Concept Paper

Hofstede's Dimensions and Generational Effects on Ambiguous Emoji Semiotics: Cross-Cultural Analysis of Japanese and Chinese Digital Communication

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Abstract

This research proposal investigates how cultural differences influence the interpretation and use of emotionally ambiguous emojis in digital communication, with a comparative focus on Japan and China across three distinct age groups. Despite the widespread adoption of emojis as substitutes for non-verbal cues in digital communication, significant gaps exist in understanding how culturally nuanced interpretation of ambiguous emojis operates within East Asian contexts. Current research tends to focus on broad East-West comparisons with limited attention to subtle variations between specific East Asian societies. This study addresses this gap by examining how Hofstede's cultural dimensions interact with generational differences to shape interpretation of ambiguous emojis within the specific contexts of Japanese and Chinese international school communities. Using a mixed-methods approach with stratified sampling of 180 participants (90 from Japan, 90 from China) comprising students (16-18 years) and their parents, this research employs both quantitative surveys measuring interpretation across semantic differential scales and qualitative interviews exploring contextual meaning-making. The findings will clarify how senders' intended meanings diverge from receivers' interpretations across cultural and generational boundaries, providing valuable insights for improving cross-cultural digital communication in our increasingly interconnected world.

Keywords: emojis; digital communication; cross-cultural communication; Japan; China; generational differences; ambiguous emojis; non-verbal communication; Hofstede's cultural dimensions

1. Introduction

This research proposal investigates how cultural differences influence the interpretation and use of emotionally ambiguous emojis in digital communication, with a comparative focus on Japan and China across three distinct age groups. The digital communication landscape has undergone dramatic transformation since emojis' introduction in Japan during the 1990s, evolving from simple pictograms to sophisticated semiotic tools that now number over 3,600 regulated by the Unicode Consortium (Cui, 2024). These visual elements function as deliberate substitutes for the non-verbal cues—facial expressions, gestures, and vocal tone—that operate subconsciously in face-to-face interactions to convey emotions and build rapport (Kroll et al., 2018; Bavelas and Chovil, 2000). This fundamental distinction between spontaneous non-verbal behavior and conscious emoji selection creates unique interpretive challenges, as emojis cannot fully replicate the complex integration of body language, eye contact, and prosody that collectively convey emotional nuance in physical interactions.

The proliferation of digital communication platforms has necessitated these visual substitutes, particularly accelerated by pandemic-related shifts toward remote interaction. However, interpretation remains highly context-dependent and culturally influenced, with research demonstrating that Generation Z often employs emojis like 😂 sarcastically while Millennials tend

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to use them more literally (Cui, Colston, and Jiang, 2024). This layered complexity—where cultural background, generational norms, and communication context interact—creates fertile ground for miscommunication in our increasingly globalized digital landscape. Crucially, individuals from collectivist cultures tend to rely more heavily on non-verbal communication compared to those from individualist cultures (Bello et al., 2010), suggesting that cultural background significantly shapes how digital non-verbal substitutes like emojis are used and understood.

Japan and China present a compelling comparative case for examining culturally influenced emoji interpretation. While both societies share East Asian cultural heritage, they exhibit significant differences in key cultural dimensions relevant to communication. According to Hofstede's framework, Japan scores higher on uncertainty avoidance (92 vs. 60) and demonstrates relatively lower individualism (46 vs. 20) compared to China (Hofstede Insights, 2023). These differences manifest in communication styles, with Japanese culture emphasizing indirect communication and social harmony, while Chinese communication patterns reflect Confucian values with regional variations. Research indicates that Americans associate happiness with personal achievement, whereas Japanese individuals link it to social harmony (Uchida and Kitayama, 2009), demonstrating how fundamental cultural orientations shape emotional conceptualization.

