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Effects of Emoji Usage on Perceptions of Sender

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by

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Abstract

Effects of Emoji Usage on Perceptions of Sender

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While texting gains traction as one of the most prevalent forms of communication, emojis – small digital icons used to express emotions and represent faces, weather, animals, plants, activities, and more – have become popular substitutes for the visual cues missing from text-based communication. Despite their pervasiveness and proposed role in enabling users to perform the "emotion work" required for interpersonal impression and affinity development, the effects of emoji usage on perceptions of the sender are not thoroughly examined, especially outside of the workplace. The current study employs a self-administered, mixed experiment to determine the effects of emoji usage – specifically emoji valence, emoji type, emoji alignment, and sender type – on how likable and intelligent the receiver perceives the sender to be, as well as the receiver's emotional connection to the sender. The study indicates that emojis are not inconsequential when it comes to social perception – although gender and relational attributes are important moderators of what is perceived as desirable for emoji usage. The findings have implications for improved digital impression management and contribute to a theoretical as well as empirical understanding of how emojis affect perceptions of the sender.

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Chapter 1
Introduction

Effects of Emoji Usage on Perceptions of Sender

As defined in the *English Oxford Living Dictionaries* (2017), emojis are small digital icons used to express ideas or emotions in electronic communication. These icons, which now number over 3,000 since their introduction in 1999, can also represent faces, weather, vehicles, buildings, food and drink, animals, plants, feelings, and activities (Davis, 2017). The word “emoji” is actually derived from the Japanese characters 絵 ("e," picture), 文 ("mo," write) and 字 ("ji," character), which is fitting given the role of emojis in enhancing text-based electronic communication with visual cues previously only present in face-to-face communication, such as facial expressions and gestures (Pardes, 2018; Prisco, 2018).

Emojis, which were first encoded in Unicode (a worldwide character-encoding standard) in 2010, are now built into multiple devices and applications. As a result, these digital icons are popularly shared by users from varying countries, cultures, and demographic groups. Despite being encoded in Unicode, however, emoji renderings tend to differ across platforms because of varying fonts (Lu et al., 2016). Major fonts include Apple (used on Messages on iOS and WhatsApp), Google (used on Android interfaces, Google Hangouts, and Gmail),

Samsung (built in on devices with Samsung's TouchWiz skin), Microsoft (on Windows PCs, Microsoft Surface, and Windows Phones), and Facebook (on Facebook and Facebook Messages). Social media platforms like Instagram, Twitter, and Snapchat also have their own emoji languages (Neal, 2015). On Messenger, Facebook's messaging app, over 5 billion emojis are sent and received every day (Pardes, 2018). Additionally, more than 700 million emojis are posted on Facebook daily – which is a 1066% increase since 2017 (Cohen, 2018; Reuters, 2017). But, Facebook is just one of the many social media sites where emojis proliferate. In fact, over half of all comments on Instagram include at least one emoji (Pardes, 2018),

The wide and rapid adoption of emojis raises questions about their effect on communication outcomes. Although research on the use and interpretation of emojis is still in its infancy, emojis have been shown to communicate affect, disambiguate message content, serve important verbal and nonverbal communication functions, provide insight into the user's personality, and allow users to perform the emotion work required for relationship development and maintenance while not physically present (Kaye, Malone, & Wall, 2017; Riordan, 2017; Yuasa, Saito, & Mukawa, 2011). This last function, allowing users to do emotion work (i.e. performances to satisfy a social role) (Riordan, 2017), is critical and overarches the other identified functions because it fulfills a fundamental human need: the formation and maintenance of relationships. Despite the fundamental nature of social perception (i.e. how people form impressions and make inferences about others) in the development and maintenance of interpersonal relationships, as well as the centrality of relationship development and maintenance to everyday life, the effects of emoji usage on perceptions of sender, especially outside of the workplace, are still largely unexplored. For example, what effects do emoji usage have on the perceived likability of the sender, which is a crucial

element of relationship maintenance (Canary & Yum, 2015; Fiske, Cuddy, & Glick, 2007)? What are the effects of emoji usage on perceived intelligence of the sender – a trait used as a heuristic for competence, one of the universal dimensions of social perception and cognition (Fiske et al., 2007)? How do variances in emoji usage affect the receiver's emotional connection to the sender, when emotion and emotional connection is an essential moderator of interpersonal relationships (Schoebi & Randall, 2015)?

While these questions have yet to be examined, what is certain is that emojis are increasingly being used in text-based electronic communication – and this is occurring at the same time as texting takes center stage as one of the most common forms of communication in the U.S. and globally (Statistic Brain Research Institute, 2017). In fact, a shocking 781 billion texts are sent in one month alone in the U.S. (Statistic Brain Research Institute, 2017). Even more incredibly, Gallup Inc. reports that the most prevalent form of communication for American adults under 50 is sending and receiving text messages (2014). In other words, texting is now the dominant mode by which most U.S. citizens communicate – replacing face-to-face communication and phone conversations.

As the number of interactions that occur through text-based messaging platforms continues to increase and the proliferation of emojis increases with it, understanding the effects of emojis on social perception, a critical moderator of relationship development and maintenance, becomes essential. For this reason, the current study extends research beyond examinations of how emoticons and emojis influence perceptions of message content into the uncharted terrain of how they influence the way the receiver perceives the sender. By systematically comparing and analyzing the effects of emoji usage on the receiver's perceptions of the sender, the study takes a novel look at whether emojis are effective tools for impression management and whether emojis actually allow users to perform the emotion work

required for relationship development and maintenance in face-to-face interactions virtually. Aside from offering practical insights for smarter texting decisions and improved text-based communication outcomes, this study aims to enhance our theoretical and empirical understanding of the relationship between emojis and social perception. The ability to develop and maintain relationships is a fundamental human need – and it is time to more fully understand the way our digital communication habits support and threaten this need.

The current study explores whether emoji valence (positive versus negative), emoji alignment (consonant versus dissonant), emoji type (facial versus non-facial), and sender type (female acquaintance, male acquaintance, female friend, and male friend) affect how likable and intelligent the receiver perceives the sender to be, as well as how emotionally connected the receiver feels to the sender. These three outcome variables – likability, intelligence, and emotional connection – are the focus of the study because they are fundamental to how people judge one another. Research on social perception firmly establishes that people globally differentiate and judge each other by liking (which involves warmth from likability and emotional connection) and by respecting (which involves competence indicated by intelligence) (Fiske et al., 2007). These constructs are related, together accounting almost entirely for how people characterize one another, but distinct – with liking or warmth being judged before competence and carrying more weight in affective and behavioral reactions (Fiske et al., 2007). This shift away from measuring how emojis change perceptions of message affect, clarity, and content is intended to mature research beyond simple confirmations that emojis communicate affect and disambiguate message content in order to understand what this means for the sender of the message and how he or she is perceived by the receiver, as well as how emojis can be used to positively affect these perceptions.

Chapter 2
Literature Review

Emoticons :) – The Antecedent of Emojis

Although studies investigating how emoji usage affects perceptions of the sender are essentially nonexistent, a more substantial body of research exists for emoticon use – the antecedent of emojis. Emoticons, introduced in 1982 Carnegie Mellon professor Dr. Scott Fahlman, differ from emojis in composition and maturity but are nonetheless intimately connected (Baer, 2015). Similar to emojis, emoticons serve as substitutes for the nonverbal cues that are missing from computer-mediated communication (CMC) in comparison to face-to-face communication (Lo, 2008; Rezabek & Cochenour, 1998; Walther & D'Addario, 2001). Like a question mark or an exclamation point, emoticons evolved to convey social meaning that would not be obvious simply from the arrangement of words in a message. In other words, they are a social adaptation to the less-signal-rich medium of text-based communication that has proliferated in the digital age (Baer, 2015; Walther, 2011). Because emojis evolved from emoticons, research on these comparatively rudimentary pictorial representations of facial expressions created using punctuation marks, numbers, and letters has been used to help inform emoji research, including the present study. With that being said, however, the most prominent area of emoticon research focuses on professional and work-related communication – leaving daily interactions occurring outside of the workplace between friends and acquaintances unilluminated by research.

Emoticon research has demonstrated that emoticon use and interpretation can vary by age, gender, geography, social glass, and culture (Oleszkiewicz et al., 2017; Takahashi, Oishi, & Shimada, 2017). For example, females use emoticons more than males do – and emoticon usage decreases with age (Oleszkiewicz et al., 2017; Takahashi, Oishi, & Shimada, 2017). Interestingly, there is evidence that while emoticons resembling smiley faces make ambiguous messages more positive and frowny faces make messages more negative than messages without emoticons in texts between friends (Lo, 2008; Luor, Wu, Lu, & Tao, 2010), the use of smileys (☺) in the workplace can actually negatively affect perceptions of warmth and competence and undermine information sharing (Glikson, Cheshin, & Van Kleef, 2017). This research suggests that the formality of the social context determines the adverse effects of smiley use – and that regardless of the direction of the effect, these communication elements are not inconsequential. For this reason, the present study shifts the contextual focus of emoji research from workplace communication to another important and perhaps even more common context – interpersonal communication exchanges involving friends and acquaintances.

Research outside of emoticon use examines the way the brain recognizes and processes these communication elements. Fascinatingly, studies involving fMRI imaging have confirmed that emoticons, as well as emojis, are recognized and processed by the brain as nonverbal information (Yuasa, Saito, & Mukawa, 2011). At certain configurations, emoticons activate the region of the brain responsible for face perception, known as the occipitotemporal cortex (Churches & Nicholls, 2014). Even when regions of the occipitotemporal cortex are not activated in response to emoticons, the region of the brain stimulated by emotional valence detection called the right inferior frontal gyrus is still activated (Yuasa, Saito, Mukawa, 2006). Despite or possibly because of the simplicity of emoticons, they are remarkably more reliably recognized than human facial expressions (Gifford,

2012). The effects and mechanisms of these finding are not thoroughly understood but suggest that even though emoticons and emojis diverge from nonverbal behavior on the important dimension of intentionality, the brain still processes them as nonverbal information. Regarding intentionality, whether verbal or iconic, typed-out textual symbols do not share the same involuntarily nature associated with many forms of nonverbal behavior (Walther & D'Addario, 2001). For this reason, researchers have termed emoticons and emojis "quasi-nonverbal cues" – i.e. information presented as a verbal cue that nonetheless performs nonverbal communication functions (Lo, 2008). Because of these findings categorizing emoticons and emojis as nonverbal or at least quasi-nonverbal cues, research on traditional face-to-face nonverbal communication has been useful in predicting the effects of emoticons in computer-mediated communication – and is an important foundation for predicting the implications of emoji usage in text-based communication.

Nonverbal Communication and Emojis as Nonverbal Cues

Nonverbal communication, defined as behavior of the face, body, or voice excluding linguistic content (i.e. words), is the common denominator in social life (Hall, Horgan, & Murphy, 2019). It is part of every face-to-face interaction and even many electronically-mediated interactions, despite purely text-based communication being devoid of the important nonverbal cues, such as facial expressions, eye contact, gestures, head nodding, and posture, found in face-to-face communication (Gifford, 2012; Hall et al., 2019; Walther & D'Addario, 2001). As CMC and interpersonal communication theories explain, adaptations were necessarily made to migrate social cues into lean media environments that originally lacked them – hence the wide and rapid adoption of emojis (Lo, 2008; Walther, 2011). The field of nonverbal communication research is vast and

includes domains ranging from evolutionary origins and physiological or neurological processing to intra- and interpersonal usages, correlates, and consequences (Hall et al., 2019). Studies of nonverbal communication in the context of interpersonal relationships have typically focused on liking or attraction; organizational contexts such as job interviews; universalities or the lack thereof in the meaning of nonverbal cues; and qualities of the sender and receiver, such as intelligence, personality, culture, race, relationship status, and attractiveness (Gifford, 2012).

According to this body of research, nonverbal communication unquestionably shapes relational meaning, development, and maintenance; is rule-guided; and is influenced by culture (Hall et al., 2019; Walther, 2001). Theories of nonverbal communication that have emerged from the research suggest that verbal and nonverbal cues are the two major communication cue structures, with a substantial portion of our communication being nonverbal (Walther, 2001). In fact, nonverbal cues are important indicators of a speaker's meaning, accounting for a minimum of 65% of meaning during face-to-face communication (Schmidt, Conaway, Easton, & Wardrope, 2007). Research has demonstrated how nonverbal behavior predominates the effects of language content in most conditions, especially for emotive and relational outcomes, and can repeat, contradict, substitute, complement, underline or accent, and direct our verbal messages (Schmidt et al., 2007; Walther, 2001). In terms of visual cue primacy, nonverbal communication research asserts that facial expressions have even greater effects than vocal and spatial nonverbal cues – and that reliance on nonverbal cues, especially facial expressions, increases when incongruities exist between the verbal and nonverbal messages (Walther, 2001). Interestingly, a general conclusion of nonverbal communication is that facial expressions for main emotions are universal. However, rules for when and how to use them, as well as how to decode

them, differ culturally. For example, Asians tend to decode emotions as having lower intensity than Americans do (Gifford, 2012). Regarding intentionality, facial expressions are generally considered among the most controllable nonverbal cues, but are still considered, like most forms of nonverbal behavior, to be less deliberate and controlled than verbal communication (Walther, 2001). Despite these conclusions, nonverbal communication is incredibly complex and can be challenging to both study and summarize. Nonetheless, our understanding of emojis and the way they might contribute to or affect social meaning can be informed by existing research on traditional face-to-face communication, largely because of their recognition neurologically as nonverbal information (Yuasa, Saito, & Mukawa, 2011). Additionally, theories related to computer-mediated and interpersonal communication can help explain why emojis were so rapidly and widely adopted and, in part, what social effects can be predicted for their use.

Media Richness Theory, Social Information Processing Theory, and Channel Expansion Theory

Media Richness Theory

Media richness theory, one of the most popular models of CMC, provides a framework for understanding which communication media support multiple verbal and nonverbal cue systems – and ultimately why CMC users have been driven to augment the meaning of textual electronic messages with emoticons and emojis (Walther & D'Addario, 2001). According to the theory, media richness is a function of four dimensions: 1) the medium's capacity for immediate feedback, 2) the number of cue systems supported by the medium, 3) the potential for natural language, and 4) message personalization. A medium that can promote understanding in a timely manner is considered rich. Based on this framework,

face-to-face communication is the richest. Video conferencing, phone calls, letters, emails, texts, and unaddressed documents each offer progressively declining levels of richness (Walther & D'Addario, 2001). Because text messaging is one of the least rich mediums listed and is one of the most likely to be misunderstood, it makes sense that CMC users have turned to emoticons and emojis to help disambiguate messages and communicate affect. Social information processing theory (SIP) supports this concept – indicating that although CMC is inherently devoid of the nonverbal communication cues that accompany face-to-face communication, communicators are motivated to develop interpersonal impressions and affinity regardless of the medium and its richness or lack thereof (Lo, 2008; Walther, 2011). The affect communication and message disambiguation enabled by emojis is important for developing interpersonal impressions and affinity.

Social Information Processing Theory

Social information processing theory suggests that in online interpersonal communication without nonverbals cues, communicators' needs for image and relationship development prompt them to adapt their interpersonal communication to whatever cues remain available through the channel they are using (Lo, 2008; Walther, 2011). According to social information processing theory, in computer-mediated environments, interpersonal relationship development requires more time than traditional face-to-face relationships but is ultimately no less meaningful or fully-formed (Lo, 2008; Walther, 2011). Three central assumptions underlie this theory on how identities are managed and relationships are formed online: 1) Computer-mediated communication offers a unique opportunity to develop interpersonal relationships with others; 2) Impression management is essential to interpersonal relationships, so online communicators are motivated to form

favorable impressions of themselves; 3) Online interpersonal relationships require more time to develop than face-to-face relationships but can reach equivalent if not greater levels of intimacy and richness (Lo, 2008; Walther, 2011). This conceptual framework is useful for predicting and explaining how digital communication and elements, such as emojis, might mimic face-to-face communication and why emojis are so widely adopted.

Channel Expansion Theory

The third theoretical framework that helps explain the use and proliferation of emojis in the digital media environment is channel expansion theory. This theory asserts that as users gain experience in communication environments with limited cues, they naturally strive to develop ways to more accurately convey social messages, personality, and attitude (Lo, 2008; Walther, 2011). The ability to encode and decode personal cues is central to social information processing theory's argument that online interpersonal relationships can demonstrate the same relational dimensions and qualities as face-to-face relationships. According to channel expansion theory, experience and familiarity with an interaction partner are important moderators of the expressiveness that results from users learning how to encode and decode affect via a particular medium. Both emoticons and emojis are logical developments for impression management, affect communication, and message disambiguation in environments that otherwise lack the nonverbal cues essential for relationship development and maintenance. In line with these theories, emojis are a way in which people are adapting socially to text-based communication environments with limited nonverbal cues. This demonstrates the value of the theoretical foundations established by computer-mediated and interpersonal communication theories, as well as emoticon and nonverbal

communication research, in offering important frameworks for examining and understanding the effects of emoji usage in today's increasingly digital communication environment.

Emoji Research – Potential for Misinterpretation and the Gender Divide

Uses and Potential for Misinterpretation

Another lens through which to examine and explain the effects of emoji usage is current emoji research. This limited but developing body of research focuses on the communicative and affective role of emojis, potential for misinterpretation, and the gender divide in emoji usage. As previously discussed, emojis have been shown empirically to communicate emotion, disambiguate messages, act as nonverbal (or quasi-nonverbal) cues, reflect personality, and enable users to perform emotion work virtually (Kaye, Malone, & Wall, 2017; Riordan, 2017; Yuasa, Saito, & Mukawa, 2011). However, despite research demonstrating the role of emojis in message disambiguation and other important social functions another body of emoji research is equally focused on the potential for misinterpretation in the use of emojis across emoji fonts and platforms (Miller et al., 2016). Although limited, this body of research suggests that interpretations of emojis can vary widely – largely because of different renderings of the same emoji across platforms caused by variations in font. These different renderings can lead to diverse interpretations of the meaning and emotion associated with emojis – like rearranging words in a sentence could (Miller et al., 2016). In fact, one study quantified this variance, both within and between platforms, in terms of a sentiment misconstrual score to chart which emojis are most and least likely to be misinterpreted. Interestingly, Apple's "sleeping face" emoji tends to have the

lowest disagreement as to sentiment, while Microsoft's rendering of "smiling face with open mouth and tightly closed eyes" tends to have the highest (Miller et al., 2016). In the study, participants were asked to interpret a sample of the most popular emoji characters, each rendered for multiple platforms, in terms of sentiment and semantics. The participants disagreed 25% of the time on whether the sentiment of identical emoji renderings was positive, neutral, or negative, and disagreements increased for renderings across platforms (Miller et al., 2016). Although potential for misinterpretation is a reality in emoji use, as it is in all forms of communication, researchers are working to better understand emoji sentiment distributions at large. One example of this is the emoji sentiment ranking, proposed as a resource for automated sentiment analysis of emojis (Novak, Smailović, Sluban, & Mozetič, 2015). Researchers analyzed over 1.6 million tweets across 13 European languages and identified 969 different emojis. After emojis used fewer than five times were omitted, the narrowed-down sample of 751 emojis was categorized by a team of 81 native-speaking annotators according to the sentiment polarity (negative, neutral, or positive) of the tweets in which they occurred. A series of formulas were then used to calculate the true emotional intentions of the sample's emojis (Novak et al. 2015). The resulting ranking system determines each emoji's sentiment score, i.e. how positive, negative, or neutral it is, as well as its neutrality level, which is a measure of the variability of the sentiment. Additionally, the research demonstrated that most emojis, especially the most commonly used, are positive (Novak et al. 2015). The emoji sentiment ranking was used to select, according to valence, the emojis employed in the present study.

The Gender Divide in Emoji Use and Interpretation

Another prominent area of study in emoji research outside of potential for misinterpretation is the gender divide (Butterworth, Giuliano, White, Cantu, & Fraser, 2019; Tossell et al., 2012; Witmer & Katzman, 1997; Wolf, 2000). One branch of this research examines how a sender's gender can influence the interpretation of emojis in text messages. For example, results of a recent study confirmed that texts with affectionate emojis were judged as more appropriate and likable when they came from women, while texts with less affectionate but still friendly emojis were judged as more likable when they came from men (Butterworth et al., 2019). This body of research indicates that gender and emoji choice influence perceptions and that people should consider how their emoji choice can impact the reception of their message.

Whether focused on gender, interpretation, function, neurological processing, or otherwise, academic interest in the power of emojis is growing. Although the field was essentially non-existent a decade ago, academic papers on emojis have begun to appear more frequently, especially in the research areas discussed (Chin, Zappone, & Zhao, 2016). In fact, as of 2005, only one publication examining emojis was available on Google Scholar – but by 2016, that number had increased to over 400 (Chin et al., 2016). Despite this increase in emoji research, however, existing research does not move beyond examinations of message affect to assess the human-specific implications of emoji use, especially regarding social perception. Against this backdrop, the current study builds upon existing emoticon and nonverbal communication research to systematically examine the effects of emoji usage on the receiver's perceptions of the sender. In doing so, the study not only uncovers insights for how to use emojis wisely in digital communication, but also extends the scope of emoji research to include the people using them.

Chapter 3
Hypotheses and Research Questions

Existing research on emoticons, emojis, and nonverbal communication, as well as theories related to both computer-mediated and interpersonal communication, indicate that the proliferation of emojis stems from an innate human need or inclination to develop and maintain relationships through the performance of specific social roles – even in communication environments that lack richness and do not readily transmit social cues. However, research does not currently examine the effectiveness of emojis in supporting image maintenance and impression management – or specifically how emoji usage affects perceptions of sender. This is surprising given the fundamentality of interpersonal relationships to everyday life and the importance of perception in the development and maintenance of these relationships. Thus, the present study explores the effects of emoji usage, varied by emoji valence, emoji alignment, and emoji type, on three critical dimensions of social perception: likability, intelligence, and emotional connection. The effects are examined consistently across four different sender types (female acquaintance, male acquaintance, female friend, male friend) to explore if and how the sender's gender and specified relationship to the receiver moderate these perceptual outcomes.

Emoji Valence

Negative Versus Positive Emojis

The current study examines whether the valence of an emoji used in a text message affects the receiver's perception of the sender. In emoticon research, when messages are neutral or ambiguous a positive emoticon makes the message's perceived affect more positive and a negative emoticon makes the message more negative compared to the message without an emoticon (Lo, 2008; Luor et al., 2010). However, for messages that are unambiguous, the addition of emoticons to messages does not reliably affect the rating of the message's affect (Riordan & Kreuz, 2010; Walther & D'Addario, 2001).

