothesis and research question:

H: By examining text messages, men and women are able to distinguish an individual's sex, specifically by looking at emoticon or emoji use, length of message, and vocabulary choice.

RQ: Which communication factors influence how college students' perceive someone's sex through text messages?

Method

Participants and Procedures

Students at Pepperdine University, a small, private, Christian college in Malibu, California, took part in this cross-sectional survey by reading five separate text message conversations and answering questions regarding those texts. 108 respondents, consisting of 40 men and 68 women, with ages ranging from 18-23, answered the survey. Participants were found using a convenience sample; an online questionnaire, which can be found in Appendix B, was emailed out and posted on Pepperdine-only Facebook groups. Before completing the survey, the participants were asked to read and sign the consent form found in Appendix A. The purpose of this survey was to find out if these students could determine sex by analyzing text conversations and what made each sexes' communication style distinguishable.

Materials

Google Forms was used to generate, collect, and help analyze the surveys. Cellular phones were used to find and screenshot pre-existing text message conversations.

Measures

   Perception of sex. Sex is biological, while gender is performed (Cameron, 2006). For the purposes of our study, we simplified the survey based on the fact that the majority of men adopt a masculine style of communication and the majority of women adopt a feminine style of communication (Kwal & Gamble, 2014). After reading each text conversation, the participants were asked to determine the sexes of those in the conversation. A nominal scale was used for the survey; for each screenshot, the participants determined the sex of each individual in the texts by selecting either "Male" or "Female."

   The latter questions in the survey determined the reasoning behind students' perceptions regarding the communications style of each person texting. Students were given four categories as to why they predicted each individual's sex: emoticon or emoji use, length of message, vocabulary choice, and other. For example, each question asking the sex of an individual was followed up with a question like this: "What factor(s) led you to your decision about Person A's sex?" A nominal scale was used for measuring the factors; the options included "Use of emojis/emoticons", "No use of emojis/emoticons", "Long messages", "Short messages", "Vocabulary choice (i.e. coarse language)" and "Other". Participants that checked off "Other" were asked to elaborate.

   Demographics. Students self-reported their sex ("Male" or "Female"), age ("Younger than 18", "18-23", and "Older than 23") and majority sex of their friend group ("Male" or "Female"). 63 percent of respondents were female, and 63 percent of respondents said the majority of their friends were females. All respondents were 18-23 years old.

Results

H: The hypothesis predicted that men and women are able to distinguish the sex of individuals through the analysis of text messages. Participants in the study were able to correctly determine the sex of the individuals texting in the screenshots 83.07% of the time. The correlation coefficient for the male participant's accuracy in perceiving the sex of the individuals was .82. Female participants had a higher correlation coefficient of .89. Thus, this hypothesis is supported.

RQ: The research question asked which communication factors influence how college students' perceive someone's sex through analyzing text messages. Given the options of emoji/ emoticon use, message length, vocabulary choice, and "other", participants correctly selected emoji/ emoticons 45.6% of the time, message length 49.5% of the time, vocabulary choice 71.9% of the time to determine the sex of the individuals texting in the screenshots.

Discussion

Implications

   The results of this study suggest that men and women are aware of the sexes' communication differences found in previous research (that women use more emojis/ emoticons than men, men send shorter messages than women, and men use more coarse language than women). Another implication of this study is that women are able to more accurately determine

an individual's sex through analyzing text messages than men. This affirms prior research that states that women engage in more a conversational style of communication that makes them more perceptive to differences in the communication styles of each sex (Verderber, 1995).

Strengths and Weaknesses

The research and survey had several strengths and weaknesses. One strength was that prior research about gender text-based communication clearly revealed that emoji/emoticon usage, length of messages and vocabulary choices were the strongest indicators of a person's sex. These indicators were used as options for the factors that influenced participants' perception; this focused the participants' responses and allowed specific results to be drawn from the survey. Another strength was that the screenshots used in the survey contained all of these strong indicators, meaning the screenshots were accurate representations of male and female communication styles. Additionally, the survey had a large number of respondents (108) and the sex breakdown of respondents was similar to the sex breakdown of Pepperdine University (Study: males 37 percent, females 63 percent; Pepperdine: males 41 percent, females 59 percent).

However, a weakness of the study was that offering the choices of emoji/emoticon usage, length of messages, and vocabulary choice might have influenced participants' answers because they were presented with those choices. According to prior research, emoji/emoticon usage, length of message, and vocabulary choice are the best ways to distinguish sex in texts, however, they are not the only distinguishing factors; no previous studies were found that focused on other factors, and thus only the three factors were included in the survey. However, an "other" option was included so participants did have the opportunity to describe other influencing factors.

Future Research

Many respondents wrote in examples of punctuation as one of the factors that influenced their determination of sex; further research can be conducted about the frequency and the grammatical correctness of punctuation used by each sex. Besides punctuation, there are most likely several other factors (such as capitalization and timespan between responses) that could be examined if the topic of text-based communication was more thoroughly delved into. In addition to influencing factors, further research could be conducted about characteristics of the participants that affect their ability to determine sex through analyzing text messages. For example, how accurately would women that adopt a masculine style of communication be able to determine sex through examining text messages? What about men that adopt a feminine style of communication? Another possible attribute that could be examined is the majority sex of participants' friend groups. Would participants with mostly friends of the opposite sex be more accurate or less accurate in distinguishing sex through analyzing text messages?

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Appendix A

Consent Form for Participation in a Research Study
Pepperdine University

Gender Communication

Description of the research and your participation

You are invited to participate in a research study conducted by Rachel Yoshimura, Edmund Rothfus, Jingyi Liu, and Baixue Zheng. The purpose of this research is to figure out if people are aware of the communication differences between males and females via text messages.

Your participation will involve taking an online survey.

Risks and Discomforts

There are no known risks associated with this research.

Potential Benefits

There are no known benefits to you that would result from your participation in this research.

Protection of confidentiality

We will keep everything about your survey private. Your identity will not be revealed in any publication resulting from this study.

Voluntary participation

Your participation in this research study is voluntary. You may choose not to participate, and you may withdraw your consent to participate at any time. You will not be penalized in any way should you decide not to participate or to withdraw from this study.

Contact information

If you have any questions or concerns about this study or if any problems arise, please contact Rachel Yoshimura, Edmund Rothfus, Jingyi Liu, or Baixue Zheng at Pepperdine University at rachel.yoshimura@pepperdine.edu, edmund.rothfus@pepperdine.edu, jingyi.liu@pepperdine.edu, or baixue.zheng@pepperdine.edu. If you have any questions or concerns about your rights as a research participant, please contact Professor Delphine Broccard at Delphine.Broccard@pepperdine.edu.

Consent

I understand to my satisfaction the information regarding participation in this research study. I affirm that I am at least 18 years old, and I hereby consent to participate in the research described above.

Participant's signature_____ Date:_____