Despite growing interest in emoji interpretation, a significant limitation exists regarding emotionally ambiguous emojis within East Asian contexts. Most studies focus on broad East-West comparisons, with limited attention to nuanced differences between specific East Asian countries (Sun, Lasser and Lee, 2023). Emotionally ambiguous emojis—such as 😏 (smirking face), 🙃 (upside-down face), and 😬 (grimacing face)—present particular challenges as they lack clear positive or negative valence and cannot be easily reenacted in real-life situations (Guntuku et al., 2019). Platform-specific rendering differences further complicate interpretation, with "significant variation as to which emotion category a 'comparable' emoji belonged, depending upon the viewed platform such as Apple, Android, Samsung" (Franco and Fugate, 2020). Current research insufficiently attends to context-specific usage patterns and tends to focus on single cultural dimensions rather than their interaction (Robertson et al., 2021).

2. Research Question

2.1 How do cultural differences affect how emotionally ambiguous emojis are interpreted and used in East Asian countries, more specifically between Japan and Hong Kong?

2.2 How do generational differences within each cultural context moderate the interpretation of emotionally ambiguous emojis, and to what extent do these generational gaps compound cross-cultural misinterpretations in digital communication between Japan and China?

3. Literature Review

This literature review is structured to build a logical foundation for the research, beginning with the fundamental role of emojis in digital communication; progressing through theoretical frameworks for understanding cultural differences; examining contextual factors that influence interpretation; identifying the specific research shortcomings regarding emotionally ambiguous emojis in East Asian contexts; and concluding with methodological limitations in current research that this study addresses.

3.1. Digital Communication and the Rise of Emojis as Contextual Non-Verbal Substitutes

This section establishes how emojis function as deliberate substitutes for non-verbal communication in digital contexts, highlighting the critical distinction between spontaneous face-to-face cues and intentional digital choices that creates unique interpretive challenges. As digital communication has become central to global interaction, emojis have evolved from simple pictograms to complex semiotic tools that compensate for the absence of facial expressions, gestures, and vocal tone in text-based communication (Du Plessis, 2020). Unlike natural non-verbal behaviors

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that occur subconsciously in face-to-face interactions, emoji selection represents a conscious, strategic process where senders deliberately manipulate tone and emotional emphasis (Kroll et al., 2018).

Generally, emojis mimic nonverbal and suprasegmental cues that communicate the sender's emotion and disposition as paralinguistic elements. They also allow for an instinctive and rapid recognition of the tone and meaning of the message. Although the direct representation of human faces depicting emotion (e.g. crying emoji, smiling emoji) can be a clarity marker that enhances the understanding of the text's nuances, ambiguous emojis can hinder this instead. Representation of facial expressions that cannot be replicated in real-life situations (e.g. upside-down face emoji, fog face emoji) and ones that are used in contexts that do not align with the common interpretation of the emoji can be highly obscure; therefore, in this study, ambiguous emojis will be defined as these two categories of emojis.

Nonverbal cues can evoke comfort in "disclosing" for the conversing partner (Tandyonomanu and Tsuroyya, 2018). Hence, the incorporation of emojis as a partial replacement is crucial in the deepening of emotional relationships and affinity in computer-mediated communication. Along with this, the extent to which emotions are exaggerated is more flexible with the use of emojis compared to face-to-face contexts where natural nonverbal cues may be difficult to control. For instance, an individual will be able to intentionally add several laughing face emojis to emphasize joy and entertainment. Not only would this increase clarity of the conversational nuance, but it would also enrich the experience and therefore build stronger emotional relationships. In this way, in digital landscapes, emojis serve as an irreplaceable element that allows for the establishment of rapport. Specifically in Japan, emoji usage is significant in showing politeness and respect, frequently used when conversing with "new acquaintances". This is primarily because the addition of a nonverbal cue in the message would lower the chances of miscommunication (Dharma, GG F P Desak and Kariko, 2022). On the other hand, in Hong Kong, emojis are often used to signify their "emotional and psychological states, with and without their accompany text", such that it is used to clarify and accentuate meanings of text as well as change the intended meaning of preceding texts with sarcasm (Yu et al., 2023). This defines their formative role in computer-mediated communication environments. Additionally, though all emojis have been standardized by Unicode Consortium, the meanings of many ambiguous emojis have been observed to be fluid and change based on trends on social media. The meanings behind such emojis also change based on culture. For instance, in Japan, the *hiyase* (cold sweat emoji) is used extensively to convey "nervous relief" (Keith, 2025); on the other hand, in Hongkong, the emoji depicts "[derogation]" (Sohu.com, 2021).