Because emojis are visually evolved emoticons, similar in function and neurological recognition, it makes sense that emojis would mirror affect communication in neutral messages. But measuring message affect doesn't directly examine the effects of emojis on the receiver's perceptions of the sender. It only examines the receiver's perceptions of the message. The present study extends research beyond examinations of how emoticons and emojis influence message affect – and looks instead at how emojis affect the receiver's perception of the sender. This new research angle is important in understanding whether emojis are effective tools for digital impression management and the development and maintenance of relationships online. With that being said, this extension of the literature from affect perception to social perception is grounded on known relationships between the two in the context of face-to-face communication – and that positive affect communication in face-to-face interactions predicts and moderates social perception and the development of interpersonal relationships (Choi, Lim, Catapano, & Choi, 2018). Because social information processing

theory maintains that online interpersonal relationships mimic face-to-face interpersonal relationships, it is logical to predict that positive changes in the perceived affect of the message will be mirrored by similar positive changes in the receiver's perception of the sender. As positive emoticons and emojis have been shown to enhance positive affect in neutral or ambiguous messages, while negative emoticons and emojis have been shown to decrease the positive affect perceived in neutral or ambiguous messages, hypotheses related to the receiver's perceptions of the sender when emojis are used in neutral messages are proposed as follows:

H_1: The valence of an emoji in a neutral text will affect the receiver's perceptions of the sender.

H_{1a}: The valence of an emoji in a neutral text will affect the perceived likability of the sender.

H_{1b}: The valence of an emoji in a neutral message will affect the perceived intelligence of the sender.

H_{1c}: The valence of an emoji in a neutral message will affect the receiver's emotional connection to the sender.

Emoji Alignment

Consonant Versus Dissonant Emojis

Emojis, as forms of quasi-nonverbal communication, can emphasize, repeat, substitute, or contradict verbal messages (Schmidt et al., 2007; Walther & D'Addario, 2001). Drawing on known relationships between nonverbal and verbal cues, when affect is consistent among both cues, their effects tend to be

combinatory. However, when cues are dissonant, greater weight tends to be placed on nonverbal cues, with facial expressions carrying up to double the interpretive weight as other cues (Walther & D'Addario, 2001). Therefore, the following set of hypotheses and research questions covering consonant and dissonant messages are proposed:

Emoji Alignment with Positive Texts

H_2: When the text is positive, consonant usage of emojis will have a more positive outcome compared to dissonant usage of emojis.

H_{2a}: When the text is positive, consonant usage of emojis will increase the perceived likability of the sender compared to dissonant usage of emojis.

H_{2b}: When the text is positive, consonant usage of emojis will increase the perceived intelligence of the sender compared to dissonant usage of emojis.

H_{2c}: When the text is positive, consonant usage of emojis will increase the receiver's emotional connection to the sender compared to dissonant usage of emojis.

Emoji Alignment with Negative Texts

H_3: When the text is negative, consonant usage of emojis will have a more negative outcome compared to dissonant usage of emojis.

H_{3a}: When the text is negative, consonant usage of emojis will decrease the perceived likability of the sender compared to dissonant usage of emojis.

H_{3b}: When the text is negative, consonant usage of emojis will decrease the perceived intelligence of the sender compared to dissonant usage of emojis.

H_{3c}: When the text is negative, consonant usage of emojis will decrease the receiver's emotional connection to the sender compared to dissonant usage of emojis.

Dissonance Strength

Comparing Dissonant Message Types

Although nonverbal communication research informs which cues dominate when verbal and nonverbal messages are contradictory, there is a lack of information on whether a difference exists between dissonant message types (i.e. a positive verbal message contradicted by a negative nonverbal cue compared to a negative verbal message contradicted by a positive nonverbal cue) to inform which cue dominates social perception when cues are contradictory. The present study examines this difference by proposing the following research question:

RQ_1: Is there a statistically significant difference between dissonant message types (i.e. a negative message with a positive emoji compared to a positive message with a negative emoji) in terms of the perceived likability of the sender, the perceived intelligence of the sender, and/or the receiver's emotional connection to the sender?

Emoji Type

Facial Versus Non-Facial Emojis

Facial expressions, such as smiling, appearing bored, frowning, making eye contact, and scowling, play a major role in social interactions. In fact, several studies demonstrate that less than 100 milliseconds of exposure to a face is enough

for perceivers to make trait judgments (Hall et al., 2019). The human face conveys information about emotional states, identity, gender, interpersonal intentions, and a range of other important attributes (Yan, Young, & Andrews, 2017). These nonverbal cues are innately and automatically relied upon for making relational decisions (Hess, Blairy, & Kleck, 2000). In nonverbal communication, facial expressions are understood to have even greater effects than vocal nonverbal cues – and are especially important in decoding emotions related to positivity (Walther & D'Addario, 2001). The present study questions whether there are differences in the receiver's perception of sender when non-facial emojis are used rather than facial emojis. This layer of the study examining how emoji type affects social perception is especially novel considering that the emoticon research which informs most of our current understanding of emojis is – by the nature of emoticons themselves – a study only of symbolic representations of faces and facial expressions, rather than the non-facial icons emojis have evolved to include. Therefore, the following research question is proposed:

> RQ2: Is there a difference between emoji types (facial versus non-facial) in terms of the emojis' effects on the perceived likability of the sender, the perceived intelligence of the sender, and the receiver's emotional connection to the sender?

Sender Type

Exploring Boundary Conditions Related to the Sender's Gender and Relationship to the Receiver

As discussed, emoticon and emoji research indicates that a sender's gender can influence the interpretation of emojis in text messages (Butterworth et al., 2019;

Tossell et al., 2012; Witmer & Katzman, 1997; Wolf, 2000). But how does the effect of gender extend beyond the receiver's interpretation of emojis to the receiver's interpretations of the sender? And how does the sender's relationship to the receiver also affect, if at all, the receiver's perceptions of him or her? Channel expansion theory examines the importance of familiarity with an interaction partner in moderating patterns of expressiveness among people in computer-mediated communication environments. Is this mirrored by patterns of social perception across sender types when examining how emoji usage affects the receiver's perceptions of the sender? The study considers potential sender types according to the sender's gender and relationship to the receiver (female acquaintance, male acquaintance, female friend, and male friend) and examines these potential boundary conditions across all hypotheses and research questions by proposing the following research question:

> RQ3: Is there a difference between sender types (female acquaintance, male acquaintance, female friend, and male friend) in terms of the senders' effects on how likable the receiver perceives the specified sender to be, how intelligent the receiver perceives the specified sender to be, and how emotionally connected the receiver feels to the specified sender?

Chapter 4
Methods

The objective of the present study is to assess the effects of emoji usage on perceptions of sender – extending current research beyond emoticons, exchanges occurring in the workplace, and message perception. Does emoji use affect the sender's perceived likability and intelligence or the receiver's emotional connection to the sender? Are there differences when emoji valence, emoji alignment, emoji type and sender type are manipulated? The experimental method is most appropriate for explaining the relationship among the variables of interest. To best achieve this study's objectives, a self-administered, mixed experiment that adopts both between-group and within-group design is employed.

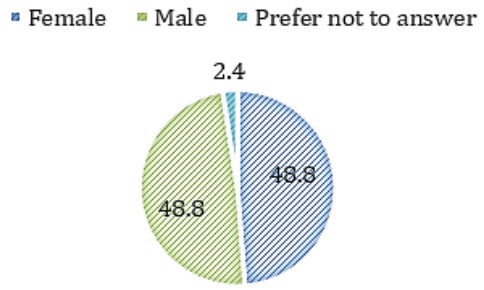
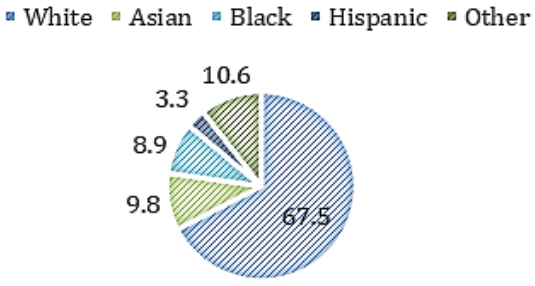
Study Participants

The study's participants were mainly recruited from a private technical university in the eastern United States. Participants were recruited according to a quota: 50% female and 50% male – as existing research demonstrates how emoji use and interpretation can vary by gender (Oleszkiewicz et al., 2017; Takahashi, Oishi, & Shimada, 2017). Additionally, participants were generally limited to college students between the ages of 19 and 34 and were removed from the sample if their responses were incomplete. The cohort was chosen due to its texting tendencies, as well as to avoid issues that might arise due to excessive sample heterogeneity. In fact, adults in the U.S. between the ages of 18 and 24 send and receive an average of 109.5 texts per day, which is more than 3,200 per month (Pew Research Center, 2011). As previously examined, this represents a now

dominant number of interactions occurring through text-based messaging platforms in comparison to other forms of communication.

In total, there were 123 participants – once 18 participants were removed from the sample because of incomplete responses. As represented in *Table I*, the participants' mean age was 21.98 years (*SD* = 3.40). Regarding gender, 48.8% of the sample was male, 48.8% was female, and 2.4% reported their gender as "prefer not to answer." Of the total participants included in the sample, 67.5% identified themselves as White, 9.8% as Asian, 8.9% as Black, 3.3% as Hispanic, and 10.6% as Other.

Table I: Demographic Characteristics of Study Participants

Demographic	Participant Characteristics
Mean Age	21.98 years (*SD* = 3.40)
Gender	
Ethnicity	

Study Procedure

The online instrument was designed using SurveyMonkey and included both open-ended and closed-ended questions. Only one response was allowed per respondent. Participants were not allowed to go back to change their answers once they left a page, and they had to respond to each question to progress to the next page. Participants entered their responses via computer or smartphone. Responses were collected using SurveyMonkey software.

This study had four groups (facial versus non-facial emoji type x two presentation orders). Each emoji type condition was subdivided by presentation order: positive emoji first versus negative emoji first. Participants were randomly assigned to one of four experimental groups. Participants in *Facial Emoji Group A* (F_A) received stimulus materials with facial emojis, i.e. emojis representing human faces, and the following presentation order: no emoji, positive emoji, negative emoji. Participants in *Facial Emoji Group B* (F_B) received stimulus materials with facial emojis and the opposite presentation order: no emoji, negative emoji, positive emoji. Participants in *Non-Facial Emoji Group A* (NF_A) received stimulus materials with non-facial emojis and the same presentation order as F_A. Participants in *Non-Facial Emoji Group B* (NF_B) received stimulus materials with non-facial emojis and the same presentation order as F_B. Comparisons between responses from participants in F_A and F_B collectively and responses from participants in NF_A and NF_B collectively tested for emoji type (facial versus non-facial) effects. Comparisons between responses from participants in F_A and NF_A collectively and responses from participants in F_B and NF_B collectively tested for presentation order effects.

Each group was exposed to identical stimulus materials, with the exception of the type of emoji used (facial versus non-facial) throughout the stimulus material

and the presentation order. Manipulations within the stimulus materials included emoji valence (negative versus positive), emoji alignment (consonant versus dissonant), emoji type (facial versus non-facial), and sender type (female acquaintance, male acquaintance, female friend, male friend). A separate control group was not necessary, as the online instrument included text-only questions as a control. Baselines for comparison were within group – i.e. each individual participant's responses to the questions that include text-only stimulus images.

A 7-point Likert scale was used to measure participants' responses to each stimulating treatment regarding the perceived likability of the sender, perceived intelligence of the sender, and emotional connection to the sender. Participants were sent one of four links (V1, V2, V3, or V4), which took them to the instrument titled "Survey on texting trends" that resembled an online survey. The instrument consisted of 53 close-ended and open-ended questions. The first page of the online instrument explained that by continuing, the respondent consented to participating in the online survey and that there were no right or wrong answers. Participants were instructed to select the answer that best reflected how they felt.

For the first 36 questions, participants were presented with the stimulus – a statement instructing them to imagine they received the following text from a specified person (either an acquaintance or a friend) who was a specified gender (either male or female), along with an image of a text message that consisted of either neutral, negative, or positive content ("Hi," "I hate you," and "I love you") and contained either no emoji, a negative emoji, or a positive emoji. The stimulus statement for each question that preceded the stimulus image fell into one of four scenarios: Scenario 1 – Imagine you receive this text from an acquaintance who is female; Scenario 2 – Imagine you receive this text from an acquaintance who is male; Scenario 3 – Imagine you receive this text from a friend who is female; Scenario 4 – Imagine you receive this text from a friend who is male. *Table II*

outlines the 15 different stimulus images that were used throughout the study and how each was classified.

Table II. Stimulus Images

Message Type	***Emoji Type and Valence***			
	No Emoji (Control Group)	Negative Emoji (Facial versus non-facial)		Positive Emoji (Facial versus non-facial)	
Neutral Message	Hi	Hi 😠	Hi 🔥	Hi 😍	Hi 💕
Negative Message	I hate you.	I hate you. 😠 Ⓒ	I hate you. 🔥 Ⓒ	I hate you. 😍 Ⓓ	I hate you. 💕 Ⓓ
Positive Message	I love you.	I love you. 😠 Ⓓ	I love you. 🔥 Ⓓ	I love you. 😍 Ⓒ	I love you. 💕 Ⓒ

This table outlines the 15 different stimulus images used throughout the present study.
Note: Ⓒ = Consonant message; Ⓓ = Dissonant message

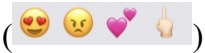
After being presented with the stimulus statement and image, participants then selected the answer, measured on a 7-point Likert scale (strongly disagree, disagree, somewhat disagree, neutral, somewhat agree, agree, strongly agree), that best reflected how they felt about each of the following three statements: a) The sender of the text message is likable; b) The sender of the text message is intelligent; c) I feel an emotional connection with the sender of the text message. For each question, the participant's response to the first statement measured the perceived likability of the sender. The participant's response to the second statement measured the perceived intelligence of the sender. The participant's response to the third statement measured the participant's emotional connection with the sender of the text message. After securing IRB approval, the study was conducted.

Chapter 5

Measurements

The key independent variables of the study were emoji valence, emoji alignment, emoji type, and sender type – which included the sender's relationship to the receiver (acquaintance or friend) and the sender's gender (female or male).

Emoji

For the study, an emoji was defined as one of four small digital icons selected from the Emoji standard international keyboard in iOS 5 and rendered in Apple font (). The emojis employed in the study were selected for their popularity in a global analysis of emoji usage and for their valence according to the emoji sentiment ranking previously discussed (Ljubešić & Fiser, 2016; Novak et al., 2015). Additionally, the iOS keyboard was used to select emojis for the study as a matter of scope – because iPhone users in the U.S. now number over 105 million, roughly one third of the current population of the U.S. This number is projected to grow to 110.3 million by 2021 ("iPhone users in the US 2012-2021," n.d.).

Emoji Valence

In the study, emoji valence referred to whether an emoji was negative or positive. A negative emoji was defined as one of the two selected emojis expressing negative sentiment (i.e. an emoji with a negative sentiment score): 

😠. A positive emoji was defined as one of the two selected emojis expressing positive sentiment (i.e. an emoji with a positive sentiment score): 💕😍.

Emoji Alignment

Emoji alignment was defined as the consistency between emoji valence and message valence. If the emoji valence corresponded with the message valence (i.e. a positive emoji accompanying a positive message or a negative emoji accompanying a negative message), the emoji was considered consonant. Conversely, if the emoji valence did not correspond with the message valence (i.e. a positive emoji accompanying a negative message or a negative emoji accompanying a positive message), the emoji was considered dissonant.

Overall, the study included three message types – neutral, positive, and negative**.** A neutral message was defined as a text message containing the content: "Hi." A negative message was defined as a text message containing the content: "I hate you." A positive message was defined as a text message containing the content: "I love you." Message manipulations were checked by running a series of tests in SPSS V25.0. The test result showed no sign of interaction between the message type and the emoji type ($p > .05$). The main effect of the message type was significant on likability [Wilks' Lambda = .222, $F(2, 118) = 206.579$, $p = .000$, $\eta_p^2 = .778$], perceived intelligence [Wilks' Lambda = .690, $F(2, 118) = 26.479$, $p = .000$, $\eta_p^2 = .310$], and emotional connection [Wilks' Lambda = .738, $F(2, 118) = 20.936$, $p = .000$, $\eta_p^2 = .262$]. The pairwise comparisons for the main effect of message type using a Bonferroni adjustment on likability indicated significant difference between the neutral control ($N = 123$, $M = .45$, $SD = .851$) and the negative message with no emoji ($N = 123$, $M = -1.88$, $SD = 1.142$) ($p = .000$), as well as between the negative message with no emoji and the positive message with

no emoji (N = 123, M = .52, SD = 1.363) (p = .000) when the sender was a female acquaintance. The same was true for all other sender types. When the sender was a male acquaintance, the pairwise comparisons for the main effect of message type using a Bonferroni adjustment on likability indicated significant difference between the neutral control (N = 123, M = .26, SD = 1.062) and the negative message with no emoji (N = 123, M = -1.38, SD = 1.376) (p = .000), as well as between the negative message with no emoji and the positive message with no emoji (N = 123, M = -.04, SD = 1.581) (p = .000). When the sender was a female friend, the pairwise comparisons for the main effect of message type using a Bonferroni adjustment on likability indicated significant difference between the neutral control (N = 123, M = 1.18, SD = 1.087) and the negative message with no emoji (N = 123, M = -.38, SD = 1.463) (p = .000), as well as between the negative message with no emoji and the positive message with no emoji (N = 123, M = 1.33, SD = 1.281) (p = .000). When the sender was a male friend, the pairwise comparisons for the main effect of message type using a Bonferroni adjustment on likability indicated significant difference between the neutral control (N = 123, M = .60, SD = 1.317) and the negative message with no emoji (N = 123, M = -.41, SD = 1.419) (p = .000), as well as between the negative message with no emoji and the positive message with no emoji (N = 123, M = .63, SD = 1.410) (p = .000).

Emoji Type

For the study, emoji type referred to whether the emoji was facial or non-facial. A facial emoji was defined as one of the two selected emojis resembling a human face: 😍😠. A non-facial emoji was defined as one of the two selected emojis not resembling a human face: 💕🖕.

Sender Type

In the stimulus statement proceeding each stimulus image, the sender of the text was specified as either an acquaintance or a friend and as either male or female. An acquaintance was defined in the relationship manipulation as "a person who you have met before but do not know well." A friend was defined in the relationship manipulation as "a person who you like and enjoy being with." In each stimulus statement, the sender was specified as a male or female, but no further gender manipulation was described.

Dependent Variables

The key dependent variables of the study were perceived likability of the sender, perceived intelligence of the sender, and emotional connection to the sender. As previously discussed, these dimensions were chosen as dependent variables for this study investigating the effects of emoji usage on perceptions of sender because of their powerful role in social perception and their primacy in affective and behavioral reactions (Canary & Yum, 2015; Fiske et al., 2007; Schoebi & Randall, 2015). These variables were measured on a 7-point Likert scale with the following values: Strongly Disagree (-3); Disagree (-2); Somewhat Disagree (-1); Neutral (0); Somewhat Agree (+1); Agree (+2); Strongly Agree (+3). The numerical values were not indicated in the online instrument but were used for data analysis. The 7-point Likert scale included in the online instrument for Question 1 through Question 36 appears in Figure 1.

Likability

For the purpose of this study, likability, how easy to like a person is, was defined as a +1, +2, or +3 value on the 7-point Likert scale. A definition of

likability was not included in the stimulus material as a manipulation because likability was purely a dependent variable in the study – and the same was true for the other two dependent variables. Perceived likability of the sender was measured by participants' responses to Statement A for Question 1 through Question 36. Participants were asked to select the answer on the 7-point Likert scale that best reflected how they felt about the following statement: "The sender of the text message is likable."

Intelligence

Intelligence, a person's intellectual capacity, was defined as a +1, +2, or +3 value on the 7-point Likert scale. Again, a definition of intelligence was not included in the stimulus material as a manipulation. Perceived intelligence of the sender was measured by participants' responses to Statement B for Question 1 through Question 36. Participants were asked to select the answer on the 7-point Likert scale that best reflected how they felt about the following statement: "The sender of the text message is intelligent."

Emotional Connection

Emotional connection, the closeness or emotional bond a person feels for another person, was defined as a +1, +2, or +3 value on the 7-point Likert scale. As for likability and intelligence, a definition of emotional connection was not included in the stimulus material. Emotional connection to the sender was measured by participants' responses to Statement C for Question 1 through Question 36. Participants were asked to select the answer on the 7-point Likert scale that best reflected how they felt about the following statement: "I feel an emotional connection with the sender of the text message."

Chapter 6
Results

To examine the effects of emoji usage on perceptions of sender by testing the proposed hypotheses and research questions, a series of repeated measure analyses were computed using IBM SPSS Statistics V25.0. In order to explore potential boundary conditions, types of sender were considered – and all hypotheses and research questions were tested for each sender type (female acquaintance, male acquaintance, female friend, male friend). Similarly, RQ_2 and RQ_3 were examined throughout the study with each main hypothesis test. The following section presents the results of these analyses.

Emoji Valence – H_1

First, to examine the effects of the valence of an emoji in a neutral message on the receiver's perceptions of the sender, a series of repeated measure analyses were computed that compared the following three conditions for each of the four sender types: neutral text without an emoji, neutral text with a positive emoji, neutral text with a negative emoji.

Effects on Likability – H_{1a}

As hypothesized, the valence of an emoji in a neutral text affects the perceived likability of the sender – although the sender's gender appears to be an important moderator of the observed effects. Below are the statistically significant results supporting these findings followed by a review of key patterns:

Female Acquaintance

When the sender was a female acquaintance, the test result showed no sign of interaction between emoji valence and emoji type ($p > .05$). The main effect of emoji valence was significant on likability [Wilks' Lambda = .311, $F(2, 118) = 130.678$, $p = .000$, $\eta_p^2 = .689$]. The effect size for this main effect on the outcome variable was very large (.689), considering a general rule of thumb for effect size in social sciences when referring to partial eta squared is 0.14 and above for large effect size, 0.06 for medium effect size, and 0.01 for small size (Draper, 2019). The pairwise comparisons for the main effect of emoji valence using a Bonferroni adjustment on likability indicated significant difference between the neutral control ($N = 123$, $M = .45$, $SD = .851$) and the neutral message with a positive emoji ($N = 123$, $M = .92$, $SD = 1.164$) ($p = .000$), between the neutral control and the neutral message with a negative emoji ($N = 123$, $M = -1.29$, $SD = 1.304$) ($p = .000$), and between the neutral message with a positive emoji and the neutral message with a negative emoji ($p = .000$). This shows that for a sender who is a female acquaintance, using a positive emoji in a neutral message increases her perceived likability compared to using no emoji or using a negative emoji. The pairwise comparisons between the emoji-type groups did not detect any significant differences ($p > .05$).

Male Acquaintance

When the sender was a male acquaintance, the test result showed no sign of interaction between emoji valence and emoji type ($p > .05$). The main effect of emoji valence was significant on likability [Wilks' Lambda

= .541, $F(2, 118) = 50.034$, $p = .000$, $\eta_p^2 = .459$]. The pairwise comparisons for the main effect of emoji valence using a Bonferroni adjustment on likability indicated significant difference between the neutral control (N = 123, M = .26, SD = 1.062) and the neutral message with a positive emoji (N = 123, M = -.13, SD = 1.568) (p = .019), the neutral control and the neutral message with a negative emoji (N = 123, M = -1.19, SD = 1.295) (p = .000), and between the neutral message with a positive emoji and the neutral message with a negative emoji (p = .000). This shows that for a sender who is a male acquaintance, using a positive emoji in a neutral message interestingly decreases his perceived likability compared to using no emoji. Using a negative emoji in the neutral message also decreases his perceived likability compared to using no emoji. The pairwise comparisons between the emoji-type groups did not detect any significant differences ($p > .05$).