This fundamental difference creates interpretive challenges, as emojis cannot replicate the complex integration of body language, eye contact, and prosody that collectively convey emotional nuance in physical interactions. Research demonstrates that Generation Z often employs emojis like 😂 sarcastically, while Millennials tend to use them more literally (Cui, Colston and Jiang, 2024), revealing how generational norms further complicate interpretation. The Unicode Consortium now regulates over 3,600 emojis with intended affordances of textuality, versatility, and interoperability, yet interpretation remains highly context-dependent and culturally influenced (Cui, 2024). This layered complexity—where cultural background, generational norms, and communication context interact—creates fertile ground for miscommunication in our increasingly globalized digital landscape.

3.2. Cultural Frameworks: Moving Beyond Simplistic East-West Dichotomies in Emoji Interpretation

This section introduces the theoretical frameworks that enable nuanced analysis of cultural influences on emoji interpretation, moving beyond broad East-West comparisons to examine specific cultural dimensions relevant to the Japan-Hong Kong comparison.

Hofstede's cultural dimensions theory provides a robust framework for analyzing cross-cultural differences in emoji usage through six dimensions: Power Distance, Individualism vs. Collectivism, Masculinity vs. Femininity, Uncertainty Avoidance, Long-Term Orientation, and Indulgence vs. Restraint (Hofstede, 2011). These dimensions offer insights into how deeply rooted cultural values

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shape emotional expression and interpretation, as evidenced by research showing Americans associate happiness with personal achievement, whereas Japanese individuals link it to social harmony (Uchida and Kitayama, 2009). Communication Accommodation Theory (CAT) further explains how individuals adapt their communication styles, including emoji usage, to build rapport and align with interlocutors across cultural boundaries (Gallois, Watson and Giles, 2018). The conscious selection of emojis in digital environments makes them particularly revealing of cultural identity and relational intent, as users may modify their emoji repertoire when communicating across cultural boundaries—such as avoiding ambiguous emojis in favor of more universally recognized ones (Kroll et al., 2018). Meaning construction in digital communication is dynamically shaped by interaction, cultural evolution, and technological mediation, with meaning construction models suggesting interpretation continuously evolves as new nuances are added to existing symbols (Mufwene, 1992). This fluidity challenges traditional models of fixed semantic meaning, as emojis function as context-dependent signs whose interpretation depends on sender-receiver relationships, platform affordances, and cultural background (Verheijen, 2024). By examining how these frameworks manifest in emoji usage patterns across generational cohorts in Japan and Hong Kong, this research moves beyond broad East-West dichotomies to investigate nuanced cultural variations within East Asian contexts. The findings will clarify how senders' intended meanings diverge from receivers' interpretations, providing valuable insights for improving cross-cultural digital communication in our increasingly interconnected world.

3.2.1. Hofstede's First Cultural Dimension – Power Distance

Hofstede's first dimension, "Power Distance", refers to the degree to which individuals of a lower status in society submit to power dynamics, such as within family and social structures (Wale, 2025). These traits in communities can be seen in people's specific tendencies when including emojis in computer-mediated communication. Specifically, emojis are essential to the establishment of an "affective mix of relationship maintenance, sustenance, and continuation" according to Stark and Crawford (2015). Therefore, investigating how this paralinguistic element is used becomes foundational to understanding culture and how it can be observed in digital contexts.

In Japan, power dynamics are highly prevalent in work environments, such that respect is expected from subordinates toward individuals whose status is higher in the hierarchy (Ybema and Byun, 2009). This social norm is evident in texting habits and the use of emojis in specific Japanese contexts. The inclusion of emojis can soften the tone of the sender's message and mitigate potential miscommunication. Japanese individuals can be seen to often employ the function of emojis to improve work relations and ties with "new acquaintances" (Dharma, GG F P Desak and Kariko, 2022). However, the discrepancy between relations of individuals of the same or similar rank and people of completely different statuses (i.e. employer-employee) is conspicuous in digital communication. Specifically, the study conducted by Sugiyama (2018) revealed that there was a natural tendency to use emojis with "acquaintances, colleagues, or classmates" to provide a more welcoming atmosphere. However, if the receiver were to be replaced with the individual's boss, the employment of emojis would be completely avoided to maintain a professional and respectful tone. As such, the Japanese society emphasizes the importance of preserving "relational boundaries" especially in work environments as said "power distance" is considerable(Sugiyama, 2018).

Similarly, in China, "Power Distance" is greater than in other countries. The rigidity of parent-child, employer-employee, and older sibling-younger sibling relations is far more defined in the traditional Chinese society (Farh, Hackett, and Liang, 2007). "Team participation" is highly encouraged within working environments, emphasizing the importance of maintaining an affable relationship with colleagues and individuals of similar statuses in society (Zhang and Begley, 2011). Power distance found on individual levels is also notably great in China, as "top-down" decision-making system is common throughout the country (CCP DECISION-MAKING AND XI JINPING'S CENTRALIZATION OF AUTHORITY Abstract, n.d.); therefore, employees and individuals of lower statuses are more likely to accept societal inequality and hierarchical forces. This can be observed in

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the way people converse on digital platforms in China. The study by Liu et.al (2025) determined that environments with high power distances would observe a more negative effect with the use of emojis – specifically "smile emojis" sent by leaders: it would lower the "perceived leader effectiveness", and therefore, their impact on the organization of work (Liu et al., 2025). However, the study conducted by Wang et al. (2019) reveals that while Chinese culture does emphasize the importance of adhering to societal norms as well as respecting "normative boundaries", subjects often did not completely avoid the use of emojis when conversing with individuals of "authority" (Wang et al., 2019). They further suggest that participants refrained from using such paralinguistic elements in a "creative/playful/ambiguous" manner. This asserts that due to the high Power Distance in Chinese society, emojis are not used in a colloquial sense, but rather to clarify the tone of the message and disposition of the sender.

3.2.2. Hofstede's Second Cultural Dimension – Individualism vs. Collectivism

Hofstede's second dimension, "Individualism vs. Collectivism", is defined by different communities and societies that either prioritize personal aims or a group's benefit (intxt). This cultural feature can be observed in computer-mediated communication. A study conducted by Wang et al. (2019) revealed that individualistic communities may have "fewer categories of audiences", which is a result of the reduced stress of the importance of the wider population. In contrast, people from collective communities were seen to adhere to the norms of hierarchies, where relational boundaries were strictly respected (Wang et al., 2019). Hence, in rather individualistic societies, a colloquial usage of emojis for purposes such as brightening the mood and adding a satirical tone, in professional environments, may be far more common than in collectivist communities.

Japan is considered a highly collectivist country, scoring only 46 compared to the United States, at 91 in Hofstede's individualism dimension, and this quality can be seen in the country's emphasis on "conformity" and "social harmony" (Taguchi, 2021). Individuals can be seen to be notably attentive to the emotions and dispositions of group members and people in the same space. Taguchi (2021) refers to this tendency, specifically in work environments, as "groupthink". This can cause issues, including not being able to raise opposing opinions, especially when hierarchical differences exist. East Asian individuals, including the Japanese, were found to use more paralinguistic elements in congruence with the contents of the message (Togans et al., 2021). This study determined a positive correlation between the number of emojis used and the level of collectivism of the specific country. Togans et al. (2021) claim that this phenomenon stems from their prioritization of being polite and great "concern with face management". Another study found that their Japanese participants are likely to communicate in an "indirect style" and minimize negativity in the message's tone (Urakami and Lim, 2021). Hence, to maintain communicative harmony, individuals from collectivist countries can be seen to utilize emojis to mitigate the harshness in the message's tone as well as maintain politeness. However, there are also individualistic elements present in Japan. The study by Hamamura (2012) found that there was an increased sense of individualism, especially in "residential and family environments". Hamamura claims that this is a result of factors such as the rise of urbanization and larger family sizes becoming rather rare. Despite this change, texting styles and how emojis are used in Japan remain static.