Female Friend

When the sender was a female friend, the tests of emoji valence and emoji type indicated a significant interaction effect between them [Wilks' Lambda = .895, $F(6, 236.000) = 2.248$, $p = .040$, $\eta_p^2 = .054$]. In this situation, interpreting the main effect may not be valid. Therefore, a series of repeated measure analyses were conducted after splitting the data by the emoji-type group. The test result showed that emoji valence had significant effects in all groups [$F(2, 21.753) = 21.575$, $p = .000$ for *Facial Emoji Group A* (F_A); $F(2, 27.811) = 21.687$, $p = .000$ for *Facial Emoji Group* B (F_B); $F(2, 14.156) = 13.096$, $p = .000$ for *Non-Facial Emoji Group A* (NF_A); and $F(2, 11.433) = 7.330$, $p = .001$ for *Non-Facial Emoji Group B* (NF_B)].

The pairwise comparisons of emoji valence after the Bonferroni adjustment in each separate group indicated that there were significant differences between the neutral control and the neutral message with a positive emoji (M_{diff} =*-.548* *SD* = .201, *p* = .032), the neutral control and the neutral message with a negative emoji (M_{diff} =*1.097* *SD* = .260, *p* = .001), and between the neutral message with a positive emoji and the neutral message with a negative emoji (*p* = .000) for F_A. The neutral message with a positive emoji has the highest score on likability, followed by the neutral message with no emoji and the neutral message with a negative emoji when the sender is a female friend using facial emojis.

The pairwise comparisons indicated that there were significant differences between the neutral control and the neutral message with a negative emoji (M_{diff} = *1.633* *SD* = .227, *p* = .000), as well as between the neutral message with a positive emoji and the neutral message with a negative emoji (M_{diff} =*1.700* *SD* = .350, *p* = .000) for F_B. The neutral message with a positive emoji had the highest score on likability, followed by the neutral message with no emoji and the neutral message with a negative emoji when the sender is a female friend using facial emojis.

The pairwise comparisons indicated that there were significant differences between the neutral control and the neutral message with a positive emoji (M_{diff} = *-.844* *SD* = .211, *p* = .001), as well as between the neutral message with a positive emoji and the neutral message with a negative emoji (M_{diff} =*1.313* *SD* = .303, *p* = .000) for NF_A. The neutral message with a positive emoji had the highest score on likability, followed by the neutral message with no emoji and the neutral message with a negative emoji when the sender is a female friend using non facial emojis.

There were significant differences between the neutral message with a positive emoji and the neutral message with a negative emoji (M_{diff} $=1.233$ $SD = .321$, $p = .002$) for NF_B. The neutral message with a positive emoji had the highest score on likability, followed by the neutral message with no emoji and the neutral message with a negative emoji when the sender is a female friend using non facial emojis. Each group followed similar patterns, indicating that using a positive emoji in a neutral message always led to greater perceived likability for the female friend compare to using a negative emoji and often led to greater perceived likability compared to using no emoji.

Male Friend

When the sender was a male friend, the test result showed no sign of interaction between emoji valence and emoji type ($p > .05$). The main effect of emoji valence was significant on likability [Wilks' Lambda = .792, $F(2, 118) = 15.469$, $p = .000$, $\eta_p^2 = .208$]. The pairwise comparisons for the main effect of emoji valence using a Bonferroni adjustment on likability indicated significant difference between the neutral control ($N = 123$, $M = .60$, $SD = 1.317$) and the neutral message with a negative emoji ($N = 123$, $M = .00$, $SD = 1.414$) ($p = .000$). This shows that when the sender of a neutral message is a male friend, the receiver perceives him as most likable when he uses no emoji rather than a positive or negative emoji – similar to when the sender is a male acquaintance.

The comparison between the emoji-type groups displayed significant differences [$F(3, 119) = 3.486$, p = .018, $\eta_p^2 = .081$]. The pairwise comparisons for the group effect of the emoji type using a

Bonferroni adjustment on likability indicated significant difference between F_A ($N = 31$, $M = -.075$, $SD = .190$) and NF_A ($N = 32$, $M = .677$, $SD = .187$) ($p = .033$). But the pairwise difference was not significant between F_A and F_B, F_A and NF_B, NF_A and F_B, NF_A and NF_B, or F_B and NF_B ($p > .05$).

Overall Patterns Regarding the Effect of Emoji Valence on Likability

Overall, the findings support H_{1a} and indicate that the valence of an emoji in a neutral text does affect the perceived likability of the sender. Specifically, receivers perceive female acquaintances and female friends as more likable when they use a positive emoji in a neutral message compared to no emoji. The opposite is true for male acquaintances and male friends, who are perceived as most likable by the receiver when they use no emoji in a neutral message. For all sender types, however, when the message is neutral, the use of a positive emoji always results in the sender being perceived as more likable than if he or she uses a negative emoji.

Effects on Intelligence – H1b

As hypothesized, the valence of an emoji in a neutral message affects the perceived intelligence of the sender. Below are the statistically significant results supporting these findings followed by a review of key patterns:

Female Acquaintance

When the sender was a female acquaintance, the tests of emoji valence and emoji type indicated a significant interaction effect between them [Wilks' Lambda = .900, $F(6, 236.000) = 2.135$, $p = .050$, $\eta_p^2 = .051$]. In this situation, interpreting the main effect may not be valid. Therefore, a

series of repeated measure analyses were conducted after splitting the data by the emoji-type group.

The test result showed that emoji valence had significant effects in all groups [$F(2, 1.839) = 3.344$, $p = .042$ for F_A; $F(2, 11.744) = 16.815$, $p = .000$ for F_B; $F(2, 5.198) = 8.725$, $p = .000$ for NF_A; and $F(2, 8.133) = 10.315$, $p = .000$ for NF_B]. The pairwise comparisons of emoji valence after the Bonferroni adjustment in each separate group indicated that there were no significant differences between conditions for F_A ($p > .05$).

The pairwise comparisons also indicated that there were significant differences between the neutral control and the neutral message with a negative emoji ($M_{diff} = 1.067$ $SD = .235$, $p = .000$), as well as between the neutral message with a positive emoji and the neutral message with a negative emoji ($M_{diff} = 1.100$ $SD = .222$, $p = .000$) for F_B. The neutral message with a positive emoji has the highest score on perceived intelligence, followed by the neutral message with no emoji and the neutral message with a negative emoji when the sender is a female acquaintance using facial emojis.

The pairwise comparisons indicated that there were significant differences between the neutral control with no emoji and the neutral message with a negative emoji ($M_{diff} = .563$ $SD = .200$, $p = .000$), as well as between the neutral message with a positive emoji and the neutral message with a negative emoji ($M_{diff} = -.781$ $SD = .228$, $p = .005$) for NF_A. Therefore, the neutral message with no emoji has the highest score on perceived intelligence, followed by the neutral message with a positive emoji and the neutral message with a negative emoji when the sender is a female acquaintance using non facial emojis.

There were significant differences between the neutral control and the neutral message with a negative emoji ($M_{diff} = .933$ $SD = .271$, $p = .005$), as well as between the neutral message with a positive emoji and the neutral message with a negative emoji ($M_{diff} = .867$ $SD = .224$, $p = .002$) for NF_B. The neutral message with no emoji has the highest score on perceived intelligence, followed by the neutral message with a positive emoji and the neutral message with a negative emoji when the sender is a female acquaintance using non facial emojis. Overall, with the exception of F_a, the groups followed the same pattern – indicating that when the sender of a neutral message is a female acquaintance, using a negative emoji decreases how intelligent the receiver perceives her to be compared to using no emoji or a positive emoji. In this condition, a positive emoji has the same effect on perceived intelligence as no emoji.

Male Acquaintance

When the sender was a male acquaintance, the test result showed no sign of interaction between emoji valence and emoji type ($p > .05$). The main effect of emoji valence was significant on intelligence [Wilks' Lambda = .675, $F(2, 118) = 28.419$, $p = .000$, $\eta_p^2 = .325$]. The pairwise comparisons for the main effect of emoji valence using a Bonferroni adjustment on perceived intelligence indicated significant difference between the neutral control ($N = 123$, $M = -.02$, $SD = .707$) and the neutral message with a positive emoji ($N = 123$, $M = -.37$, $SD = 1.111$) ($p = .002$), the neutral control and the neutral message with a negative emoji ($N = 123$, $M = -.82$, $SD = 1.087$) ($p = .000$), and between the neutral message with a positive emoji and the neutral message with a negative emoji ($p = .000$). This shows that for a sender who is a male acquaintance, using a negative or

positive emoji in a neutral message actually decreases his perceived intelligence compared to using no emoji – although using a positive emoji is better for perceptions of intelligence than using a negative emoji. The pairwise comparisons between the emoji-type groups did not detect any significant differences ($p > .05$).

Female Friend

When the sender was a female friend, the test result showed no sign of interaction between emoji valence and emoji type ($p > .05$). Because Box's M test indicated that observed covariance matrices weren't equal across groups ($p < .001$), Pillai's Trace was used to interpret the main effect in this instance and all proceeding instances of the same nature. The main effect of emoji valence was significant on perceived intelligence [Pillai's Trace = .256, $F(2, 118) = 20.255$, $p = .000$, $\eta_p^2 = .256$]. The pairwise comparisons for the main effect of emoji valence using a Bonferroni adjustment on perceived intelligence indicated significant difference between the neutral control ($N = 123$, $M = .67$, $SD = .954$) and the neutral message with a negative emoji ($N = 123$, $M = .15$, $SD = .893$) ($p = .000$). This shows that for a sender who is a female friend, using a negative emoji in a neutral message decreases her perceived intelligence compared to using no emoji. The pairwise comparisons between the emoji-type groups did not detect any significant differences ($p > .05$).

Male Friend

When the sender was a male friend, the test result showed no sign of interaction between emoji valence and emoji type ($p > .05$). The main effect of emoji valence was significant on perceived intelligence [Pillai's Trace

= .088, $F(2, 118) = 5.691$, $p = .004$, $\eta_p^2 = .088$]. The pairwise comparisons for the main effect of emoji valence using a Bonferroni adjustment on perceived intelligence indicated significant difference between the neutral control ($N = 123$, $M = .33$, $SD = 1.036$) and the neutral message with a negative emoji ($N = 123$, $M = .01$, $SD = 1.120$) ($p = .000$). Again, this shows that for a sender who is a male friend, using a negative emoji in a neutral message decreases his perceived intelligence compared to using no emoji.

The comparison between the emoji-type groups displayed significant differences [$F(3, 119) = 3.141$, p = .028, $\eta_p^2 = .073$]. But, the pairwise comparisons for the group effect of the emoji type using a Bonferroni adjustment on perceived intelligence did not indicate significant difference between any of the groups ($p > .05$).

Overall Patterns Regarding the Effects of Emoji Valence on Intelligence

Overall, the findings support H_{1b} and indicate that the valence of an emoji in a neutral text does affect the perceived intelligence of the sender. Specifically, receivers perceive all sender types as less intelligent when they use a negative emoji in a neutral message compared to no emoji. When the receiver of a neutral message is judging the sender's intelligence, the use of no emoji is best for all sender types compared to the use of a positive or negative emoji, but especially if the sender is a male acquaintance.

Effects on Emotional Connection – H_{1c}

As hypothesized, the valence of an emoji in a neutral message affects the receiver's emotional connection to the sender – the only exception is when the

sender is a male acquaintance. Below are the statistically significant results supporting these findings followed by a review of key patterns:

Female Acquaintance

When the sender was a female acquaintance, the test result showed no sign of interaction between emoji valence and emoji type ($p > .05$). The main effect of emoji valence was significant on emotional connection [Wilks' Lambda = .596, $F(2, 118) = 39.915$, $p = .000$, $\eta_p^2 = .404$]. The pairwise comparisons for the main effect of emoji valence using a Bonferroni adjustment on emotional connection indicated significant difference between the neutral control ($N = 123$, $M = -.89$, $SD = 1.282$) and the neutral message with a positive emoji ($N = 123$, $M = .37$, $SD = 1.516$) ($p = .000$), as well as between the neutral message with a positive emoji and the neutral message with a negative emoji ($N = 123$, $M = -.85$, $SD = 1.668$) ($p = .000$). This shows that for a sender who is a female acquaintance, using a positive emoji in a neutral message increases how emotionally connected the receiver feels to her compared to using either no emoji or a negative emoji. Interestingly, when the sender of a neutral message is a female acquaintance, there is no statistically significant difference between the effects of her using a negative emoji or no emoji on how emotionally connected the receiver feels to her. The pairwise comparisons between the emoji-type groups did not detect any significant differences ($p > .05$).

Male Acquaintance

When the sender was a male acquaintance, the test result showed no sign of interaction between emoji valence and emoji type ($p > .05$). The

main effect of emoji valence was not significant on emotional connection ($p > .05$).

Female Friend

When the sender was a female friend, the test result showed no sign of interaction between emoji valence and emoji type ($p > .05$). The main effect of the emoji valence was significant on emotional connection [Wilks' Lambda = .654, $F(2, 118) = 31.252$, $p = .000$, $\eta_p^2 = .346$]. The pairwise comparisons for the main effect of emoji valence using a Bonferroni adjustment on emotional connection indicated significant difference between the neutral control ($N = 123$, $M = .88$, $SD = 1.191$) and the neutral message with a positive emoji ($N = 123$, $M = 1.57$, $SD = 1.208$) ($p = .000$), the neutral control and the neutral message with a negative emoji ($N = 123$, $M = .38$, $SD = 1.290$) ($p = .001$), and between the neutral message with a positive emoji and the neutral message with a negative emoji ($p = .000$). This shows that for a sender who is a female friend, using a positive emoji in a neutral message increases how emotionally connected the receiver feels to her compared to using either no emoji or a negative emoji – although using a negative emoji is worse than using no emoji. The pairwise comparisons between the emoji-type groups did not detect any significant differences ($p > .05$).

Male Friend

When the sender was a male friend, the test result showed no sign of interaction between emoji valence and emoji type ($p > .05$). The main effect of the emoji valence was significant on emotional connection [Wilks'

Lambda = .805, $F(2, 118) = 14.291$, $p = .000$, $\eta_p^2 = .195$]. The pairwise comparisons for the main effect of emoji valence using a Bonferroni adjustment on emotional connection indicated significant difference between the neutral control ($N = 123$, $M = .33$, $SD = 1.163$) and the neutral message with a positive emoji ($N = 123$, $M = .67$, $SD = 1.340$) ($p = .010$), and between the neutral message with a positive emoji and the neutral message with a negative emoji ($N = 123$, $M = .03$, $SD = 1.379$) ($p = .000$). This shows that for a sender who is a male friend, using a positive emoji in a neutral message increases how emotionally connected the receiver feels to him compared to using either no emoji or a negative emoji.

The comparison between the emoji-type groups displayed significant differences [$F(3, 119) = 6.465$, p = .000, $\eta_p^2 = .140$]. The pairwise comparisons for the group effect of the emoji type using a Bonferroni adjustment on emotional connection indicated significant difference between F_A and F_B ($N = 30$, $M = .656$, $SD = .177$), ($p = .001$), F_A ($N = 31$, $M = -.312$, $SD = .175$) and NF_A ($N = 32$, $M = .563$, $SD = .172$) ($p = .003$), and F_A and NF_B ($N = 30$, $M = .478$, $SD = .177$) ($p = .012$). But the pairwise difference was not significant between NF_A and F_B, NF_A and NF_B, or F_B and NF_B ($p > .05$).

Overall Patterns Regarding the Effects of Emoji Valence on Emotional Connection

Overall, the findings indicate that the valence of an emoji in a neutral text does affect the receiver's emotional connection, except for when the sender is a male acquaintance. Therefore, H_{1c} is partially supported. Specifically, receivers feel more emotionally connected to all

sender types, except the male acquaintance, when the sender uses a positive emoji compared to no emoji or a negative emoji in a neutral message. But, using a negative emoji is only worse than using no emoji for fostering emotional connection with the receiver when the sender of the neutral message is a female friend. All of the statistically significant mean differences described throughout this section are summarized below in *Table III.*

Table III: Statistically Significant Mean Differences for Tests of Emoji Valence

Test Type	Outcome Variable	FA	MA	FF	MF
Valence	*Likability*	Θ- < Θ0 < Θ+	Θ- < Θ+ < Θ0	Θ- < Θ0 < Θ+ *(Fa)* Θ- < Θ0, Θ+ *(Fb)* Θ-, Θ0 < Θ+ *(NFa)* Θ- < Θ+ *(NFb)*	Θ- < Θ0 **Significant group difference (Fa<NFa)*
	Intelligence	Θ- < *Θ0, Θ+* **No significant effect for Fa*	Θ- < Θ+ < Θ0	Θ- < Θ0	Θ- < Θ0
	Emotional Connection	Θ0, Θ- < Θ+	—	Θ- < Θ0 < Θ+	Θ-, Θ0 < Θ+ **Significant group difference (Fa<NFa, Fb, NFb)*

Note: Message type is listed before emoji type. Θ = Neutral Message, N = Negative Message, P = Positive Message, 0 = No Emoji, - = Negative Emoji, + = Positive Emoji, FA = Female Acquaintance, MA = Male Acquaintance, FF = Female Friend, MF = Male Friend

Emoji Alignment – H_2 and H_3

To examine the effects of emoji alignment (whether an emoji's valence corresponded with or contradicted the message valence) on the receiver's perception of the sender, a series of repeated measure analyses were computed. The analyses compared the following three conditions for each sender type when examining emoji alignment with negative texts: negative text with no emoji,

negative text with a positive emoji, negative text with a negative emoji. When examining emoji alignment with positive texts, the following three conditions were compared for each sender type: positive text with no emoji, positive text with a positive emoji, positive text with a negative emoji.

Emoji Alignment in Positive Text – H_2

Effects on Likability – H_{2a}

As hypothesized, when the text is positive, consonant usage of emojis increases the perceived likability of the sender compared to dissonant usage of emojis. Below are the statistically significant results supporting these findings followed by a review of key patterns:

Female Acquaintance

When the sender was a female acquaintance, the test result showed no sign of interaction between emoji alignment and emoji type ($p > .05$). The main effect of emoji alignment was significant on likability [Wilks' Lambda = .546, $F(2, 118) = 49.032$, $p = .000$, $\eta_p^2 = .454$]. The pairwise comparisons for the main effect of emoji alignment using a Bonferroni adjustment on likability indicated significant difference between the positive control ($N = 123$, $M = .52$, $SD = 1.363$) and the positive message with a positive emoji ($N = 123$, $M = .88$, $SD = 1.480$) ($p = .001$), between the positive control and the positive message with a negative emoji ($N = 123$, $M = -.50$, $SD = 1.363$) ($p = .000$), and between the positive message with a positive emoji and the positive message with a negative emoji ($p = .000$). This shows that for a sender who is a female acquaintance, using a positive emoji in a positive message increases how likable the receiver perceives her to be compared to a negative emoji or no emoji – and using a

negative emoji is worse than using no emoji. The pairwise comparisons between the emoji-type groups did not detect any significant differences ($p > .05$).

Male Acquaintance

When the sender was a male acquaintance, the test result showed no sign of interaction between emoji alignment and emoji type ($p > .05$). The main effect of emoji alignment was significant on likability [Wilks' Lambda= .741, $F(2, 118) = 20.638$, $p = .001$, $\eta_p^2 = .259$]. The pairwise comparisons for the main effect of emoji alignment using a Bonferroni adjustment on likability indicated significant difference between the positive control ($N = 123$, $M = .04$, $SD = 1.581$) and the positive message with a negative emoji ($N = 123$, $M = -.94$, $SD = 1.387$) ($p = .000$), as well as between the positive message with a positive emoji ($N = 123$, $M = -.01$, $SD = 1.739$) and the positive message with a negative emoji ($p = .000$). This shows that for a sender who is a male acquaintance, using a positive emoji in a positive message increases how likable the receiver perceives him to be compared to a negative emoji. The same pattern applies when the male acquaintance uses no emoji compared to a negative emoji in this condition. The pairwise comparisons between the emoji-type groups did not detect any significant differences ($p > .05$).

Female Friend

When the sender was a female friend, the test result showed no sign of interaction between emoji alignment and emoji type ($p > .05$). The main effect of emoji alignment was significant on likability [Wilks' Lambda = .594, $F(2, 118) = 40.313$, $p = .000$, $\eta_p^2 = .406$]. The pairwise comparisons

for the main effect of emoji alignment using a Bonferroni adjustment on likability indicated significant difference between the positive control (N = 123, M = .04, SD = 1.581) and the positive message with a negative emoji (N = 123, M = -.94, SD = 1.387) (p = .000), as well as between the positive message with a positive emoji (N = 123, M = -.01, SD = 1.739) and the positive message with a negative emoji (p = .000). This shows that when the sender is a female friend, using a positive emoji in a positive message increases how likable the receiver perceives her to be compared to a negative emoji or no emoji – and using a negative emoji is worse than using no emoji. The pairwise comparisons between the emoji-type groups did not detect any significant differences (p > .05).

Male Friend

When the sender was a male friend, the test result showed no sign of interaction between emoji alignment and emoji type (p > .05). The main effect of emoji alignment was significant on likability [Pillai's Trace = .189, F(2, 118) = 13.754, p = .000, η_p^2 = .189]. The pairwise comparisons for the main effect of emoji alignment using a Bonferroni adjustment on likability indicated significant difference between the positive control (N = 123, M = .63, SD = 1.410) and the positive message with a positive emoji (N = 123, M = .93, SD = 1.608) (p = .025), between the positive control and the positive message with a negative emoji (N = 123, M = .11, SD = 1.301) (p = .001), and between the positive message with a positive emoji and the positive message with a negative emoji (p = .000). Again, this shows that when a sender is a male friend, using a positive emoji in a positive message increases how likable the receiver perceives him to be compared to a negative emoji or no emoji – and using a negative emoji is worse than using

no emoji. The pairwise comparison between the emoji-type groups did not detect any significant differences ($p > .05$).

Overall Patterns Regarding the Effects of Emoji Alignment on Likability When the Text is Positive

Overall, the findings support H_{2a} and indicate that when the text is positive, consonant usage of emojis increases the perceived likability of the sender compared to dissonant usage of emojis. The analyses show that for all sender types except the male acquaintance, adding a positive emoji to a positive text also increases the sender's perceived likability compared to using no emoji.

Effects on Intelligence – H_{2b}

As hypothesized, when the text is positive, consonant usage of emojis increases the perceived intelligence of the sender compared to dissonant usage of emojis. Below are the statistically significant results supporting these findings followed by a review of key patterns:

Female Acquaintance

When the sender was a female acquaintance, the test result showed no sign of interaction between emoji alignment and emoji type ($p > .05$). The main effect of emoji alignment was significant on perceived intelligence [Wilks' Lambda = .758, $F(2, 118) = 18.847$, $p = .000$, $\eta_p^2 = .242$]. The pairwise comparisons for the main effect of emoji alignment using a Bonferroni adjustment on perceived intelligence indicated significant difference between the positive control ($N = 123$, $M = -.06$, $SD = 1.223$) and the positive message with a negative emoji ($N = 123$, $M = -.65$,

SD = 1.261) (*p* = .000), as well as between the positive message with a positive emoji (*N* = 123, *M* = .12, *SD* = 1.265) and the positive message with a negative emoji (*p* = .000). This shows that when a sender is a female acquaintance, using a consonant emoji in a positive message increases how intelligent the receiver perceives her to be compared to using a dissonant emoji. However, there is no statistically significant difference between how intelligent the receiver perceives the sender to be when a positive message contains a positive emoji compared to when a positive message contains no emoji. This pattern was consistent across all sender types. The pairwise comparisons between the emoji-type groups did not detect any significant differences (*p* > .05).

Male Acquaintance

When the sender was a male acquaintance, the test result showed no sign of interaction between emoji alignment and emoji type (*p* > .05). The main effect of emoji alignment was significant on perceived intelligence [Wilks' Lambda= .856, *F*(2, 118) = 9.934, *p* = .000, η_p^2 = .144]. The pairwise comparisons for the main effect of emoji alignment using a Bonferroni adjustment on perceived intelligence indicated significant difference between the positive control (*N* = 123, *M* = -.34, *SD* = 1.260) and the positive message with a negative emoji (*N* = 123, *M* = -.80, *SD* = 1.297) (*p* = .000), as well as between the positive message with a positive emoji (*N* = 123, *M* = -.33, *SD* = 1.335) and the positive message with a negative emoji (*p* = .000). The pairwise comparisons between the emoji-type groups did not detect any significant differences (*p* > .05).

Female Friend

When the sender was a female friend, the test result showed no sign of interaction between emoji alignment and emoji type ($p > .05$). The main effect of emoji alignment was significant on perceived intelligence [Wilks' Lambda = .784, $F(2, 118) = 16.272$, $p = .000$, $\eta_p^2 = .216$]. The pairwise comparisons for the main effect of emoji alignment using a Bonferroni adjustment on perceive intelligence indicated significant difference between the positive control ($N = 123$, $M = .63$, $SD = 1.154$) and the positive message with a negative emoji ($N = 123$, $M = .02$, $SD = 1.215$) ($p = .000$), as well as between the positive message with a positive emoji ($N = 123$, $M = .80$, $SD = 1.341$) and the positive message with a negative emoji ($p = .000$). The pairwise comparisons between the emoji-type groups did not detect any significant differences ($p > .05$).

Male Friend

When the sender was a male friend, the test result showed no sign of interaction between emoji alignment and emoji type ($p > .05$). The main effect of emoji alignment was significant on perceived intelligence [Pillai's Trace = .153, $F(2, 118) = 10.645$, $p = .000$, $\eta_p^2 = .153$]. The pairwise comparisons for the main effect of emoji alignment using a Bonferroni adjustment on perceive intelligence indicated significant difference between the positive control ($N = 123$, $M = .20$, $SD = 1.226$) and the positive message with a negative emoji ($N = 123$, $M = -.24$, $SD = 1.208$) ($p = .000$), as well as between the positive message with a positive emoji ($N = 123$, $M = .37$, $SD = 1.398$) and the positive message with a negative emoji ($p = .000$). The pairwise comparisons between the emoji-type groups did not detect any significant differences ($p > .05$).

Overall Patterns Regarding the Effects of Emoji Alignment on Intelligence When the Text is Positive

Overall, the findings support H_{2b} and indicate that when the text is positive, consonant usage of emojis increases the perceived intelligence of the sender compared to dissonant usage of emojis. However, the results show that there is no statistically significant difference between how intelligent the receiver perceives the sender to be when a positive message contains a positive emoji compared to when a positive message contains no emoji. Also, a positive text with a negative emoji led to the sender being perceived as less likable by the receiver compared to a positive text with no emoji or a positive text with a positive emoji for each sender type. These three patterns were consistent across all sender types.

Effects on Emotional Connection – H_{2c}

As hypothesized, when the text is positive, consonant usage of emojis increases the receiver's emotional connection to the sender compared to dissonant usage of emojis. Below are the statistically significant results supporting these findings followed by a review of key patterns:

Female Acquaintance

When the sender was a female acquaintance, the test result showed no sign of interaction between emoji alignment and emoji type ($p > .05$). The main effect of emoji alignment was significant on emotional connection [Wilks' Lambda = .675, $F(2, 118) = 28.452$, $p = .000$, $\eta_p^2 = .325$]. The pairwise comparisons for the main effect of emoji alignment using a Bonferroni adjustment on emotional connection indicated significant difference between the positive control ($N = 123$, $M = .18$, $SD =$

1.625) and the positive message with a positive emoji (N = 123, M = .54, SD = 1.685) (p = .001), between the positive control and the positive message with a negative emoji (N = 123, M = -.50, SD = 1.434) (p = .000), and between the positive message with a positive emoji and the positive message with a negative emoji (p = .000). This shows that when the sender is a female acquaintance, using a consonant emoji in a positive message increases how emotionally connected the receiver feels to her compared to using a dissonant emoji – and that using a negative, i.e. dissonant, emoji in text that is positive is also worse than using no emoji. The analyses also show that when a female acquaintance uses a positive emoji in a positive text, the receiver feels more emotionally connected to her than if she uses no emoji. The pairwise comparisons between the emoji-type groups did not detect any significant differences (p > .05).

Male Acquaintance

When the sender was a male acquaintance, the test result showed no sign of interaction between emoji alignment and emoji type (p > .05). The main effect of emoji alignment was significant on emotional connection [Wilks' Lambda = .838, F(2, 118) = 11.430, p = .000, η_p^2 = .162]. The pairwise comparisons for the main effect of emoji alignment using a Bonferroni adjustment on emotional connection indicated significant difference between the positive control (N = 123, M = -.36, SD = 1.542) and the positive message with a negative emoji (N = 123, M = -.88, SD = 1.534) (p = .001), as well as between the positive message with a positive emoji (N = 123, M = -.23, SD = 1.810) and the positive message with a negative emoji (p = .000). This shows that when the sender is a male acquaintance, using a consonant emoji in a positive message increases how emotionally

connected the receiver feels to him compared to using a dissonant emoji – and that using a dissonant emoji in a positive text is also worse than using no emoji. The pairwise comparisons between the emoji-type groups did not detect any significant differences ($p > .05$).

Female Friend

When the sender was a female friend, the test result showed no sign of interaction between emoji alignment and emoji type ($p > .05$). The main effect of emoji alignment was significant on emotional connection [Wilks' Lambda = .543, $F(2, 118) = 49.661$, $p = .000$, $\eta_p^2 = .457$]. The pairwise comparisons for the main effect of emoji alignment using a Bonferroni adjustment on emotional connection indicated significant difference between the positive control ($N = 123$, $M = 1.36$, $SD = 1.195$) and the positive message with a positive emoji ($N = 123$, $M = 1.73$, $SD = 1.294$) ($p = .001$), between the positive control and the positive message with a negative emoji ($N = 123$, $M = .37$, $SD = 1.393$) ($p = .000$), and between the positive message with a positive emoji and the positive message with a negative emoji ($p = .000$). This shows the same patterns described for the female acquaintance. The pairwise comparisons between the emoji-type groups did not detect any significant differences ($p > .05$).

Male Friend

When the sender was a male friend, the test result showed no sign of interaction between emoji alignment and emoji type ($p > .05$). The main effect of emoji alignment was significant on emotional connection [Wilks' Lambda = .907, $F(2, 118) = 6.055$, $p = .003$, $\eta_p^2 = .093$]. The pairwise

comparisons for the main effect of emoji alignment using a Bonferroni adjustment on emotional connection indicated significant difference between the positive control (N = 123, M = .70, SD = 1.342) and the positive message with a negative emoji (N = 123, M = .28, SD = 1.375) (p = .007), as well as between the positive message with a positive emoji (N = 123, M = .79, SD = 1.616) and the positive message with a negative emoji (p = .003). This shows the same patterns described for the female acquaintance and for the female friend, although unlike the analyses for those two sender types, for the male friend, the comparison between the emoji-type groups displayed significant differences [$F(3, 119) = 3.828$, p = .012, $\eta_p^2 = .088$]. The pairwise comparisons for the group effect of the emoji type using a Bonferroni adjustment on emotional connection indicated significant difference between F_A (N = 31, M = -6.9389e-17, SD = .203) and NF_B (N = 30, M = .878, SD = .207) (p = .018). But the pairwise difference was not significant between F_A and NF_A, F_A and F_B, NF_A and F_B, NF_A and NF_B, or F_B and NF_B ($p > .05$).

Overall Patterns Regarding the Effects of Emoji Alignment on Emotional Connection When the Text is Positive

Overall, the findings support H_{2c} and indicate that when the text is positive, consonant usage of emojis increases how emotionally connected the receiver feels to the sender compared to dissonant usage of emojis. All sender types, with the exception of the male acquaintance, follow the same pattern, where the positive text with a positive emoji leads to the receiver feeling more emotionally connected to the sender than when the positive text contains no emoji, which leads to the receiver feeling more emotionally connected to the sender than when the positive text contains a negative

emoji. The only variance when the sender is a male acquaintance is that there is no statistically significant difference between how emotionally connected the receiver feels to the sender when the positive text contains a positive emoji compared to no emoji. All of the statistically significant mean differences described throughout this section are summarized below in *Table IV.*

Table IV: Statistically Significant Mean Differences for Tests of Emoji Alignment in Positive Text

Test Type	Outcome Variable	FA	MA	FF	MF
Emoji Alignment in Positive Text	*Likability*	P- < P0 < P+	*P- < P+, P0*	P- < P0 < P+	P- < P0 < P+
	Intelligence	P- < P0, P+	P- < P0, P+	P- < P0, P+	P- < P0, P+
	Emotional Connection	P- < P0 < P+	P- < P0, P+	P- < P0 < P+	P- < P0 < P+ **Significant group difference (Fa<NFb)*

Note: Message type is listed before emoji type. Θ = Neutral Message, N = Negative Message, P = Positive Message, 0 = No Emoji, - = Negative Emoji, + = Positive Emoji, FA = Female Acquaintance, MA = Male Acquaintance, FF = Female Friend, MF = Male Friend

Emoji Alignment in Negative Text – H_3

Effects on Likability – H_{3a}

When the text is negative, consonant usage of emojis decreases the perceived likability of the sender compared to dissonant usage of emojis in certain conditions. Therefore, H_{3a} is only partially supported. Below are the statistically significant results supporting these findings followed by a review of key patterns:

Female Acquaintance

When the sender was a female acquaintance, the tests of emoji alignment and emoji type indicated a significant interaction effect between

them [Pillai's Trace = .187, $F(6, 238.000) = 4.085$, $p = .001$, $\eta_p^2 = .093$]. In this situation, interpreting the main effect may not be valid. Therefore, a series of repeated measure analyses were conducted after splitting the data by the emoji-type group. The test result showed that emoji alignment had significant effects in all groups [$F(2, 42.624) = 28.600$, $p = .000$ for F_A; $F(2, 21.644) = 8.675$, $p = .001$ for F_B; $F(2, 42.948) = 40.281$, $p = .000$ for NF_A; and $F(2, 22.478) = 10.208$, $p = .001$ for NF_B].

The pairwise comparisons of emoji alignment after the Bonferroni adjustment in each separate group indicated that there were significant differences between the negative control and the negative message with a positive emoji ($M_{diff} = -2.258$ $SD = .368$, $p = .000$), as well as between the negative message with a positive emoji and the negative consonant message ($M_{diff} = 1.677$ $SD = .302$, $p = .000$) for F_A. The negative message with a positive emoji has the highest score on likability, followed by the negative message with a negative emoji and the negative message with no emoji when the sender is a female acquaintance using facial emojis.

The pairwise comparisons of emoji alignment after the Bonferroni adjustment in each separate group indicated that there were significant differences between the negative control and the negative message with a positive emoji ($M_{diff} = -1.400$ $SD = .270$, $p = .000$), as well as between the negative control and the negative consonant message ($M_{diff} = -1.533$ $SD = .431$, $p = .004$) for F_B. The negative message with a negative emoji has the highest score on likability, followed by the negative message with a positive emoji and the negative message with no emoji when the sender is a female acquaintance using facial emojis.

The pairwise comparisons of emoji alignment after the Bonferroni adjustment in each separate group indicated that there were significant

differences between the negative control and the negative message with a positive emoji (M_{diff} =*-1.813* *SD* = .289, *p* = .000), as well as between the negative message with a positive emoji and the negative consonant message (M_{diff} =*2.156* *SD* = .291, *p* = .000) for NF_A. The negative message with a positive emoji has the highest score on likability, followed by the negative message with no emoji and the negative message with a negative emoji when the sender is a female acquaintance using non facial emojis.

There were significant differences between the negative control and the negative message with a positive emoji (M_{diff} =*-1.700* *SD* = .254, *p* = .000), as well as between the negative control and the negative consonant message (M_{diff} =*-1.133* *SD* = .417, *p* = .033) for NF_B. The negative message with a positive emoji has the highest score on likability, followed by the negative message with a negative emoji and the negative message with no emoji when the sender is a female acquaintance using facial emojis.

The groups did not follow the same pattern regarding the condition leading to the highest score on likability. Only F_A and NF_B shared the same pattern, with the negative message paired with a positive emoji leading to the highest score on likability, followed by the negative message with a negative emoji and the negative message with no emoji. In all but F_B, the negative message paired with a positive emoji led to the highest score on likability.

This shows that when the text is negative and the sender is a female acquaintance, consonant usage of emojis only decreases the perceived likability of the sender compared to dissonant usage of emojis if positive emojis are presented before negative emojis in the stimulus material. When the opposite occurs, there is no statistically significant difference between

dissonant usage of emojis in a negative message and consonant usage of emojis on how likable the receiver perceives the sender to be.

Male Acquaintance

When the sender was a male acquaintance, the tests of emoji alignment and emoji type indicated a significant interaction effect between them [Wilks' Lambda = .877, $F(6, 236.000) = 2.678$, $p = .016$, $\eta_p^2 = .064$]. In this situation, interpreting the main effect may not be valid. Therefore, a series of repeated measure analyses were conducted after splitting the data by the emoji-type group. As Mauchly's test showed that sphericity was not assumed in all groups ($p < .001$), the Hyunh-Feldt adjustment was used for tests of the within-subjects effects. The test result showed that emoji alignment had significant effects in F_A [$F(1.571, 19.755) = 9.220$, $p = .001$] and NF_A [$F(1.854, 20.129) = 15.627$, $p = .000$].

The pairwise comparisons of emoji alignment after the Bonferroni adjustment in each separate group indicated that there were significant differences between the negative control and the negative message with a positive emoji ($M_{diff} = -1.097$ $SD = .378$, $p = .021$), as well as between the negative message with a positive emoji and the negative consonant message ($M_{diff} = 1.323$ $SD = .369$, $p = .004$) for F_A. The negative message with a positive emoji has the highest score on likability, followed by the negative message with no emoji and the negative message with a negative emoji when the sender is a male acquaintance using facial emojis.

NF_A followed the same pattern. The pairwise comparisons of emoji alignment after the Bonferroni adjustment in each separate group indicated that there were significant differences between the negative control and the negative message with a positive emoji ($M_{diff} = -1.219$ $SD = .290$, $p = .001$),

as well as between the negative message with a positive emoji and the negative consonant message ($M_{diff} = 1.406$ $SD = .304$, $p = .000$) for NF_A. The negative message with a positive emoji has the highest score on likability, followed by the negative message with no emoji and the negative message with a negative emoji when the sender is a male acquaintance using facial emojis.

Again, this shows that when the text is negative and the sender is a male acquaintance, consonant usage of emojis only decreases the perceived likability of the sender compared to dissonant usage of emojis if positive emojis are presented before negative emojis in the stimulus material. However, unlike the results when the sender was specified as a female acquaintance, there were actually no significant effects when the sender was specified as a male acquaintance and negative emojis were presented before positive emojis in the stimulus material.

Female Friend

When the sender was a female friend, the test result showed no sign of interaction between emoji alignment and emoji type ($p > .05$). The main effect of emoji alignment was significant on likability [Wilks' Lambda = .515, $F(2, 118) = 55.525$, $p = .000$, $\eta_p^2 = .485$]. The pairwise comparisons for the main effect of emoji alignment using a Bonferroni adjustment on likability indicated significant difference between the negative control ($N = 123$, $M = -.38$, $SD = 1.463$) and the negative message with a positive emoji ($N = 123$, $M = .71$, $SD = 1.508$) ($p = .000$), the negative control and the negative message with a negative emoji ($N = 123$, $M = -.76$, $SD = 1.410$) ($p = .001$), and between the negative message with a positive emoji and the negative message with a negative emoji ($p = .000$). This shows that when

the sender is a female friend and the text is negative, consonant usage of emojis does decrease the perceived likability of the sender compared to dissonant usage of emojis.

The comparisons between the emoji-type groups displayed significant differences [$F(3, 119) = 2.851$, p = .040, $\eta_p^2 = .067$]. The pairwise comparisons for the group effect of the emoji type using a Bonferroni adjustment on likability indicated significant difference between F_A ($N = 31$, $M = -.581$, $SD = .211$) and NF_B ($N = 30$, $M = .289$, $SD = .214$) ($p = .027$). But the pairwise difference was not significant between F_A and NF_A, F_A and F_B, NF_A and F_B, NF_A and NF_B, or F_B and NF_B ($p > .05$).

Male Friend

When the sender was a male friend, the test result showed no sign of interaction between emoji alignment and emoji type ($p > .05$). The main effect of emoji alignment was significant on likability [Wilks' Lambda = .795, $F(2, 118) = 15.248$, $p = .000$, $\eta_p^2 = .205$]. The pairwise comparisons for the main effect of emoji alignment using a Bonferroni adjustment on likability indicated significant difference between the negative control ($N = 123$, $M = -.41$, $SD = 1.419$) and the negative message with a positive emoji ($N = 123$, $M = .12$, $SD = 1.496$) ($p = .002$), as well as between the negative message with a positive emoji and the negative message with a negative emoji ($N = 123$, $M = -.69$, $SD = 1.483$) ($p = .000$). This shows that when the sender is a male friend and the text is negative, consonant usage of emojis does decrease the perceived likability of the sender compared to dissonant usage of emojis.

The comparison between the emoji-type groups displayed significant differences [$F(3, 119) = 3.828$, p = .012, $\eta_p^2 = .088$]. The pairwise comparisons for the group effect of the emoji type using a Bonferroni adjustment on likability indicated significant difference between F_A ($N = 31$, $M = -.753$, $SD = .199$) and NF_B ($N = 30$, $M = .122$, $SD = .202$) ($p = .015$). But the pairwise difference was not significant between F_A and NF_A, F_A and F_B, NF_A and F_B, NF_A and NF_B, or F_B and NF_B ($p > .05$).

Overall Patterns Regarding the Effects of Emoji Alignment on Likability When the Text is Negative

Overall, the findings indicate that for female acquaintances and male acquaintances, consonant usage of emojis in negative texts only decrease the perceived likability of the sender compared to dissonant usage of emojis when positive emojis are presented before negative emojis in the stimulus material. However, for female friends and male friends, consonant usage of emojis in negative texts decrease the perceived likability of the sender compared to dissonant usage of emojis regardless of presentation order.

Effects on Intelligence – H_{3b}

When the text is negative, consonant usage of emojis only decreases the perceived intelligence of the sender compared to dissonant usage of emojis when the sender is a female friend. Therefore, H_{3b} is just partially supported. Below are the statistically significant results supporting these findings followed by a review of key patterns:

Female Acquaintance

When the sender was a female acquaintance, the test result showed no sign of interaction between emoji alignment and emoji type ($p > .05$). The main effect of emoji alignment was significant on perceived intelligence [Pillai's Trace = .134, $F(2, 118) = 9.162$, $p = .000$, $\eta_p^2 = .134$]. The pairwise comparisons for the main effect of emoji alignment using a Bonferroni adjustment on perceived intelligence indicated significant difference between the negative control ($N = 123$, $M = -.89$, $SD = 1.279$) and the negative message with a positive emoji ($N = 123$, $M = -.26$, $SD = 1.253$) ($p = .000$), as well as between the negative control and the negative message with a negative emoji ($N = 123$, $M = -.51$, $SD = 1.445$) ($p = .050$). Surprisingly, this shows that when the sender is a female acquaintance, both consonant and dissonant usage of emojis in a negative text lead to the receiver perceiving the female acquaintance as more intelligent that when she uses no emoji in a negative text. However, there is no statistically significant difference between the perceived intelligence of the female acquaintance when a dissonant emoji is used in a negative text compared to a consonant emoji. The pairwise comparisons between the emoji-type groups did not detect any significant differences ($p > .05$).

Male Acquaintance

When the sender was a male acquaintance, the tests of emoji alignment and emoji type indicated a significant interaction effect between them [Pillai's Trace = .108, $F(6, 238.000) = 2.264$, $p = .038$, $\eta_p^2 = .054$]. In this situation, interpreting the main effect may not be valid. Therefore, a series of repeated measure analyses were conducted after splitting the data

by the emoji-type group. As Mauchly's test showed that sphericity was not assumed in all groups ($p < .001$), the Hyunh-Feldt adjustment was used for tests of the within-subjects effects. The test result showed that emoji alignment had significant effects in NF_A [$F(1.632, 3.562) = 4.205$, $p = .027$] and F_B [$F(1.543, 8.743) = 3.767$, $p = .041$]. However, the pairwise comparisons of emoji alignment after the Bonferroni adjustment in each separate group indicated that there were no significant differences between conditions in either group ($p > .05$). This shows that when the text is negative and the sender is a male acquaintance, there are no significant effects of emoji usage on how intelligent the receiver perceives the sender to be.

Female Friend

When the sender was a female friend, the test result showed no sign of interaction between emoji alignment and emoji type ($p > .05$). The main effect of emoji alignment was significant on perceived intelligence [Wilks' Lambda = .845, $F(2, 118) = 10.819$, $p = .000$, $\eta_p^2 = .155$]. The pairwise comparisons for the main effect of emoji alignment using a Bonferroni adjustment on perceived intelligence indicated significant difference between the negative control ($N = 123$, $M = -.15$, $SD = .938$) and the negative message with a positive emoji ($N = 123$, $M = .23$, $SD = 1.279$) ($p = .005$), the negative control and the negative message with a negative emoji ($N = 123$, $M = -.37$, $SD = 1.118$) ($p = .028$), and between the negative message with a positive emoji and the negative message with a negative emoji ($p = .000$). This shows that when the text is negative and the sender is a female friend, consonant usage of emojis does decrease the perceived intelligence of the sender compared to dissonant usage of emojis. The

pairwise comparisons between the emoji-type groups did not detect any significant differences ($p > .05$).

Male Friend

When the sender was a male friend, the test result showed no sign of interaction between emoji alignment and emoji type ($p > .05$). The main effect of emoji alignment was not significant on perceived intelligence ($p > .05$).

Overall Patterns Regarding the Effects of Emoji Alignment on Intelligence When the Text is Negative

Overall, the findings indicate that consonant usage of emojis in negative texts only decreases the perceived intelligence of the sender compared to dissonant usage of emojis when the sender is a female friend. However, for both female sender types, the addition of a positive emoji to a negative text increases how intelligent the receiver perceives the sender to be.