Similar to Japan, China is also a significantly collectivist country. Traditional values and cultures are prevalent throughout the country, establishing moral obligations such as Ren (仁) – a principle defined as "benevolence" (Manufacturing, 2025) (Sun, Lasser, and Lee, 2022). Based on Hofstede's individualism dimension, China scored a 15 – significantly lower than the global average of 24 (www.internationalbusinesscenter.org, n.d.). This characteristic is manifest in computer-mediated communications in Chinese communities. For instance, Chinese participants in a study by Wang and Ye (2025) were seen to use emojis to show heightened respect and "social conditioning". For instance, they would use positivity-resembling emojis, such as the praying emoji (🙏), in contexts showing modesty and honor to enhance their humble and reverent tone. Moreover, the study by Wang, Jiang, and Zhou (2024) suggests that emojis were used in a more "context-dependent" and "subtle" manner,

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and therefore, to enhance the tonal message of the text as well as subdue any unwanted negativity or harshness in the text. This is similar to the way in which Japanese participants use emojis to promote social harmony.

3.2.3. Hofstede's Third Cultural Dimension – Masculinity vs. Feminism

Hofstede's third dimension, "Masculinity vs. Femininity," refers to the differences in gender roles, where the element of "Masculinity" leans toward ones that are rigid and defined, whereas "Femininity" has more flexible and less defined distinctions between gender (Wale, 2025). Therefore, rather masculine societies' norms would emphasize elements such as assertiveness in men, modesty in women, and taboos surrounding this topic exist. On the contrary, feminine societies would have more fluidity in gender expectations and emotional differences between male and female individuals are limited (Hofstede, 2011). These factors can be observed in communication between people of a certain country, such that choices of non-verbal expressions may have disparities between regions of different levels of masculinity and femininity.

Japan scores significantly high in masculinity based on Hofstede's dimension, at 95, and this characteristic is manifest in the interactions between men and women in society (Clearly Cultural, n.d.). Patriarchy is prominent in Japanese society, such that women are often expected to be "homeowners" and to bear a child (Belarmino and Roberts, 2019). One interviewee stated that a female individual was to be "good baby-maker and maid" (Belarmino and Roberts, 2019). A study by Sugiyama (2018) found that Japanese female students avoided sending more complex emojis and other forms of pictograms, such as "Bitmoji[s]" to male students, as it is "considered a more girly thing". Instead, the student participants would send rather simple emoji, including the "'thumbs-up' emoji" and "the 'smirk face' emoji". Participants also claimed that male students rarely used emojis in conversations. This highlights that potentially, emojis – as a paralinguistic element – engenders greater divisions between the treatments of different genders. This also reveals that the deliberate choice of using certain emojis and avoiding others when interacting with specific genders has a strong connection to social appropriations and defined gender roles. Moreover, the active consideration surrounding this topic and starkly changing texting styles between genders reveals the notable sensitivity for these traditional values and societal norms.

Contrarily, China has a relatively lower score, at 66 (Clearly Cultural, n.d.). Although this score is above the global average, one of the most prevalent reasons for its comparative lowness to Japan is due to its balance of societal and individual goals to maintain social harmony. Though society in itself may be more traditional, due to its Confucian origins, individuals may possibly be more inclined to lean towards femininity, ascribed by a greater expression and exchange of emotion, to maintain equal and affable relations with other individuals of society. Masculinity is also characterized by assertiveness, which can be seen by workers having more "organizational commitment", according to Hofman and Newman (2013). Where female individuals are thought to comprehend and express emotions more readily, they are thought to use emojis far more than male individuals.