Effects on Emotional Connection – H_{3c}

When the text is negative, consonant usage of emojis only consistently decreases how emotionally connected the receiver feels to the sender compared to dissonant usage of emojis when the sender is a female friend or male friend. Therefore, H_{3c} is partially supported. Below are the statistically significant results supporting these findings followed by a review of key patterns:

Female Acquaintance

When the sender was a female acquaintance, the tests of emoji alignment and emoji type indicated a significant interaction effect between them [Wilks' Lambda = .834, $F(2, 118) = 11.704$, $p = .000$, $\eta_p^2 = .166$]. In this situation, interpreting the main effect may not be valid. Therefore, a series of repeated measure analyses were conducted after splitting the data by the emoji-type group. As Mauchly's test showed that sphericity was not assumed in all groups ($p < .001$), the Hyunh-Feldt adjustment was used for tests of the within-subjects effects. The test result showed that emoji alignment had significant effects in NF_A [$F(2, 34.288) = 17.603$, $p = .000$] and NF_B [$F(2, 4.978) = 3.577$, $p = .034$].

The pairwise comparisons of emoji alignment after the Bonferroni adjustment in each separate group indicated that there were significant differences between the negative control and the negative message with a positive emoji ($M_{diff} = -1.594$ $SD = .368$, $p = .000$), as well as between the negative message with a positive emoji and the negative consonant message ($M_{diff} = 1.500$ $SD = .321$, $p = .000$) for NF_A. The negative message with a positive emoji has the highest score on emotional connection, followed by the negative message with a negative emoji and the negative message with no emoji when the sender is a female acquaintance using non facial emojis.

There were significant differences between the negative control and the negative message with a positive emoji ($M_{diff} = -.800$ $SD = .301$, $p = .038$) for NF_B. The negative message with a positive emoji has the highest score on emotional connection, followed by the negative message with a negative emoji and the negative message with no emoji when the sender is a female acquaintance using non facial emojis.

These results show that when the sender of a negative text is a female acquaintance, consonant usage of emojis will decrease the receiver's emotional connection to her compared to dissonant usage of emojis – but only when non-facial emojis are used an positive emojis have been presented before negative emojis. When the sender is a female acquaintance, the use of a dissonant emoji in a negative text also leads to an increase in how emotionally connected the receiver feels to the sender compared to if no emoji is used, but only when non-facial emojis are used.

Male Acquaintance

When the sender was a male acquaintance, the test result showed no sign of interaction between emoji alignment and emoji type ($p > .05$). The main effect of emoji alignment was not significant on emotional connection ($p > .05$).

Female Friend

When the sender was a female friend, the test result showed no sign of interaction between emoji alignment and emoji type ($p > .05$). The main effect of emoji alignment was significant on emotional connection [Wilks' Lambda = .820, $F(2, 118) = 12.988$, $p = .000$, $\eta_p^2 = .180$]. The pairwise comparisons for the main effect of emoji alignment using a Bonferroni adjustment on emotional connection indicated significant difference between the negative control ($N = 123$, $M = .24$, $SD = 1.528$) and the negative message with a positive emoji ($N = 123$, $M = .77$, $SD = 1.464$) ($p = .003$), the negative control and the negative message with a negative emoji ($N = 123$, $M = -.03$, $SD = 1.504$) ($p = .023$), and between the negative

message with a positive emoji and the negative message with a negative emoji (p = .000).

These results show that when the sender of a negative text is a female friend, consonant usage of emojis decreases the receiver's emotional connection to her compared to dissonant usage of emojis – and the use of a negative emoji is worse than the use of no emoji.

The comparison between the emoji-type groups displayed significant differences [$F(3, 119) = 3.471$, p = .018, $\eta_p^2 = .080$]. The pairwise comparisons for the group effect of the emoji type using a Bonferroni adjustment on emotional connection indicated significant difference between F_A (N = 31, M = -.226, SD = .209) and NF_B (N = 30, M = .689, SD = .212) (p = .027). But the pairwise difference was not significant between F_A and NF_A, F_A and F_B, NF_A and F_B, NF_A and NF_B, or F_B and NF_B ($p > .05$).

Male Friend

When the sender was a male friend, the tests of emoji alignment and emoji type indicated a significant interaction effect between them [Wilks' Lambda = .883, $F(6, 236.000) = 2.520$, p = .022, $\eta_p^2 = .060$]. In this situation, interpreting the main effect may not be valid. Therefore, a series of repeated measure analyses were conducted after splitting the data by the emoji-type group. As Mauchly's test showed that sphericity was not assumed in all groups ($p < .001$), the Hyunh-Feldt adjustment was used for tests of the within-subjects effects. The test result showed that emoji alignment had significant effects in NF_A [$F(2, 11.885) = 14.671$, p = .000].

The pairwise comparisons of emoji alignment after the Bonferroni adjustment in each separate group indicated that there were significant

differences between the negative control and the negative message with a positive emoji (M_{diff}=*-.969* *SD* = .227, *p* = .001), as well as between the negative message with a positive emoji and the negative consonant text (M_{diff}=*1.125* *SD* = .257, *p* = .000) for NF_A. The negative message with a positive emoji has the highest score on emotional connection, followed by the negative message with no emoji and the negative message with a negative emoji when the sender is a male friend using non facial emojis.

These results show that when the sender of a negative text is a male friend, consonant usage of emojis decreases the receiver's emotional connection to him compared to dissonant usage of emojis – and the is no statistically significant difference between the use of a negative emoji and the use of no emoji in this condition.

Overall Patterns Regarding the Effects of Emoji Alignment on Emotional Connection When the Text is Negative

Overall, the findings indicate that consonant usage of emojis in negative texts only consistently decreases the perceived intelligence of the sender compared to dissonant usage of emojis when the sender is a female friend or male friend. However, emoji alignment in a negative text does affect the receiver's emotional connection to the sender for female acquaintances as well. All of the statistically significant mean differences described throughout this section are summarized below in *Table V.*

Table V: Statistically Significant Mean Differences for Tests of Emoji Alignment in Negative Text

Test Type	Outcome Variable	FA	MA	FF	MF
Emoji Alignment In Negative Text	*Likability*	*N-, N0* < N+ *(Fa and NFa)* N0 < *N-, N+ (Fb and NFb)*	N-, N0 < N+ *(Fa and NFa)* **No significant effect for Fb or NFb*	N- < N0 < N+ **Significant group difference (Fa<NFb)*	N-, N0 < N+ **Significant group difference (Fa<NFb)*
	Intelligence	N0 < N-, N+	—	N- < N0 < N+	—
	Emotional Connection	N0, N- < N+ *(NFa)* N0 < N+ *(NFb)* **No significant effect for Fa or Fb*	—	N- < N0 < N+ **Significant group difference (Fa<NFb)*	N-, N0 < N+ (NFa) **No significant effect for Fa, Fb, or NFb*

Note: Message type is listed before emoji type. Θ = Neutral Message, N = Negative Message, P = Positive Message, 0 = No Emoji, - = Negative Emoji, + = Positive Emoji, FA = Female Acquaintance, MA = Male Acquaintance, FF = Female Friend, MF = Male Friend

Dissonance Strength – RQ_1

To examine whether there was a statistically significant difference between dissonant message types in terms of perceived likability of the sender, perceived intelligence of the sender, and the receiver's emotional connection to the sender, a series of repeated measure analyses were computed. The analyses compared the following three conditions for each sender type: neutral text without an emoji, negative text with a positive emoji, positive text with a negative emoji.

Effects on Likability

The repeated measure analyses indicate that there is a statistically significant difference between dissonant message types in terms of the perceived likability of the sender only when the sender is a female acquaintance. However, for all sender types, the neutral control leads to greater perceptions of likability for

the sender compared to both dissonant message types. Below are the statistically significant results supporting these findings followed by a review of key patterns:

Female Acquaintance

When the sender was a female acquaintance, the test result showed no sign of interaction between dissonance strength and emoji type ($p > .05$). The main effect of dissonance strength was significant on likability [Wilks' Lambda = .744, $F(2, 118) = 20.289$, $p = .000$, $\eta_p^2 = .256$]. The pairwise comparisons for the main effect of dissonance strength using a Bonferroni adjustment on likability indicated significant difference between the neutral control ($N = 123$, $M = .45$, $SD = .851$) and the dissonant text with a positive emoji ($N = 123$, $M = -.08$, $SD = 1.566$) ($p = .001$), between the neutral control and the dissonant text with a negative emoji ($N = 123$, $M = -.50$, $SD = 1.363$) ($p = .000$), and between the dissonant text with a positive emoji and the dissonant text with a negative emoji ($p = .013$). This shows that when the sender is a female acquaintance, there is a statistically significant difference between a positive text with a negative emoji and a negative text with a positive emoji in terms of how likable the sender is perceived to be – with the negative emoji condition resulting in decreased perceived likability of the sender compared to the positive emoji condition. The pairwise comparisons between the emoji-type groups did not detect any significant differences ($p > .05$).

Male Acquaintance

When the sender was a male acquaintance, the test result showed no sign of interaction between dissonance strength and emoji type ($p > .05$). The main effect of dissonance strength was significant on likability [Wilks'

Lambda = .648, $F(2, 118) = 32.061$, $p = .000$, $\eta_p^2 = .352$]. The pairwise comparisons for the main effect of dissonance strength using a Bonferroni adjustment on likability indicated significant difference between the neutral control ($N = 123$, $M = .26$, $SD = 1.062$) and the dissonant text with a positive emoji ($N = 123$, $M = -.58$, $SD = 1.558$) ($p = .000$), as well as between the neutral control and the dissonant text with a negative emoji ($N = 123$, $M = -.94$, $SD = 1.387$) ($p = .000$). There was not a significant difference between the dissonant text with a positive emoji and the dissonant text with a negative emoji ($p > .05$). The pairwise comparisons between the emoji-type groups did not detect any significant differences ($p > .05$).

Female Friend

When the sender was a female friend, the test result showed no sign of interaction between dissonance strength and emoji type ($p > .05$). The main effect of dissonance strength was significant on likability [Wilks' Lambda = .837, $F(2, 118) = 11.520$, $p = .000$, $\eta_p^2 = .163$]. The pairwise comparisons for the main effect of dissonance strength using a Bonferroni adjustment on likability indicated significant difference between the neutral control ($N = 123$, $M = 1.18$, $SD = 1.087$) and the dissonant text with a positive emoji ($N = 123$, $M = .71$, $SD = 1.508$) ($p = .011$), as well as between the neutral control and the dissonant text with a negative emoji ($N = 123$, $M = .42$, $SD = 1.337$) ($p = .000$). There was not a significant difference between the dissonant text with a positive emoji and the dissonant text with a negative emoji ($p > .05$). The pairwise comparisons

between the emoji-type groups did not detect any significant differences ($p > .05$).

Male Friend

When the sender was a male friend, the test result showed no sign of interaction between dissonance strength and emoji type ($p > .05$). The main effect of dissonance strength was significant on likability [Wilks' Lambda = .893, $F(2, 118) = 7.070$, $p = .001$, $\eta_p^2 = .107$]. The pairwise comparisons for the main effect of dissonance strength using a Bonferroni adjustment on likability indicated significant difference between the neutral control ($N = 123$, $M = .60$, $SD = 1.317$) and the dissonant text with a positive emoji ($N = 123$, $M = .12$, $SD = 1.496$) ($p = .008$), as well as between the neutral control and the dissonant text with a negative emoji ($N = 123$, $M = .11$, $SD = 1.301$) ($p = .001$). There was not a significant difference between the dissonant text with a positive emoji and the dissonant text with a negative emoji ($p > .05$). The pairwise comparisons between the emoji-type groups did not detect any significant differences ($p > .05$).

Overall Patterns Regarding the Statistically Significant Differences Between Dissonant Message Types in Terms of Likability

Overall, the repeated measure analyses indicate that there is a statistically significant difference between dissonant message types in terms of how likable the sender is perceived to be only when the sender is a female acquaintance. In this situation, the positive text coupled with a negative emoji results in decreased perceived likability of the sender compared to the negative text coupled with a positive emoji. However, for

all sender types the neutral control leads to greater perceptions of likability for the sender compared to both dissonant message types.

Effects on Intelligence

The repeated measure analyses indicate that there is a statistically significant difference between dissonant message types in terms of the perceived intelligence of the sender when the sender is a female acquaintance or a male friend. For all sender types, the neutral control leads to greater perceptions of likability for the sender compared to both dissonant message types. Below are the statistically significant results supporting these findings followed by a review of key patterns:

Female Acquaintance

When the sender was a female acquaintance, the test result showed no sign of interaction between dissonance strength and emoji type ($p > .05$). The main effect of dissonance strength was significant on perceived intelligence [Wilks' Lambda = .780, $F(2, 118) = 16.661$, $p = .000$, $\eta_p^2 = .220$]. The pairwise comparisons for the main effect of dissonance strength using a Bonferroni adjustment on perceived intelligence indicated significant difference between the neutral control ($N = 123$, $M = .05$, $SD = .788$) and the dissonant text with a positive emoji ($N = 123$, $M = -.26$, $SD = 1.253$) ($p = .014$), between the neutral control and the dissonant text with a negative emoji ($N = 123$, $M = -.65$, $SD = 1.261$) ($p = .005$), and between the dissonant text with a positive emoji and the dissonant text with a negative emoji ($p = .013$). This shows that when the sender is a female acquaintance, the positive text coupled with a negative emoji results in decreased perceived likability of the sender compared to the negative text coupled

with a positive emoji. The pairwise comparisons between the emoji-type groups did not detect any significant differences ($p > .05$).

Male Acquaintance

When the sender was a male acquaintance, the test result showed no sign of interaction between dissonance strength and emoji type ($p > .05$). The main effect of dissonance strength was significant on perceived intelligence [Pillai's Trace = .216, $F(2, 118) = 16.220$, $p = .000$, $\eta_p^2 = .216$]. The pairwise comparisons for the main effect of dissonance strength using a Bonferroni adjustment on perceived intelligence indicated significant difference between the neutral control ($N = 123$, $M = -.02$, $SD = .707$) and the dissonant text with a positive emoji ($N = 123$, $M = -.58$, $SD = 1.397$) ($p = .001$), as well as between the neutral control and the dissonant text with a negative emoji ($N = 123$, $M = -.80$, $SD = 1.297$) ($p = .000$). There was not a significant difference between the dissonant text with a positive emoji and the dissonant text with a negative emoji ($p > .05$). The pairwise comparisons between the emoji-type groups did not detect any significant differences ($p > .05$).

Female Friend

When the sender was a female friend, the test result showed no sign of interaction between dissonance strength and emoji type ($p > .05$). The main effect of dissonance strength was significant on perceived intelligence [Wilks' Lambda = .810, $F(2, 118) = 13.831$, $p = .000$, $\eta_p^2 = .190$]. The pairwise comparisons for the main effect of dissonance strength using a Bonferroni adjustment on perceived intelligence indicated significant

difference between the neutral control (N = 123, M = .67, SD = .954) and the dissonant text with a positive emoji (N = 123, M = .23, SD = 1.279) (p = .011), as well as between the neutral control and the dissonant text with a negative emoji (N = 123, M = .02, SD = 1.215) (p = .000). There was not a significant difference between the dissonant text with a positive emoji and the dissonant text with a negative emoji (p > .05). The pairwise comparisons between the emoji-type groups did not detect any significant differences (p > .05).

Male Friend

When the sender was a male friend, the test result showed no sign of interaction between dissonance strength and emoji type (p > .05). The main effect of dissonance strength was significant on perceived intelligence [Wilks' Lambda = .780, F(2, 118) = 16.668, p = .000, η_p^2 = .220]. The pairwise comparisons for the main effect of dissonance strength using a Bonferroni adjustment on perceived intelligence indicated significant difference between the neutral control (N = 123, M = .33, SD = 1.036) and the dissonant text with a positive emoji (N = 123, M = -.15, SD = 1.281) (p = .000), between the neutral control and the dissonant text with a negative emoji (N = 123, M = -.24, SD = 1.208) (p = .000), and between the dissonant text with a positive emoji and the dissonant text with a negative emoji (p = .000). This shows that when the sender is a male friend, the positive text coupled with a negative emoji results in decreased perceived likability of the sender compared to the negative text coupled with a positive emoji.

The comparison between the emoji-type groups displayed significant differences [$F(3, 119) = 3.135$, p = .028, $\eta_p^2 = .073$]. The pairwise comparisons for the group effect of the emoji type using a Bonferroni adjustment on perceived intelligence indicated significant difference between F_A ($N = 31$, $M = -.376$, $SD = .172$) and NF_B ($N = 30$, $M = .333$, $SD = .175$) ($p = .027$). But the pairwise difference was not significant between F_A and NF_A, F_A and F_B, NF_A and F_B, NF_A and NF_B, or F_B and NF_B ($p > .05$).

Overall Patterns Regarding the Statistically Significant Differences Between Dissonant Message Types in Terms of Intelligence

Overall, the repeated measure analyses indicate that there is a statistically significant difference between dissonant message types in terms of how intelligent the sender is perceived to be only when the sender is a female acquaintance or a male friend. In both situations, the positive text coupled with a negative emoji results in decreased perceived likability of the sender compared to the negative text coupled with a positive emoji. However, as was the case for outcome variable of likability, for all sender types the neutral control leads to greater perceptions of intelligence for the sender compared to both dissonant message types.

Effects on Emotional Connection

The repeated measure analyses indicate that there is a statistically significant difference between dissonant message types in terms of the receiver's emotional connection to the sender only when the sender is a female acquaintance or a female friend. Below are the statistically significant results supporting these findings followed by a review of key patterns:

Female Acquaintance

When the sender was a female acquaintance, the test result showed no sign of interaction between dissonance strength and emoji type ($p > .05$). The main effect of dissonance strength was significant on emotional connection [Wilks' Lambda = .767, $F(2, 118) = 17.942$, $p = .000$, $\eta_p^2 = .233$]. The pairwise comparisons for the main effect of dissonance strength using a Bonferroni adjustment on emotional connection indicated significant difference between the neutral control ($N = 123$, $M = -.89$, $SD = 1.282$) and the dissonant text with a positive emoji ($N = 123$, $M = .04$, $SD = 1.657$) ($p = .000$), between the neutral control and the dissonant text with a negative emoji ($N = 123$, $M = -.50$, $SD = 1.434$) ($p = .044$), and between the dissonant text with a positive emoji and the dissonant text with a negative emoji ($p = .000$). This shows that when the sender is a female acquaintance, the positive text coupled with a negative emoji decreases the receiver's emotional connection to the sender compared to the negative text coupled with a positive emoji. Interestingly, both dissonant conditions lead to the receiver feeling more emotionally connected to the sender than the neutral control condition. The pairwise comparisons between the emoji-type groups did not detect any significant differences ($p > .05$).

Male Acquaintance

When the sender was a male acquaintance, the test result showed no sign of interaction between dissonance strength and emoji type ($p > .05$). The main effect of dissonance strength was significant on emotional connection [Pillai's Trace = .075, $F(2, 118) = 4.797$, $p = .010$, $\eta_p^2 = .075$]. The pairwise comparisons for the main effect of dissonance strength using a

Bonferroni adjustment on emotional connection indicated significant difference between the neutral control (N = 123, M = -.43, SD = 1.160) and the dissonant text with a negative emoji (N = 123, M = -.88, SD = 1.534) (p = .013). There was not a significant difference between the dissonant text with a positive emoji and the dissonant text with a negative emoji (p > .05). The pairwise comparisons between the emoji-type groups did not detect any significant differences (p > .05).

Female Friend

When the sender was a female friend, the test result showed no sign of interaction between dissonance strength and emoji type (p > .05). The main effect of dissonance strength was significant on emotional connection [Wilks' Lambda = .900, F(2, 118) = 16.554, p = .002, η_p^2 = .100]. The pairwise comparisons for the main effect of dissonance strength using a Bonferroni adjustment on emotional connection indicated significant difference between the neutral control (N = 123, M = .88, SD = 1.191) the dissonant text with a negative emoji (N = 123, M = .37, SD = 1.393) (p = .011), as well as between the dissonant text with a positive emoji (N = 123, M = .77, SD = 1.464) and the dissonant text with a negative emoji (p = .004). This shows that when the sender is a female friend, the positive text coupled with a negative emoji decreases the receiver's emotional connection to the sender compared to the negative text coupled with a positive emoji. The pairwise comparisons between the emoji-type groups did not detect any significant differences (p > .05).

Male Friend

When the sender was a male friend, the test result showed no sign of interaction between dissonance strength and emoji type ($p > .05$). The main effect of dissonance strength was not significant on emotional connection ($p > .05$).

Overall Patterns Regarding the Statistically Significant Differences Between Dissonant Message Types in Terms of Emotional Connection

Overall, the repeated measure analyses indicate that there is a statistically significant difference between dissonant message types in terms of how emotionally connected the receiver felt to the sender when the sender is a female acquaintance or a female friend. In both situations, the positive text coupled with a negative emoji decreases the receiver's emotional connection to the sender compared to the negative text coupled with a positive emoji. All of the statistically significant mean differences described throughout this section are summarized below in *Table VI.*

Table VI: Statistically Significant Mean Differences for Tests of Dissonance Strength

Test Type	Outcome Variable	FA	MA	FF	MF
Dissonance Strength	*Likability*	P- < N+ < Θ0	P-, N+ < Θ0	P-, N+ < Θ0	P-, N+ < Θ0
	Intelligence	P- < N+ < Θ0	P-, N+ < Θ0	P-, N+ < Θ0	P- < N+ < Θ0
	Emotional Connection	Θ0 < P- < N+	P- < Θ0	P- < N+, Θ0	—

Note: Message type is listed before emoji type. Θ = Neutral Message, N = Negative Message, P = Positive Message, 0 = No Emoji, - = Negative Emoji, + = Positive Emoji, FA = Female Acquaintance, MA = Male Acquaintance, FF = Female Friend, MF = Male Friend

Facial Versus Non-Facial Emojis – RQ_2

To understand if there is a difference between emoji types (facial versus non-facial) in terms of the emojis' effects on perceived likability of the sender, perceived intelligence of the sender, and the receiver's emotional connection to the sender, RQ_2 was examined throughout the study with each main hypothesis test. Although direct comparisons were not made between conditions, the following is a discussion of the patterns that emerged across conditions.

Overall, the use of facial emojis compared to non-facial emojis did not reliably affect perceptions of sender in statistically significant ways. The instances in which statistically significant differences presented themselves were during the examination of emoji valence and emoji alignment. Interestingly, however, these differences occurred primarily when the sender was a male friend – and only in regard to likability or emotional connection, never intelligence. Whenever comparison between emoji-type groups displayed significant differences, the mean of *Facial Emoji Group A* (F_A), which was exposed to stimulus material with facial emojis and positive emojis presented before negative emojis, was always statistically lower than whichever group or groups it differed significantly from – usually *Non-Facial Emoji Group A* (NF_A) or *Non-Facial Emoji Group B* (NF_B). These were the only detectable patterns of difference related to emoji type.

Sender Type – RQ_3

To explore the potential boundary condition of sender type, including the sender's gender and relationship to the receiver, in terms of its effects on perceived likability of the sender, perceived intelligence of the sender, and the receiver's emotional connection to the sender, RQ_3 was examined throughout the study with each main hypothesis test. Again, although direct comparisons were not made

between conditions, the following is a discussion of the patterns that emerged across conditions.

Overall, the sender's relationship to the receiver and certainly the sender's gender both appear to be important moderators of how a receiver perceives the sender in relation to his or her emoji usage. In neutral text conditions, gender plays a seemingly dominant role in moderating whether the use of positive emoji leads to increases in the perceived likability and intelligence of the sender, as well as the receiver's emotional connection to the sender. Identical patterns of perceived likability and emotional connection are seen among sender types according to gender for neutral, positive, and negative message conditions. The sender's relationship to the receiver also created patterns of how a receiver perceives the sender in relation to his or her emoji usage – specifically when the sender was a male acquaintance or a female friend. The following chapter explores the possible meaning behind these findings, as well as the practical and theoretical implications nested within the study's results. For a review of the study's hypotheses and research questions, see *Table VII* below.

Table VII: Summary of Hypotheses and Research Questions

Hypotheses	Outcome
H_1: The valence of an emoji in a neutral text will affect the receiver's perceptions of the sender.	
H_{1a}: The valence of an emoji in a neutral text will affect the perceived likability of the sender.	Supported
H_{1b}: The valence of an emoji in a neutral message will affect the perceived intelligence of the sender.	Supported
H_{1c}: The valence of an emoji in a neutral message will affect the receiver's emotional connection to the sender.	Partially Supported
H_2: When the text is positive, consonant usage of emojis will have a more positive outcome compared to dissonant usage of emojis.	
H_{2a}: When the text is positive, consonant usage of emojis will increase the perceived likability of the sender compared to dissonant usage of emojis.	Supported
H_{2b}: When the text is positive, consonant usage of emojis will increase the perceived intelligence of the sender compared to dissonant usage of emojis.	Supported
H_{2c}: When the text is positive, consonant usage of emojis will increase the receiver's emotional connection to the sender compared to dissonant usage of emojis.	Supported
H_3: When the text is negative, consonant usage of emojis will have a more negative outcome compared to dissonant usage of emojis.	
H_{3a}: When the text is negative, consonant usage of emojis will decrease the perceived likability of the sender compared to dissonant usage of emojis.	Partially Supported
H_{3b}: When the text is negative, consonant usage of emojis will decrease the perceived intelligence of the sender compared to dissonant usage of emojis.	Partially Supported
H_{3c}: When the text is negative, consonant usage of emojis will decrease the receiver's emotional connection to the sender compared to dissonant usage of emojis.	Partially Supported

Research Questions

RQ_1: Is there a statistically significant difference between dissonant message types (i.e. a negative message with a positive emoji compared to a positive message with a negative emoji) in terms of the perceived likability of the sender, the perceived intelligence of the sender, and/or the receiver's emotional connection to the sender?

RQ_2: Is there a difference between emoji types (facial versus non-facial) in terms of the emojis' effects on the perceived likability of the sender, the perceived intelligence of the sender, and the receiver's emotional connection to the sender?

RQ_3: Is there a difference between sender types (female acquaintance, male acquaintance, female friend, and male friend) in terms of the senders' effects on how likable the receiver perceives the specified sender to be, how intelligent the receiver perceives the specified sender to be, and how emotionally connected the receiver feels to the specified sender?

Chapter 7
Discussion

The present study examined the effects of emoji valence, emoji type, emoji alignment, and sender type on perceptions of the sender to extend current research beyond emoticons, workplace exchanges, and examinations of message affect and focus empirically on the effectiveness of emojis in enabling impression management in cue-impoverished, text-based digital environments. The findings suggest that emojis are far from inconsequential when it comes to social perception – and can both increase and decrease perceived likability, intelligence, and emotional connection. The sender's gender and relationship to the receiver, however, appear to be important moderators of what is perceived as acceptable for the digital affect display enabled via emojis.

Emoji Valence and Gender-Differentiated Emotion Display

In examining the effects of emoji valence on the receiver's perception of the sender, a few intriguing patterns emerged. The first was a clear gender effect in regard to how positive emoji usage in a neutral message either increases or decreases the perceived likability of the sender compared to the use of no emoji. For female sender types, adding a positive emoji to a neutral message amplifies how likable the receiver perceives her to be. However, the opposite is true for male sender types. If the sender is a male acquaintance or male friend, adding a positive emoji to a neutral message actually decreases how likable the receiver perceives him to be compared to if he uses no emoji. This finding indicates that the small but significant gender differences in Western emotion display, with women culturally

being permitted to show greater emotional expressivity, especially for positive emotions, appear to transfer to digital environments (Chaplin, 2014). There are two key implications associated with this finding – one practical and one theoretical. Practically, understanding how positive emoji use in neutral messages increases perceived likability for female sender types but decreases perceived likability for male sender types enables senders to tailor their emoji usage based on their desired outcomes for the communication exchange. But, most powerfully, this finding and its alignment with the gender differences in emotion display present in face-to-face interactions supports the central assumption of social information processing theory that computer-mediated communication mirrors face-to-face communication (Lo, 2008; Walther, 2011). It is also supported by the central concept of the human-computer interaction (HCI) perspective, which recognizes that users respond to computers socially and use the same social heuristics as they would apply in tradition interpersonal communication – meaning that common interpersonal communication phenomena are generalizable to users' interactions with and via computers (Waddell, Zhang, & Sundar, 2015). The transfer of emotion display norms from face-to-face communication environments to digital environments observed in this study suggests that there are important parallels between face-to-face and computer-mediated communication, which should continue to be explored in order to contribute to a more robust understanding of both. In fact, if humans respond to each other via computer-based interfaces according to predictable rules of human interaction, as social information processing theory and human-computer interaction perspective suggest they do, the study of these digital interactions can, in reverse, advance our understanding of interpersonal communication occurring face-to-face. Just as prior findings from interpersonal communication research have direct utility for understanding new digital technologies, these digital technologies can also inform our understanding of interpersonal communication at large –

whether face-to-face or computer-mediated. In other words, studies of human interaction via computer-mediated platforms can serve as a novel and important window into more fully understanding interpersonal communication and social perception as a whole with implications for maturing existing interpersonal communication and social perception research and illuminating best-practices for impression management digitally and in person.

The second compelling finding, related to these patterns of perceived likability, is that likability does not appear to affect emotional connection in as linear of a way as social perception research suggests. As discussed, research on social perception firmly establishes that people are judged almost entirely by others according to two key constructs: warmth and competence (Fiske et al., 2007). Likability and emotional connection are categorized together as key elements of perceptions of warmth, while intelligence is categorized as a key element of assessing competence. Again, warmth is understood as being judged before competence and carrying more weight in emotional and behavioral reactions. What was interesting about the study's examination of emoji valence is that although the effects of emoji valence on perceptions of the sender's likability and on how emotionally connected the receiver felt to the sender were related, and often moved in the same direction, this wasn't always the case. For example, although the findings indicate that using a positive emoji in a neutral message actually decreases perceptions of likability for male sender types, the research simultaneously shows that if the sender is a male friend, using a positive emoji in a neutral message actually simultaneously increases how emotionally connected the receiver feels to him. In other words, a decrease in how likable the receiver perceives the sender to be doesn't necessarily equate to a decrease in how emotionally connected the receiver feels to the sender. In fact, the two can move in separate directions. This raises the question as to which carries more weight in social perception overall.

Even though they both contribute to warmth perception, is one more important than the other in shaping emotional and behavioral responses? Social perception research doesn't currently compare the two dimensions in terms of their weight in how people judge one another – but answering this question would inform to a greater extent the implications of emojis' varying effects on these dimensions and should be examined further, especially given the relationship discussed above regarding the ways in which understanding digital communication can inform our understanding of interpersonal communication at large.

Another intriguing pattern, related to perceptions of intelligence, emerged in examining how emoji valence affects the receiver's perceptions of the sender. The study showed that for all sender types using a positive or negative emoji in a neutral text either decreases or doesn't significantly affect how intelligent the receiver perceives the sender to be compared to using no emoji. In other words, using an emoji in a neutral text never increases the sender's perceived intelligence compared to using no emoji. This finding is interesting for two reasons. First, it demonstrates that emoji usage does in fact affect perceptions of intelligence. This is significant because it means that emojis influence both warmth and competence judgments – the two cornerstones of social perception. Second, the direction of the effect indicates that competence judgments might be primarily influenced by or are at least more responsive to negativity than positivity – or perhaps that negative perceptions of competence are more readily formed than positive ones. This pattern persists across neutral and positive message types in the study and deserves further examination to more deeply understand how competence judgments are formed and influenced.

Overall, the study's examination of emoji valence and its effects on perceptions of the sender indicates that emojis change perceptions of the sender when the text is neutral – with likability and emotional connection being most

influenced by positive emoji use. This is significant because it shows that the effects of emojis are not simply isolated to message interpretation but also extend to perceptions of the sender. What this means is that emojis serve as meaningful social cues that shape how the sender is perceived by the receiver and are important digital tools for impression management.

Emoji Alignment, Social Expectations, and How Emojis Positively and Negatively Violate Expectancy

An interesting pattern regarding the male acquaintance sender type arose during the study's examination of the effects of emoji alignment in positive text on perceptions of the sender. Curiously, although the results did not demonstrate outstanding sender effects (in the sense that small differences for certain outcome variable were observed between sender types but the overall direction of the effect was the same), these differences consistently occurred when the sender was a male acquaintance. When the text was positive, using a positive emoji increased perceived likability and emotional connection for all sender types except the male acquaintance compared to using no emoji. For the male acquaintance, the use of a positive emoji in a positive text did not have a significant effect on likability or emotional connection compared to no emoji. Why does positive emoji use have no effect on positive perception (specifically related to likability and emotional connection) for male acquaintances when it does for all other sender types, including the male friend? This question might be best answered in relation to another interesting pattern that arose during the study regarding the female friend sender type.

Across the neutral, positive and negative message conditions, a consistent pattern emerged. When the sender was a female friend, a positive emoji always led

to more positive outcomes regarding likability and emotional connection than no emoji, which always led to more positive outcomes regarding likability and emotional connection than a negative emoji. This relationship (positive emoji > no emoji > negative emoji) persisted across message types when the sender was a female friend, even when other sender types were not affected in such a linear and projected way. What this pattern demonstrated over the course of the study was that positive emoji use has a significantly positive effect, specifically related to likability and emotional connection, on social perception for female friends, and negative emoji use has a significantly negative effect on social perception when the same is not consistently true for other sender types. So why does using a positive emoji not have a significant effect on positive perceptions of likability and emotional connection for male acquaintances compared to not using an emoji, when positive emoji use consistently increases perceptions of likability and emotional connection for female friends compared to not using an emoji? The answer to this is informed by research on emotion display, as well as channel expansion theory and expectancy violation theory (EVT) – which is a communication theory focused on how individuals respond to unanticipated violations of social norms and expectations that will be discussed in more depth below (Rui & Stefanone, 2018). The first two outline critical expectations that govern social perception, while the last explains the implications of those expectations.

Although the important gender difference in positive emotion display discussed in relation to emoji valence above was framed as the result of women culturally being permitted to show greater emotional expressivity, especially for positive emotion (Chaplin, 2014), emotion display research also conceives of this difference in another way – as a requirement rather than a liberty. Research on positive emotion display indicates that norms for expression of positive emotion are

gender-differentiated in that women are particularly required to express positive emotion toward others (Stoppard & Gruchy, 1993). In other words, positive emotion display is a requirement for women in Western culture. Through this lens, positive emotional expressivity is an expectation for women rather than an allowance. This differentiation is important, because it classifies positive emotion display as a performance women must sustain to satisfy a social role – which reinforces the role of emojis in allowing users to perform this required emotion work digitally (Riordan, 2017) and helps explain the gender differences in emoji use with women using emojis more frequently than men. But what explains why a sender who is a male acquaintance appears to be on the opposite end of the spectrum of 'how significantly positive emoji use affects perceived likability and emotional connection' as a sender who is a female friend? Emotion display research explains the difference in gender positions on this spectrum, but channel expansion theory explains how the sender's relationship to the receiver, i.e. familiarity, is also an important factor in this positioning.

As discussed, gender moderates the degree of expressivity expected from a communication partner, with women being expected to show greater emotional expressivity for positive emotions. But channel expansion theory helps explain why the sender's relationship to the receiver is also significant. According to channel expansion theory, familiarity with an interaction partner is an important moderator of how expressive a communication partner is expected to be via a particular medium (Lo, 2008; Walther, 2011). In other words, friends are conceivably expected to be more expressive than acquaintances. Ultimately, male acquaintances and female friends form two poles on the spectrum of required positive affect display because of the interaction between gender-differentiated norms for expression of positive emotion and relationship-differentiated norms for expressivity. However, while emotion display research and channel expansion

theory help map the expectations that govern social interactions, expectancy violation theory is essential for explaining their ultimate implications. This theory answers the question as to why these patterns of expectation translate to corresponding patterns of social perception – but also why perceptions of likability and emotional connection consistently show this pattern over perceptions of intelligence.

Expectancy violation theory posits that our expectations for how others should behave during interactions are critical to human communication and impression management. According to the theory, people have developed expectation for how others should communicate with them – and any violation of this expectation triggers emotional arousal that results in a positive or negative perception (Rui & Stefanone, 2018). The theory has been applied to a wide range of interpersonal contexts, including nonverbal interaction and computer-mediated communication – and can also be extended to impression management via emojis. Ultimately, expectancy violation theory helps explain why when women are expected to express positive emotion toward others and friends are expected to be more emotionally expressive than acquaintances, for female friends especially, the use of positive emojis helps fulfill or positively exceed this expectation compared to not using an emoji – resulting in an increase in the receiver's emotional arousal and positive perception of the sender. In reverse, the use of negative emojis by female friends violates to the greatest extent the expectation for expressivity of positive emotions, resulting in the pattern observed consistently throughout the study with negative emoji use by female friends leading to significant decreases in perceptions of likability and emotional connection. Likewise, when men aren't socially expected to express positive emotion toward others and acquaintances aren't expected to be emotionally expressive, a sender who is a male acquaintance is likely better off using no emoji rather than a positive emoji, which was observed

in the neutral text condition. However, when a person's expectancy is violated, he or she is prompted to understand the violation by turning to communicator characteristics, relational features, and communication contexts to evaluate whether the violation is positive or negative. This perceptive process is what makes the relational feature of familiarity – i.e. acquaintance versus friend – an important heuristic. Violations better than expectancy are evaluated as positive and often cause positive communication outcomes, while violations that are negative usually predict negative outcomes (Rui & Stefanone, 2018). For this reason, social perceptions of male acquaintances should be negatively affected or least positively affected by positive emoji use compared to male friends, female acquaintances, and female friends progressively – which was observed in the study. Overall, emotion display research, channel expansion theory, and social expectancy theory offer theoretical foundations for building an understanding of the present study's findings upon. This study also borrows from another communication theory, social judgment theory, to suggest that just as latitudes of rejection, acceptance, and noncommitment exist for what people think is generally acceptable or unacceptable for other people's views (Matthew, 2019), similar latitudes could underlie how people process what is acceptable or unacceptable for the social behaviors of others. In other words, social expectations may be best conceptualized as zones rather than single points on a continuum. These latitudes or thresholds would help explain the observed absence of significant difference between certain conditions, especially when the sender is a male acquaintance, but also when the sender is a male friend, and should be examined further. In summary, humans desire to be perceived positively and maintain favorable images. Continuing to detect and understand the boundaries of social expectations will guide how to most effectively navigate these expectations digitally and in person in a way that either leads to positive perception or at least avoids negative expectancy violation.

Dissonance Strength and Emojis as a Frame for Social Perception

The study's unique examination of whether there is a statistically significant difference between dissonant message types (i.e. a negative message with a positive emoji compared to a positive message with a negative emoji) in terms of the perceived likability of the sender, the perceived intelligence of the sender, or the receiver's emotional connection to the sender also revealed interesting patterns of how a receiver perceives the sender in relation to his or her emoji usage according to the sender and receiver's relationship. Interestingly, when dissonant message types were compared in terms of their effect on social perception and significant differences were detected, a positive message with a negative emoji always led to diminished positive social perception compared to a negative message with a positive emoji. This finding mirrors a pattern observed throughout the study overall, where using a positive emoji is always better for positive social perception than using a negative emoji. While statistically significant differences didn't always exist across outcome variables between a positive emoji and no emoji or between a negative emoji and no emoji during the study, the most consistent pattern was the statistically significant difference between a positive emoji and a negative emoji on social perception. This finding hints at the importance, but also the effectiveness, of positive affect display compared to negative affect display in developing positive impressions and continues to reinforce the value of emojis in allowing users to develop these positive impressions online. In fact, this lends empirical support to why the most popularly used emojis are positive rather than negative (Novak et al. 2015). If being perceived positively and maintaining positive impressions is an innate human drive, positive emojis would logically be used more frequently than negative emojis in digital communication as a means to fulfill this need – which is

the case. With this being said, emojis operate within specific boundaries – which were revealed and reinforced throughout the study, including the study's comparison of dissonant message types. An insight revealed by this examination is that the presence of emojis in dissonant messages appears to change the intensity of perception but not the direction. In other words, positive emojis allow specific senders of negative messages to be perceived less negatively and negative emojis lead senders of positive messages to be perceived less positively, but they generally do not change the direction of perception from negative to positive or vice versa. The sender's relationship to the receiver, on the other hand, seems to moderate the direction of perception. When the sender of a dissonant messages is an acquaintance, the message is perceived as negative overall. However, the opposite is true when the sender is a friend. Again, this illuminates the importance of relational features in moderating the valence of perception when dissonance exists (both between verbal and nonverbal cues and between the receiver's expectancy compared to a sender's actual communication behavior), as proposed by expectancy violation theory. Within the boundaries of these relational features, however, emojis provide an interpretive frame for perceptions of the sender – and a significant portion of the present study's value is derived from its novel examination of the ways in which emoji usage influences the receiver's impressions of the sender, rather than the receiver's impressions of message content alone.

This study is significant because it moves beyond narrowly focused examinations of how message content is interpreted when emojis are present and prioritizes understanding the bigger picture of what emoji usage means for the humans using them. It focuses on the critical, human-specific implications of emoji use – specifically in terms of social perception and impression management. The study shows that emojis do in fact play an important role in influencing how the

sender is perceived – both in terms of warmth and competence, which are the fundamental dimensions of how people are judged socially. Overall, the study indicates that a person can increase his or her perceived likability, perceived intelligence, and how emotionally connected the receiver feels to him or her through conscious decisions regarding emoji use – especially in terms of emoji valence and emoji matching. Emoji type doesn't appear to significantly affect social perception, especially regarding judgments of intelligence. This indicates that in digital environments, symbols of objects can arouse similar levels of emotional connection, perceived likability, and perceived intelligence as symbols resembling the human face, which is an interesting insight both for theorists and for technical designers. A key practical take away from the study is that in digital exchanges between friends and acquaintances, positive emojis, regardless of whether they are facial or non-facial, can be used to form positive perceptions, especially related to warmth and compared to negative emojis. In addition to empirically enhancing our understanding of how emojis affect perceptions of the sender, the study offers a unique window into the ways in which relational attributes and gender interplay to create patterns of social acceptance for digital emotion display. The study describes how emojis operate within gender- and relationship-specific boundaries, which are imbued with expectations that govern the positive and negative effects of emojis on social perception – and proposes a new lens through which to perceive social expectations. It also highlights the parallels between computer-mediated and face-to-face communication. Of course, as is the case in non-computer-mediated environments, social norms and perceptions are culture-bound – meaning the scope of this study is limited by the Western emotion display norms it describes. Further research is needed to understand how culture as well as the receiver's attributes might moderate the

effects observed. The following section discusses the study's limitations and opportunities for future research.

Limitations and Opportunities for Future Research

Although the current study forms an important human-centric starting point from which to begin exploring the implications of emoji use, especially in regard to social perception and impression management, it is not without limitations. The study's greatest limitation was its sample size, which did not adequately allow for covariate analysis across the four groups to control for or examine the effects of the receiver's age, gender, ethnicity, phone type, frequency of emoji use, U.S. citizenship, or even personality, which were all measured via the instrument. The main problem arose when presentation order effects were discovered, meaning the four groups of roughly thirty participants could not be merged into two large groups. This unanticipated result ultimately limited the types of statistical analysis that could be conducted. However, future research using the same experimental framework but a larger sample size, can examine the variables listed above.

Another limitation of the study is the possibility that individual interpretations existed for each participant within the specified relationship manipulation, and that simply observing a message rather than being an actual recipient could have influenced the study's results. With that being said, the stimulus images were direct copies of iPhone messages as they would appear to the sender if the exchanges were real to support the study's validity. Additionally, there was a concern about the potential lack of balance in the valence of emojis used throughout the stimulus material. This concern was focused on the two negative emojis employed during the study and whether the angry face emoji was an adequate counterpart to the middle finger emoji. Lack of statistically significant differences among the emoji type groups for negative conditions, however,

mitigated this concern. Finally, the present study only employed four emojis rendered in Apple font although thousands of emojis exist and renderings vary across platforms. To extend the scope of the study, however, the emojis were categorized as negative and positive, as well as facial and non-facial.

Future research can include a more robust body of emojis and can assess how perceptions of the sender are affected by renderings across viewing platforms. Future studies can also explore if and how the number of emojis used in a text message affect the perceptions of the sender. Finally, future studies can analyze additional relationship manipulations – for example partner, i.e. boyfriend, girlfriend, spouse. All-in-all, the present study proposes plenty of opportunities for future research. Most importantly, it offers a valuable starting point for the extension of existing interpersonal and computer-mediated communication research and theories into the uncharted realms of digital emotion display and emoji-influence social perception. The study shows that emojis play a significant role in shaping the perceptions of warmth and competence that account almost entirely for how people are socially judged. But it also highlights the ways in which relational attributes and gender moderate these perceptions. Beyond proposing practical insights for emoji use (such as advising against the use of negative emojis and recommending the use of positive emojis, especially for senders who are females or friends of the recipient, as a means of increasing one's perceived likability and eliciting emotional connection), this study provides researchers with theoretical stepping stones from which research on emojis and digital impression management can and must progress. The ability to positively shape social perception is a critical antecedent of the interpersonal relationships that support daily life. Understanding its transition to digital environments and how to best sustain it will be fundamental for the relationship development and maintenance that is essential to our survival.