3.2.4. Hofstede's Fourth Cultural Dimension – Uncertainty Avoidance

Hofstede's fourth dimension, "Uncertainty Avoidance," measures a society's tolerance for ambiguity and uncertainty, with higher scores indicating greater discomfort with unknown situations and stronger reliance on rules and structure (Hofstede, 2011). Japan scores exceptionally high on this dimension at 92, reflecting a cultural preference for predictability, meticulous planning, and aversion to ambiguous situations (Hofstede Insights, 2023). In contrast, China scores moderately at 60, indicating a greater tolerance for uncertainty and more flexible approaches to ambiguous situations (Hofstede Insights, 2023). These differences manifest clearly in digital communication patterns and emoji interpretation.

In Japan's high uncertainty avoidance context, emojis function as precise communication tools that reduce ambiguity in text-based interactions. Japanese digital communication exhibits a strong

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preference for standardized emoji usage with clearly defined meanings, minimizing potential misinterpretation (Sampietro, Felder & Siebenhaar, 2022). The Japanese cultural emphasis on wa (harmony) extends to digital communication, where ambiguous emojis like 😏 (smirking face) are often interpreted through established contextual frameworks that maintain predictability (Sun et al., 2023). Research shows Japanese users demonstrate greater consistency in emoji interpretation across contexts compared to cultures with lower uncertainty avoidance scores (Park, Baek & Cha, 2014). This aligns with Matsumoto's (1990) findings on Japanese communication norms, where indirect expression serves to maintain social harmony by reducing potential conflict.

Conversely, China's moderate uncertainty avoidance score reflects a cultural context where ambiguity is more readily accepted in communication. Chinese digital communication demonstrates greater flexibility in emoji interpretation, with users more willing to assign multiple meanings to the same emoji based on contextual cues (Guntuku et al., 2019). The Chinese communication style, influenced by Confucian principles of relational harmony yet adapted to practical circumstances, allows for more fluid emoji usage patterns (Bond, 2010). Studies indicate that Chinese users are more likely to creatively reinterpret emojis based on social media trends, with ambiguous emojis like 🙃 (upside-down face) acquiring context-specific meanings that might shift rapidly (Wang & Ye, 2025). This flexibility is particularly evident among younger Chinese users who navigate between traditional communication norms and global digital practices (Miller et al., 2017).

The uncertainty avoidance dimension significantly influences how emotionally ambiguous emojis are processed. Japanese users, operating in a high uncertainty avoidance context, tend to interpret ambiguous emojis through established cultural frameworks that provide predictability, often assigning meanings that maintain social harmony (Uchida & Kitayama, 2009). In contrast, Chinese users demonstrate greater interpretive flexibility with ambiguous emojis, reflecting their moderate uncertainty avoidance score and greater tolerance for communication ambiguity (Chen et al., 2024). This difference creates potential miscommunication points when Japanese and Chinese users interact digitally, as the same ambiguous emoji may be interpreted with different levels of confidence and certainty depending on cultural background.

3.2.5. Hofstede's Fifth Cultural Dimension – Long-Term Orientation

Hofstede's fifth dimension, "Long-Term Orientation," measures how societies balance short-term versus long-term rewards, with higher scores indicating greater emphasis on future-oriented values like perseverance and thrift (Hofstede, 2011). Both Japan and China score highly on this dimension—Japan at 88 and China at 87—reflecting shared Confucian values that emphasize persistence, adaptability, and long-term relationship building (Hofstede Insights, 2023). However, subtle differences in how these values manifest create distinct patterns in emoji usage and interpretation between the two cultures.