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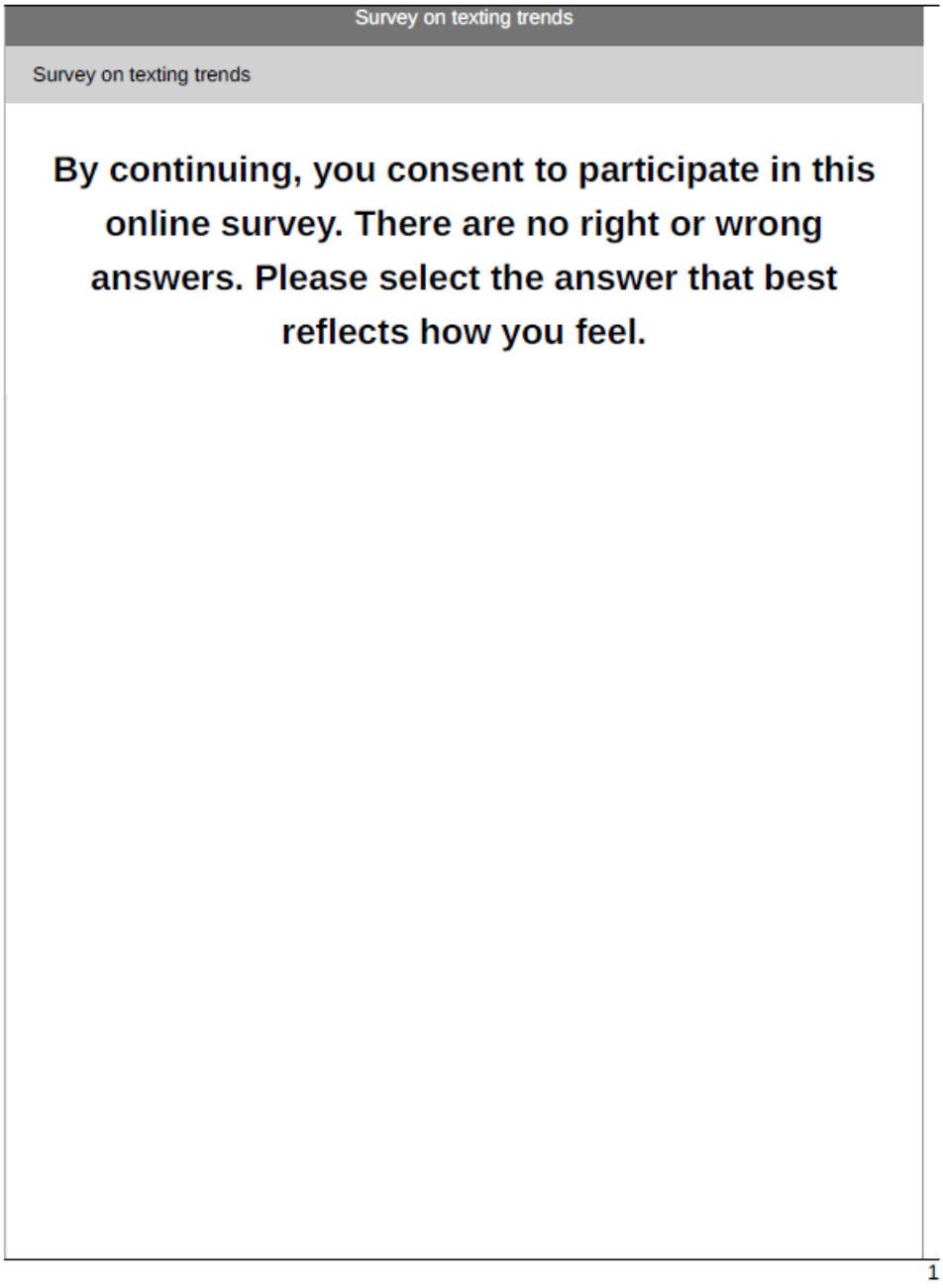
Appendix A

Online Instrument



Survey on texting trends

1. Imagine you receive the following text from an **acquaintance**—*a person who you have met before but do not know well*—who is **female.**

* 1. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

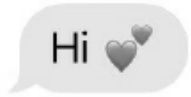
2. Imagine you receive the following text from an **acquaintance**—*a person who you have met before but do not know well*—who is **female.**

2

* 2. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

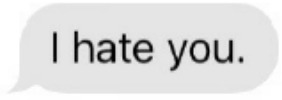
3. Imagine you receive the following text from an **acquaintance**—*a person who you have met before but do not know well*—who is **female.**



* 3. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

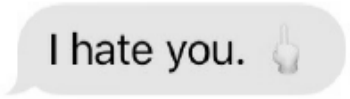
4. Imagine you receive the following text from an **acquaintance**—*a person who you have met before but do not know well*—who is **female.**



* 4. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

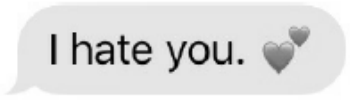
5. Imagine you receive the following text from an **acquaintance**—*a person who you have met before but do not know well*—who is **female.**



* 5. Please select the answer that best reflects how you feel.

	Strongly Agree	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree	Strongly Disagree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

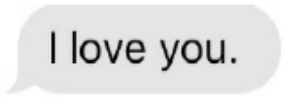
6. Imagine you receive the following text from an **acquaintance**—*a person who you have met before but do not know well*—who is **female.**



* 6. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

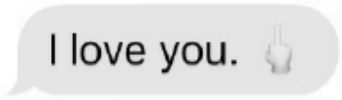
7. Imagine you receive the following text from an **acquaintance**—*a person who you have met before but do not know well*—who is **female.**



* 7. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

8. Imagine you receive the following text from an **acquaintance**—*a person who you have met before but do not know well*—who is **female.**

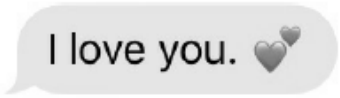


5

* 8. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

9. Imagine you receive the following text from an **acquaintance**—*a person who you have met before but do not know well*—who is **female.**



* 9. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

Survey on texting trends

10. Imagine you receive the following text from an **acquaintance**—*a person who you have met before but do not know well*—who is **male.**

* 10. Please select the answer that best reflects how you feel.

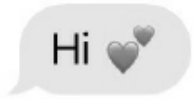
	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

11. Imagine you receive the following text from an **acquaintance**—*a person who you have met before but do not know well*—who is **male.**

* 11. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

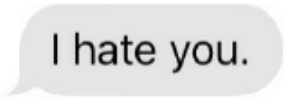
12. Imagine you receive the following text from an **acquaintance**—*a person who you have met before but do not know well*—who is **male.**



* 12. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

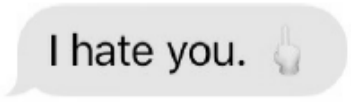
13. Imagine you receive the following text from an **acquaintance**—*a person who you have met before but do not know well*—who is **male.**



* 13. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

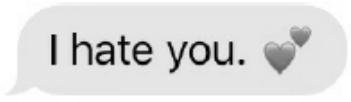
14. Imagine you receive the following text from an **acquaintance**—*a person who you have met before but do not know well*—who is **male.**



* 14. Please select the answer that best reflects how you feel.

	Strongly Agree	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree	Strongly Disagree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

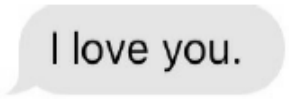
15. Imagine you receive the following text from an **acquaintance**—*a person who you have met before but do not know well*—who is **male.**



* 15. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

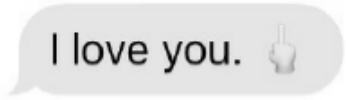
16. Imagine you receive the following text from an **acquaintance**—*a person who you have met before but do not know well*—who is **male.**



* 16. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

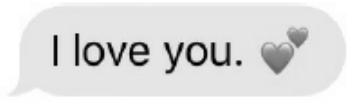
17. Imagine you receive the following text from an **acquaintance**—*a person who you have met before but do not know well*—who is **male.**



* 17. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

18. Imagine you receive the following text from an **acquaintance**—*a person who you have met before but do not know well*—who is **male.**



* 18. Please select the answer that best reflects how you feel.

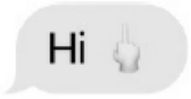
	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

19. Imagine you receive the following text from a **friend**—*a person who you like and enjoy being with*—who is **female.**

* 19. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

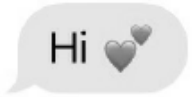
20. Imagine you receive the following text from a **friend**—*a person who you like and enjoy being with*—who is **female.**



* 20. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

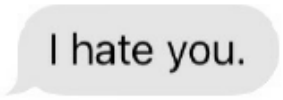
21. Imagine you receive the following text from a **friend**—*a person who you like and enjoy being with*—who is **female.**



* 21. Please select the answer that best reflects how you feel.

	Strongly Agree	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree	Strongly Disagree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

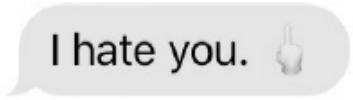
22. Imagine you receive the following text from a **friend**—*a person who you like and enjoy being with*—who is **female.**



* 22. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

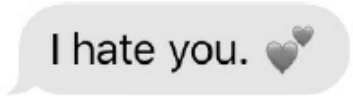
23. Imagine you receive the following text from a **friend**—*a person who you like and enjoy being with*—who is **female.**



* 23. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

24. Imagine you receive the following text from a **friend**—*a person who you like and enjoy being with*—who is **female.**



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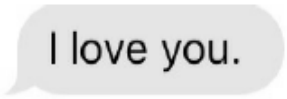
* 24. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

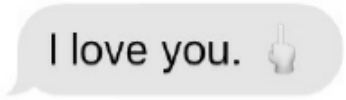
25. Imagine you receive the following text from a **friend**—*a person who you like and enjoy being with*—who is **female.**



* 25. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

26. Imagine you receive the following text from a **friend**—*a person who you like and enjoy being with*—who is **female.**



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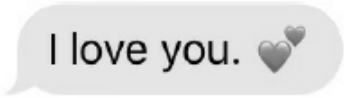
* 26. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

27. Imagine you receive the following text from a **friend**—*a person who you like and enjoy being with*—who is **female.**



* 27. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

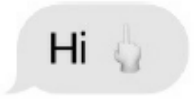
Survey on texting trends

28. Imagine you receive the following text from a **friend**—*a person who you like and enjoy being with*—who is **male.**

* 28. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

29. Imagine you receive the following text from a **friend**—*a person who you like and enjoy being with*—who is **male.**



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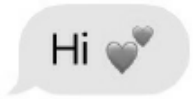
* 29. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

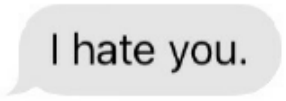
30. Imagine you receive the following text from a **friend**—*a person who you like and enjoy being with*—who is **male.**



* 30. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

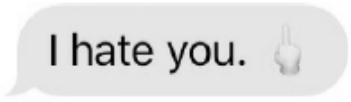
31. Imagine you receive the following text from a **friend**—*a person who you like and enjoy being with*—who is **male.**



* 31. Please select the answer that best reflects how you feel.

	Strongly Agree	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree	Strongly Disagree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

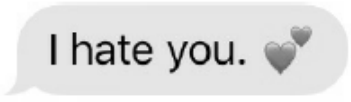
32. Imagine you receive the following text from a **friend**—*a person who you like and enjoy being with*—who is **male.**



* 32. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

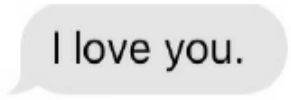
33. Imagine you receive the following text from a **friend**—*a person who you like and enjoy being with*—who is **male.**



* 33. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

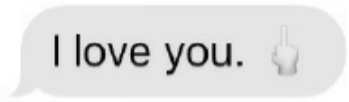
34. Imagine you receive the following text from a **friend**—*a person who you like and enjoy being with*—who is **male.**



* 34. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

35. Imagine you receive the following text from a **friend**—*a person who you like and enjoy being with*—who is **male.**



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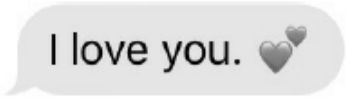
* 35. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

36. Imagine you receive the following text from a **friend**—*a person who you like and enjoy being with*—who is **male.**



* 36. Please select the answer that best reflects how you feel.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
The sender of the text message is likable.	○	○	○	○	○	○	○
The sender of the text message is intelligent.	○	○	○	○	○	○	○
I feel an emotional connection with the sender of the text message.	○	○	○	○	○	○	○

Survey on texting trends

* 37. Do you own a smartphone?

- Yes
- No

* 38. If yes, what kind of smartphone do you use?

- iPhone
- Android
- Other (please specify)

* 39. How often do you use emojis in text messages?

Never	Very Rarely	Rarely	Unsure	Occassionally	Very Frequently	Always
○	○	○	○	○	○	○

* 40. How many emojis on average do you use in a single text?

- 0
- 1-2
- 3-5
- 6-8
- 9 or above

* 41. How many **different** emojis on average do you use in a day?

- 0-5
- 6-10
- 11-15
- 16-20
- More than 20

* 42. Which of the following platforms do you use emojis in? Check all that apply.

- [ ] iMessage
- [ ] WhatsApp
- [ ] Android messenger, Google Messages app, Google Hangouts, and/or Gmail
- [ ] Samsung
- [ ] Facebook and/or Facebook Messenger
- [ ] Other (please specify)
- [ ] Microsoft
- [ ] Twitter
- [ ] Snapchat
- [ ] Instagram

* 43. Do you use an emoji app or just the pre-installed in-app emojis (e.g. iPhone, Facebook, WhatsApp)?

- ( ) Downloaded emoji app
- ( ) In-app emojis
- ( ) Other (please specify)

* 44. Who do you use emojis with? Choose all that apply.

- [ ] Strangers
- [ ] Acquaintances
- [ ] Co-workers
- [ ] Other (please specify)
- [ ] Friends
- [ ] Boyfriend/Girlfriend/Spouse
- [ ] Family members

* 45. What do you believe are people's intentions for using emojis? Choose all that apply.

- [ ] To express emotion
- [ ] To clarify the meaning of the message
- [ ] To emphasize the meaning of the message
- [ ] To signal that your text has a different nuance
- [ ] To enhance intimacy with the message receiver
- [ ] Because I feel too lazy to type in text
- [ ] Other (please specify)
- [ ] Because I feel too busy to type in text
- [ ] Because I don't know how to respond
- [ ] To end the conversation
- [ ] For fun
- [ ] No reason (Because they are there.)

* 46. What gender do you identify with?

- Male
- Female
- Prefer not to answer

* 47. Age

* 48. Are you a citizen of the United States?

- Yes
- No

49. If you are **not** a citizen of the United States, have you been living in the United States for 10 years or more?

- Yes
- No

* 50. Race:

- Caucasian or white
- African American
- Other (please specify)
- Hispanic
- Asian

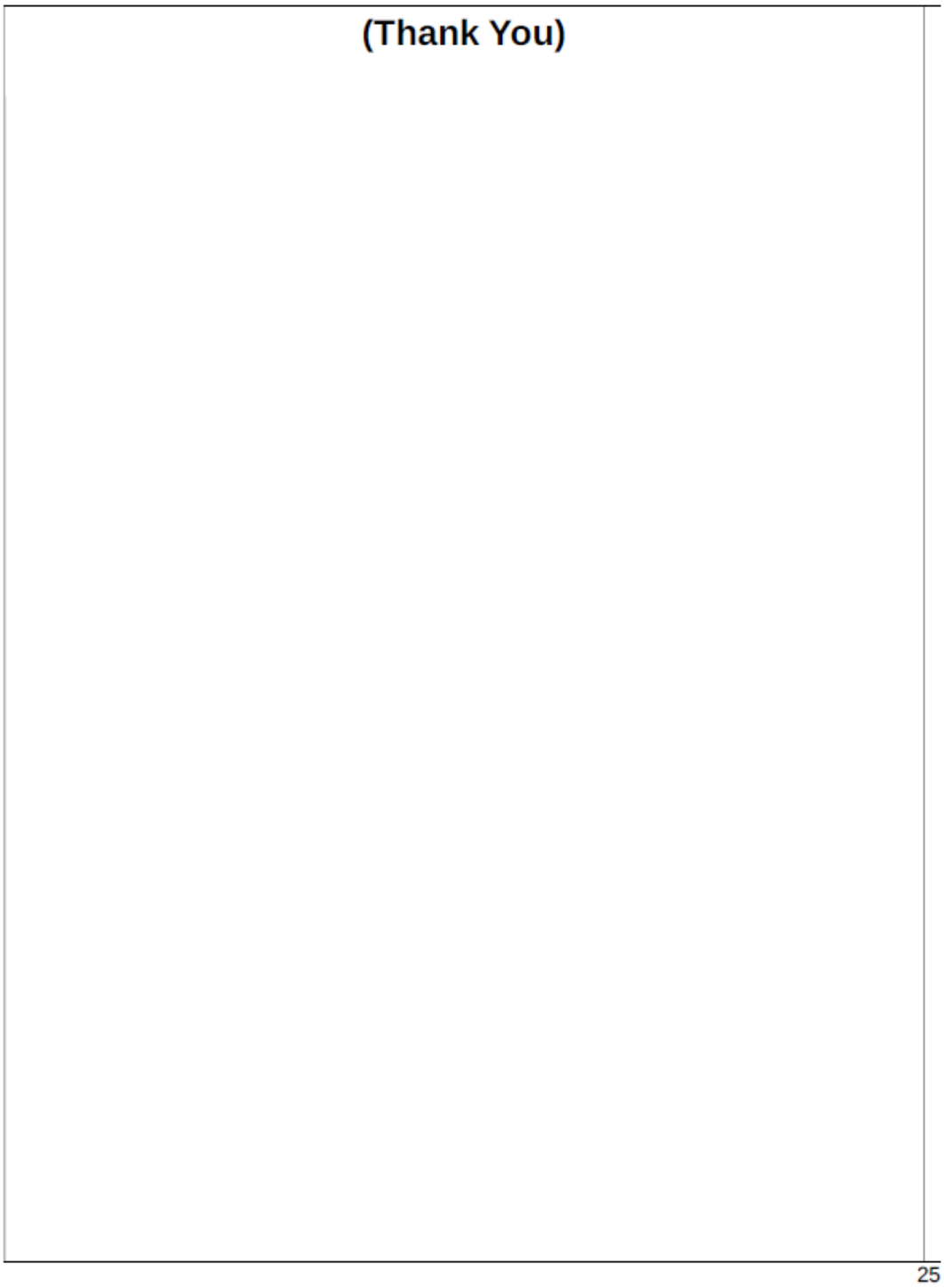
* 51. Your occupation:

* 52. Your education level:

- High school graduate or less
- Some college
- College Graduate
- Graduate school or above

* 53. Which of the following most accurately describes your major?

- Engineering
- Communication
- Aeronautics
- Business
- Other (please specify)
- Psychology
- Humanities
- Biology
- Computer Science


(Thank You)
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Appendix B

Comparison of Significant Mean Differences Across Conditions

Test Type		Outcome Variable	FA	MA	FF	MF
Valence		*Likability*	Θ- < Θ0 < Θ+	Θ- < Θ+ < Θ0	Θ- < Θ0 < Θ+ *(Fa)* Θ- < Θ0, Θ+ *(Fb)* Θ-, Θ0 < Θ+ *(NFa)* Θ- < Θ+ *(NFb)*	Θ- < Θ0 **Significant group difference (Fa<NFa)*
		Intelligence	Θ- < *Θ0, Θ+* **No significant effect for Fa*	Θ- < Θ+ < Θ0	Θ- < Θ0	Θ- < Θ0
		Emotional Connection	Θ0, Θ- < Θ+	—	Θ- < Θ0 < Θ+	Θ-, Θ0 < Θ+ **Significant group difference (Fa<NFa, Fb, NFb)*
Emoji Alignment	***Text (+)***	*Likability*	P- < P0 < P+	*P- < P+, P0*	P- < P0 < P+	P- < P0 < P+
		Intelligence	P- < P0, P+	P- < P0, P+	P- < P0, P+	P- < P0, P+
		Emotional Connection	P- < P0 < P+	P- < P0, P+	P- < P0 < P+	P- < P0 < P+ **Significant group difference (Fa<NFb)*
	Text (-)	*Likability*	*N-, N0* < N+ *(Fa and NFa)* N0 < *N-, N+ (Fb and NFb)*	N-, N0 < N+ *(Fa and NFa)* **No significant effect for Fb or NFb*	N- < N0 < N+ **Significant group difference (Fa<NFb)*	N-, N0 < N+ **Significant group difference (Fa<NFb)*
		Intelligence	N0 < N-, N+	—	N- < N0 < N+	—
		Emotional Connection	N0, N- < N+ *(NFa)* N0 < N+ *(NFb)* **No significant effect for Fa or Fb*	—	N- < N0 < N+ **Significant group difference (Fa<NFb)*	N-, N0 < N+ (NFa) **No significant effect for Fa, Fb, or NFb*
Dissonance Strength		*Likability*	P- < N+ < Θ0	P-, N+ < Θ0	P-, N+ < Θ0	P-, N+ < Θ0
		Intelligence	P- < N+ < Θ0	P-, N+ < Θ0	P-, N+ < Θ0	P- < N+ < Θ0
		Emotional Connection	Θ0 < P- < N+	P- < Θ0	P- < N+, Θ0	—

Note: Message type is listed before emoji type. Θ = Neutral Message, N = Negative Message, P = Positive Message, 0 = No Emoji, - = Negative Emoji, + = Positive Emoji

Appendix C

Means Tables

Emoji Valence								
Female Acquaintance		**Neutral Text, No Emoji**			**Neutral Text, Positive Emoji**		**Neutral Text, Negative Emoji**	
		n	*M*	*SD*	*M*	*SD*	*M*	*SD*
Likability	F_A	31	0.55	0.85	0.61	1.174	-1.03	1.11
	NF_A	32	0.38	0.871	1.06	1.134	-1.34	1.516
	F_B	30	0.5	0.9	0.9	1.185	-1.5	1.306
	NF_B	30	0.37	0.809	1.1	1.155	-1.3	1.264
	Total	**123**	**.45**	**0.851**	**.92**	**1.164**	**-1.29**	**1.304**
Intelligence	F_A	31	0.06	0.854	-0.23	1.023	-0.42	1.177
	NF_A	32	0.03	0.647	0.25	0.803	-0.53	1.047
	F_B	30	-0.07	0.907	-0.03	0.999	-1.13	1.137
	NF_B	30	0.17	0.747	0.1	0.845	-0.77	1.251
	Total	**123**	**0.05**	**0.788**	**0.02**	**0.927**	**-0.71**	**1.172**
Emotional Connection	F_A	31	-0.94	1.124	0	1.317	-0.84	1.369
	NF_A	32	-0.72	1.054	0.5	1.796	-1	1.778
	F_B	30	-0.73	1.337	0.53	1.592	-0.63	1.79
	NF_B	30	-1.17	1.577	0.43	1.305	-0.93	1.76
	Total	**123**	**-.89**	**1.282**	**.37****	**1.516**	**-0.85**	**1.668**

Note: F_A = Facial Emoji Group A, NF_A = Non-Facial Emoji Group A, F_B = Facial Emoji Group B, NF_B = Non-Facial Emoji Group B

Emoji Valence (Continued)

Male Acquaintance		Neutral Text, No Emoji			Neutral Text, Positive Emoji		Neutral Text, Negative Emoji	
		n	*M*	*SD*	*M*	*SD*	*M*	*SD*
Likability	F_A	31	0.26	1.125	-0.35	1.473	-1.23	1.334
	NF_A	32	0.22	0.792	0.28	1.571	-1.22	1.475
	F_B	30	0.43	0.817	-0.4	1.476	-1.13	1.042
	NF_B	30	0.13	1.432	-0.07	1.721	-1.17	1.341
	Total	**123**	**0.26**	**1.062**	**-0.13**	**1.568**	**-1.19**	**1.295**
Intelligence	F_A	31	-0.1	0.87	-0.45	1.234	-0.97	1.14
	NF_A	32	0.09	0.53	0	0.916	-0.78	0.975
	F_B	30	-0.13	0.434	-0.63	1.217	-0.77	1.135
	NF_B	30	0.03	0.89	-0.4	1.003	-0.77	1.135
	Total	**123**	**-0.02**	**0.707**	**-0.37**	**1.111**	**-0.82**	**1.087**
Emotional Connection	F_A	31	-0.61	1.334	-0.87	1.522	-0.61	1.626
	NF_A	32	-0.28	0.888	-0.16	1.629	-1	1.545
	F_B	30	-0.43	0.935	-0.17	1.663	-0.4	1.499
	NF_B	30	-0.4	1.429	-0.4	1.545	-0.87	1.548
	Total	**123**	**-0.43**	**1.16**	**-0.4**	**1.598**	**-0.72**	**1.554**

Note: F_A = Facial Emoji Group A, NF_A = Non-Facial Emoji Group A, F_B = Facial Emoji Group B, NF_B = Non-Facial Emoji Group B

Emoji Valence (Continued)

Female Friend		Neutral Text, No Emoji			Neutral Text, Positive Emoji		Neutral Text, Negative Emoji	
		n	*M*	*SD*	*M*	*SD*	*M*	*SD*
Likability	F_A	31	1	1	1.55	1.121	-0.1	0.978
	NF_A	32	1.09	0.995	1.94	0.878	0.63	1.314
	F_B	30	1.47	0.937	1.53	1.548	-0.17	1.392
	NF_B	30	1.17	1.367	1.83	1.147	0.6	1.429
	Total	**123**	**1.18**	**1.087**	**1.72**	**1.191**	**0.24**	**1.327**
Intelligence	F_A	31	0.65	0.798	0.81	1.046	0.06	0.574
	NF_A	32	0.66	1.035	1	1.164	0.25	0.803
	F_B	30	0.6	0.968	0.7	1.393	-0.1	1.155
	NF_B	30	0.8	1.031	0.87	1.548	0.37	0.928
	Total	**123**	**0.67**	**0.954**	**0.85**	**1.287**	**0.15**	**0.893**
Emotional Connection	F_A	31	0.68	1.301	1.19	1.078	0.1	1.106
	NF_A	32	0.81	1.256	1.81	1.12	0.5	1.368
	F_B	30	0.93	1.015	1.57	1.331	0.4	1.453
	NF_B	30	1.1	1.185	1.7	1.264	0.53	1.224
	Total	**123**	**0.88**	**1.191**	**1.57**	**1.208**	**0.38**	**1.29**
Male Friend		**Neutral Text, No Emoji**			**Neutral Text, Positive Emoji**		**Neutral Text, Negative Emoji**	
		n	*M*	*SD*	*M*	*SD*	*M*	*SD*
Likability	F_A	31	0.29	1.465	0.19	1.682	-0.71	1.189
	NF_A	32	0.66	1.035	1.06	1.134	0.31	1.401
	F_B	30	0.93	1.363	0.8	1.215	0.03	1.351
	NF_B	30	0.53	1.358	0.97	1.326	0.37	1.497
	Total	**123**	**0.6**	**1.317**	**0.76**	**1.381**	**0**	**1.414**
Intelligence	F_A	31	-0.16	1.098	-0.29	1.442	-0.29	1.16
	NF_A	32	0.44	0.801	0.41	1.043	0.06	0.84
	F_B	30	0.47	1.074	0.53	1.008	-0.1	1.213
	NF_B	30	0.57	1.04	0.1	1.423	0.37	1.189
	Total	**123**	**0.33**	**1.036**	**0.19**	**1.27**	**0.01**	**1.12**
Emotional Connection	F_A	31	-0.13	1.258	-0.03	1.602	-0.77	1.23
	NF_A	32	0.31	1.061	0.94	1.076	0.44	1.216
	F_B	30	0.67	1.061	1.03	1.189	0.27	1.388
	NF_B	30	0.47	1.167	0.77	1.223	0.2	1.4
	Total	**123**	**0.33**	**1.163**	**0.67**	**1.34**	**0.03**	**1.379**

Note: F_A = Facial Emoji Group A, NF_A = Non-Facial Emoji Group A, F_B = Facial Emoji Group B, NF_B = Non-Facial Emoji Group B

Emoji Alignment								
Female Acquaintance		**Negative Text, No Emoji**			**Negative Text, Positive Emoji**		**Negative Text, Negative Emoji**	
		n	*M*	*SD*	*M*	*SD*	*M*	*SD*
Likability	F_A	31	-1.87	1.258	0.39	1.407	-1.29	1.371
	NF_A	32	-1.75	1.107	0.06	1.544	-2.09	1.146
	F_B	30	-1.97	1.159	-0.57	1.736	-0.43	1.977
	NF_B	30	-1.93	1.081	-0.23	1.478	-0.8	2.041
	Total	**123**	**-1.88**	**1.142**	**-0.08**	**1.566**	**-1.17**	**1.764**
Intelligence	F_A	31	-0.77	1.23	0.23	1.087	-0.52	1.208
	NF_A	32	-0.84	1.081	-0.13	1.157	-0.91	1.279
	F_B	30	-1.07	1.484	-0.7	1.535	-0.17	1.642
	NF_B	30	-0.87	1.279	-0.47	1.042	-0.43	1.591
	Total	**123**	**-0.89**	**1.262**	**-0.26**	**1.253**	**-0.51**	**1.445**
Emotional Connection	F_A	31	-0.48	1.71	0.32	1.351	-0.23	1.521
	NF_A	32	-1.16	1.868	0.44	1.684	-1.06	1.777
	F_B	30	-0.6	1.958	-0.23	1.888	0.2	1.883
	NF_B	30	-1.2	1.584	-0.4	1.589	-0.67	1.807
	Total	**123**	**-0.86**	**1.794**	**0.04**	**1.657**	**-0.45**	**1.793**
Female Acquaintance		**Positive Text, No Emoji**			**Positive Text, Positive Emoji**		**Positive Text, Negative Emoji**	
		n	*M*	*SD*	*M*	*SD*	*M*	*SD*
Likability	F_A	31	0.58	1.089	0.68	1.376	-0.42	1.311
	NF_A	32	0.59	1.411	1.38	1.264	-0.31	1.447
	F_B	30	0.57	1.406	0.77	1.455	-0.83	1.392
	NF_B	30	0.33	1.561	0.67	1.749	-0.47	1.306
	Total	**123**	**0.52**	**1.363**	**0.88**	**1.48**	**-0.5**	**1.363**
Intelligence	F_A	31	0.06	1.315	0.13	1.408	-0.58	1.232
	NF_A	32	0.03	1.15	0.41	1.214	-0.34	1.26
	F_B	30	-0.3	1.149	0.03	1.098	-1.1	1.398
	NF_B	30	-0.03	1.299	-0.1	1.322	-0.6	1.07
	Total	**123**	**-0.06**	**1.223**	**0.12**	**1.265**	**-0.65**	**1.261**
Emotional Connection	F_A	31	0.19	1.47	0.58	1.608	-0.61	1.23
	NF_A	32	0.28	1.836	0.69	1.908	-0.19	1.595
	F_B	30	0.23	1.591	0.6	1.499	-0.63	1.497
	NF_B	30	0	1.64	0.27	1.741	-0.57	1.406
	Total	**123**	**0.18**	**1.625**	**0.54**	**1.685**	**-0.5**	**1.434**

Note: F_A = Facial Emoji Group A, NF_A = Non-Facial Emoji Group A, F_B = Facial Emoji Group B, NF_B = Non-Facial Emoji Group B

Emoji Alignment (Continued)

Male Acquaintance		Negative Text, No Emoji			Negative Text, Positive Emoji		Negative Text, Negative Emoji	
		n	*M*	*SD*	*M*	*SD*	*M*	*SD*
Likability	F_A	31	-1.35	1.404	-0.26	1.788	-1.58	1.232
	NF_A	32	-1.66	1.359	-0.44	1.435	-1.84	1.322
	F_B	30	-1.43	1.223	-1.17	1.392	-0.53	1.907
	NF_B	30	-1.07	1.507	-0.47	1.502	-0.9	1.845
	Total	**123**	**-1.38**	**1.376**	**-0.58**	**1.558**	**-1.23**	**1.664**
Intelligence	F_A	31	-0.58	1.409	-0.32	1.72	-0.97	1.402
	NF_A	32	-0.84	1.167	-0.38	1.008	-0.94	1.268
	F_B	30	-1.17	1.289	-1.07	1.363	-0.3	1.705
	NF_B	30	-0.63	1.245	-0.57	1.357	-0.4	1.453
	Total	**123**	**-0.8**	**1.285**	**-0.58**	**1.397**	**-0.66**	**1.476**
Emotional Connection	F_A	31	-1.06	1.482	-0.61	1.801	-1.32	1.469
	NF_A	32	-1.03	1.694	-0.28	1.508	-1.03	1.75
	F_B	30	-0.7	1.765	-0.6	1.632	0	1.875
	NF_B	30	-0.7	1.705	-0.77	1.612	-0.7	1.822
	Total	**123**	**-0.88**	**1.653**	**-0.56**	**1.63**	**-0.77**	**1.782**
Male Acquaintance		**Positive Text, No Emoji**			**Positive Text, Positive Emoji**		**Positive Text, Negative Emoji**	
		n	*M*	*SD*	*M*	*SD*	*M*	*SD*
Likability	F_A	31	-0.42	1.708	-0.45	1.786	-1.23	1.454
	NF_A	32	0.13	1.408	0.59	1.5	-0.78	1.453
	F_B	30	-0.03	1.474	-0.07	1.68	-0.83	1.289
	NF_B	30	0.17	1.724	-0.13	1.889	-0.93	1.363
	Total	**123**	**-0.04**	**1.581**	**-0.01**	**1.739**	**-0.94**	**1.387**
Intelligence	F_A	31	-0.71	1.346	-0.84	1.344	-1.06	1.436
	NF_A	32	0.09	0.963	0.16	1.139	-0.69	1.12
	F_B	30	-0.37	1.273	-0.23	1.305	-0.77	1.478
	NF_B	30	-0.4	1.354	-0.43	1.406	-0.7	1.149
	Total	**123**	**-0.34**	**1.26**	**-0.33**	**1.335**	**-0.8**	**1.297**
Emotional Connection	F_A	31	-0.84	1.393	-0.87	1.668	-1.42	1.455
	NF_A	32	-0.09	1.467	0.16	1.986	-0.75	1.666
	F_B	30	-0.2	1.54	-0.07	1.639	-0.57	1.406
	NF_B	30	-0.3	1.725	-0.13	1.833	-0.77	1.524
	Total	**123**	**-0.36**	**1.542**	**-0.23**	**1.81**	**-0.88**	**1.534**

Note: F_A = Facial Emoji Group A, NF_A = Non-Facial Emoji Group A, F_B = Facial Emoji Group B, NF_B = Non-Facial Emoji Group B

Emoji Alignment (Continued)

Female Friend		Negative Text, No Emoji			Negative Text, Positive Emoji		Negative Text, Negative Emoji	
		n	*M*	*SD*	*M*	*SD*	*M*	*SD*
Likability	F_A	31	-0.87	1.477	0.39	1.358	-1.26	1.264
	NF_A	32	-0.5	1.295	1.06	1.544	-0.78	1.408
	F_B	30	-0.23	1.524	0.43	1.654	-0.8	1.243
	NF_B	30	0.1	1.447	0.93	1.413	-0.17	1.555
	Total	**123**	**-0.38**	**1.463**	**0.71**	**1.508**	**-0.76**	**1.41**
Intelligence	F_A	31	-0.13	1.118	0.03	1.11	-0.45	1.261
	NF_A	32	-0.22	0.792	0.28	1.25	-0.41	1.012
	F_B	30	-0.3	1.022	-0.1	1.423	-0.47	1.196
	NF_B	30	0.07	0.785	0.7	1.236	-0.13	1.008
	Total	**123**	**-0.15**	**0.938**	**0.23**	**1.279**	**-0.37**	**1.118**
Emotional Connection	F_A	31	-0.39	1.667	0.29	1.488	-0.58	1.501
	NF_A	32	0.09	1.614	1.16	1.37	0	1.666
	F_B	30	0.57	1.431	0.53	1.634	0.23	1.406
	NF_B	30	0.73	1.143	1.1	1.213	0.23	1.331
	Total	**123**	**0.24**	**1.528**	**0.77**	**1.464**	**-0.03**	**1.504**
Female Friend		**Positive Text, No Emoji**			**Positive Text, Positive Emoji**		**Positive Text, Negative Emoji**	
		n	*M*	*SD*	*M*	*SD*	*M*	*SD*
Likability	F_A	31	1.16	1.241	1.48	1.18	0.23	1.117
	NF_A	32	1.44	1.243	1.88	1.1	0.59	1.542
	F_B	30	1.23	1.251	1.43	1.569	0.2	1.243
	NF_B	30	1.47	1.167	1.9	1.269	0.67	1.398
	Total	**123**	**1.33**	**1.218**	**1.67**	**1.29**	**0.42**	**1.337**
Intelligence	F_A	31	0.48	1.208	0.87	1.231	0.13	1.056
	NF_A	32	0.66	0.937	0.88	1.264	0.09	1.353
	F_B	30	0.63	1.351	0.6	1.61	-0.23	1.278
	NF_B	30	0.77	1.135	0.87	1.279	0.07	1.172
	Total	**123**	**0.63**	**1.154**	**0.8**	**1.341**	**0.02**	**1.215**
Emotional Connection	F_A	31	1.32	1.222	1.77	1.146	0.32	1.249
	NF_A	32	1.34	1.066	1.94	1.134	0.56	1.39
	F_B	30	1.4	1.133	1.47	1.432	0.1	1.398
	NF_B	30	1.37	1.402	1.73	1.461	0.5	1.548
	Total	**123**	**1.36**	**1.195**	**1.73**	**1.294**	**0.37**	**1.393**

Note: F_A = Facial Emoji Group A, NF_A = Non-Facial Emoji Group A, F_B = Facial Emoji Group B, NF_B = Non-Facial Emoji Group B

Emoji Alignment (Continued)

Male Friend		Negative Text, No Emoji			Negative Text, Positive Emoji		Negative Text, Negative Emoji	
		n	*M*	*SD*	*M*	*SD*	*M*	*SD*
Likability	F_A	31	-0.97	1.378	-0.35	1.539	-0.94	1.289
	NF_A	32	-0.41	1.388	0.47	1.414	-0.69	1.674
	F_B	30	-0.3	1.264	-0.23	1.382	-0.83	1.464
	NF_B	30	0.07	1.507	0.6	1.476	-0.3	1.466
	Total	**123**	**-0.41**	**1.419**	**0.12**	**1.496**	**-0.69**	**1.483**
Intelligence	F_A	31	-0.52	1.363	-0.42	1.205	-0.48	1.18
	NF_A	32	-0.22	0.832	0	1.218	-0.41	1.103
	F_B	30	-0.1	1.242	-0.5	1.408	-0.37	1.299
	NF_B	30	0.13	0.776	0.3	1.179	-0.03	0.964
	Total	**123**	**-0.18**	**1.094**	**-0.15**	**1.281**	**-0.33**	**1.142**
Emotional Connection	F_A	31	-0.9	1.491	-0.26	1.505	-0.65	1.644
	NF_A	32	-0.22	1.338	0.75	1.295	-0.38	1.54
	F_B	30	0.07	1.552	0.13	1.479	0.4	1.589
	NF_B	30	0.53	1.224	0.67	1.373	0.27	1.552
	Total	**123**	**-0.14**	**1.484**	**0.33**	**1.457**	**-0.1**	**1.622**
Male Friend		**Positive Text, No Emoji**			**Positive Text, Positive Emoji**		**Positive Text, Negative Emoji**	
		n	*M*	*SD*	*M*	*SD*	*M*	*SD*
Likability	F_A	31	0.16	1.772	0.23	1.961	-0.13	1.335
	NF_A	32	0.81	1.355	1.13	1.408	0.28	1.224
	F_B	30	0.73	1.081	1.3	1.393	-0.1	1.348
	NF_B	30	0.83	1.289	1.1	1.447	0.4	1.276
	Total	**123**	**0.63**	**1.41**	**0.93**	**1.608**	**0.11**	**1.301**
Intelligence	F_A	31	-0.03	1.402	0	1.528	-0.55	1.287
	NF_A	32	0.44	1.076	0.44	1.343	-0.13	1.04
	F_B	30	0.1	1.155	0.67	1.422	-0.4	1.329
	NF_B	30	0.27	1.258	0.37	1.273	0.13	1.106
	Total	**123**	**0.2**	**1.226**	**0.37**	**1.398**	**-0.24**	**1.208**
Emotional Connection	F_A	31	0.06	1.611	0.19	1.887	-0.26	1.437
	NF_A	32	0.91	1.058	0.84	1.568	0.5	1.191
	F_B	30	0.87	1.224	1.13	1.358	0.2	1.562
	NF_B	30	0.97	1.273	1	1.509	0.67	1.155
	Total	**123**	**0.7**	**1.342**	**0.79**	**1.616**	**0.28**	**1.375**

Note: F_A = Facial Emoji Group A, NF_A = Non-Facial Emoji Group A, F_B = Facial Emoji Group B, NF_B = Non-Facial Emoji Group B

Dissonance Strength

Female Acquaintance		Neutral Text, No Emoji			Negative Text, Positive Emoji		Positive Text, Negative Emoji	
		n	*M*	*SD*	*M*	*SD*	*M*	*SD*
Likability	F_A	31	0.55	0.85	0.39	1.407	-0.42	1.311
	NF_A	32	0.38	0.871	0.06	1.544	-0.31	1.447
	F_B	30	0.5	0.9	-0.57	1.736	-0.83	1.392
	NF_B	30	0.37	0.809	-0.23	1.478	-0.47	1.306
	Total	**123**	**0.45**	**0.851**	**-0.08**	**1.566**	**-0.5**	**1.363**
Intelligence	F_A	31	0.06	0.854	0.23	1.087	-0.58	1.232
	NF_A	32	0.03	0.647	-0.13	1.157	-0.34	1.26
	F_B	30	-0.07	0.907	-0.7	1.535	-1.1	1.398
	NF_B	30	0.17	0.747	-0.47	1.042	-0.6	1.07
	Total	**123**	**0.05**	**0.788**	**-0.26**	**1.253**	**-0.65**	**1.261**
Emotional Connection	F_A	31	-0.94	1.124	0.32	1.351	-0.61	1.23
	NF_A	32	-0.72	1.054	0.44	1.684	-0.19	1.595
	F_B	30	-0.73	1.337	-0.23	1.888	-0.63	1.497
	NF_B	30	-1.17	1.577	-0.4	1.589	-0.57	1.406
	Total	**123**	**-0.89**	**1.282**	**0.04**	**1.657**	**-0.5**	**1.434**
Male Acquaintance		**Neutral Text, No Emoji**			**Negative Text, Positive Emoji**		**Positive Text, Negative Emoji**	
		n	*M*	*SD*	*M*	*SD*	*M*	*SD*
Likability	F_A	31	0.26	1.125	-0.26	1.788	-1.23	1.454
	NF_A	32	0.22	0.792	-0.44	1.435	-0.78	1.453
	F_B	30	0.43	0.817	-1.17	1.392	-0.83	1.289
	NF_B	30	0.13	1.432	-0.47	1.502	-0.93	1.363
	Total	**123**	**0.26**	**1.062**	**-0.58**	**1.558**	**-0.94**	**1.387**
Intelligence	F_A	31	-0.1	0.87	-0.32	1.72	-1.06	1.436
	NF_A	32	0.09	0.53	-0.38	1.008	-0.69	1.12
	F_B	30	-0.13	0.434	-1.07	1.363	-0.77	1.478
	NF_B	30	0.03	0.89	-0.57	1.357	-0.7	1.149
	Total	**123**	**-0.02**	**0.707**	**-0.58**	**1.397**	**-0.8**	**1.297**
Emotional Connection	F_A	31	-0.61	1.334	-0.61	1.801	-1.42	1.455
	NF_A	32	-0.28	0.888	-0.28	1.508	-0.75	1.666
	F_B	30	-0.43	0.935	-0.6	1.632	-0.57	1.406
	NF_B	30	-0.4	1.429	-0.77	1.612	-0.77	1.524
	Total	**123**	**-0.43**	**1.16**	**-0.56**	**1.63**	**-0.88**	**1.534**

Note: F_A = Facial Emoji Group A, NF_A = Non-Facial Emoji Group A, F_B = Facial Emoji Group B, NF_B = Non-Facial Emoji Group B

Dissonance Strength (Continued)

Female Friend		**Neutral Text, No Emoji**			**Negative Text, Positive Emoji**		**Positive Text, Negative Emoji**	
		n	*M*	*SD*	*M*	*SD*	*M*	*SD*
Likability	F_A	31	1	1	0.39	1.358	0.23	1.117
	NF_A	32	1.09	0.995	1.06	1.544	0.59	1.542
	F_B	30	1.47	0.937	0.43	1.654	0.2	1.243
	NF_B	30	1.17	1.367	0.93	1.413	0.67	1.398
	Total	**123**	**1.18**	**1.087**	**0.71**	**1.508**	**0.42**	**1.337**
Intelligence	F_A	31	0.65	0.798	0.03	1.11	0.13	1.056
	NF_A	32	0.66	1.035	0.28	1.25	0.09	1.353
	F_B	30	0.6	0.968	-0.1	1.423	-0.23	1.278
	NF_B	30	0.8	1.031	0.7	1.236	0.07	1.172
	Total	**123**	**0.67**	**0.954**	**0.23**	**1.279**	**0.02**	**1.215**
Emotional Connection	FA	31	0.68	1.301	0.29	1.488	0.32	1.249
	NF_A	32	0.81	1.256	1.16	1.37	0.56	1.39
	F_B	30	0.93	1.015	0.53	1.634	0.1	1.398
	NF_B	30	1.1	1.185	1.1	1.213	0.5	1.548
	Total	**123**	**0.88**	**1.191**	**0.77**	**1.464**	**0.37**	**1.393**
Male Friend		**Neutral Text, No Emoji**			**Negative Text, Positive Emoji**		**Positive Text, Negative Emoji**	
		n	*M*	*SD*	*M*	*SD*	*M*	*SD*
Likability	F_A	31	0.29	1.465	-0.35	1.539	-0.13	1.335
	NF_A	32	0.66	1.035	0.47	1.414	0.28	1.224
	F_B	30	0.93	1.363	-0.23	1.382	-0.1	1.348
	NF_B	30	0.53	1.358	0.6	1.476	0.4	1.276
	Total	**123**	**0.6**	**1.317**	**0.12**	**1.496**	**0.11**	**1.301**
Intelligence	F_A	31	-0.16	1.098	-0.42	1.205	-0.55	1.287
	NF_A	32	0.44	0.801	0	1.218	-0.13	1.04
	F_B	30	0.47	1.074	-0.5	1.408	-0.4	1.329
	NF_B	30	0.57	1.04	0.3	1.179	0.13	1.106
	Total	**123**	**0.33**	**1.036**	**-0.15**	**1.281**	**-0.24**	**1.208**
Emotional Connection	F_A	31	-0.13	1.258	-0.26	1.505	-0.26	1.437
	NF_A	32	0.31	1.061	0.75	1.295	0.5	1.191
	F_B	30	0.67	1.061	0.13	1.479	0.2	1.562
	NF_B	30	0.47	1.167	0.67	1.373	0.67	1.155
	Total	**123**	**0.33**	**1.163**	**0.33**	**1.457**	**0.28**	**1.375**

Note: F_A = Facial Emoji Group A, NF_A = Non-Facial Emoji Group A, F_B = Facial Emoji Group B, NF_B = Non-Facial Emoji Group B