In Japan's long-term oriented culture, emojis function as strategic relationship-building tools that serve future-oriented communication goals. Japanese digital communication emphasizes maintaining harmony and building trust over time, with emoji usage reflecting careful consideration of long-term relationship implications (Matsumoto, 1990). Research shows Japanese users employ emojis with high contextual precision, where the same emoji might carry different meanings depending on the stage of relationship development (Sampietro et al., 2022). For instance, the 😬 (grimacing face) emoji might be used early in a relationship to mitigate potential offense, while later in the relationship it might convey lighthearted teasing among established connections (Sun et al., 2023). This strategic emoji usage aligns with Japan's cultural emphasis on "nemawashi" (consensus-building) and relationship cultivation over time (Urakami & Lim, 2021).

China's similarly high long-term orientation manifests differently in digital communication due to its unique historical and social context. Chinese emoji usage reflects the cultural value of "guanxi" (relationship networks), where emojis serve as tools for maintaining and strengthening social connections over time (Bond, 2010). However, Chinese digital communication shows greater variation in emoji interpretation across different relationship stages compared to Japan. Studies

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indicate that Chinese users are more likely to use emojis to express immediate emotional states while still considering long-term relationship implications (Wang et al., 2024). The praying emoji (🙏), for example, might simultaneously convey immediate gratitude while reinforcing long-term respect within hierarchical relationships (Wang & Ye, 2025).

The high long-term orientation in both cultures influences how ambiguous emojis are interpreted within ongoing communication contexts. Japanese users tend to interpret ambiguous emojis based on established relationship history and anticipated future interactions, creating highly context-dependent meanings (Togans et al., 2021). Chinese users also consider relationship history but demonstrate greater flexibility in reinterpreting ambiguous emojis as relationships evolve (Guntuku et al., 2019). This difference is particularly evident in how both cultures handle emoji misinterpretations—Japanese users are more likely to preserve established interpretations to maintain relationship continuity, while Chinese users may adapt interpretations more readily as relationships develop (Miller et al., 2017). These nuanced differences in long-term oriented emoji usage highlight how shared cultural dimensions can manifest in distinct communication patterns despite similar Hofstede scores.

3.2.6. Hofstede's Sixth Cultural Dimension – Indulgence vs. Restraint

Hofstede's sixth dimension, "Indulgence versus Restraint," measures the extent to which societies allow relatively free gratification of basic human drives related to enjoying life and having fun, with higher scores indicating greater societal emphasis on leisure, enjoyment, and freedom of speech (Hofstede, 2011). Japan scores moderately on indulgence at 42, reflecting a cultural balance between enjoying life's pleasures and maintaining social restraint (Hofstede Insights, 2023). In contrast, China scores significantly lower at 24, indicating a stronger cultural emphasis on restraint, regulation of gratification, and suppression of individual desires for the sake of social order (Hofstede Insights, 2023). These differences profoundly influence emoji usage patterns and interpretation of emotionally ambiguous emojis.

In Japan's moderately indulgent cultural context, emoji usage reflects a balance between expressive freedom and social appropriateness. Japanese digital communication demonstrates nuanced use of emojis to express emotion within socially acceptable boundaries, with particular attention to contextual appropriateness (Dharma et al., 2022). Research shows Japanese users employ ambiguous emojis like 😏 (smirking face) with careful consideration of social context, often using them to convey lighthearted teasing among close relationships while avoiding them in formal contexts (Sun et al., 2023). This reflects Japan's cultural concept of "honne" (true feelings) and "tatemae" (public facade), where digital communication maintains social harmony through controlled emotional expression (Matsumoto, 1990). The Japanese approach to ambiguous emojis demonstrates "restrained indulgence"—expressing emotion through emojis while maintaining appropriate social boundaries (Uchida & Kitayama, 2009).

China's low indulgence score manifests in digital communication through greater emphasis on restraint and appropriateness in emoji usage. Chinese digital communication shows stronger adherence to social norms regarding emotional expression, with users demonstrating greater caution with ambiguous emojis that might be interpreted as inappropriate (Wang et al., 2024). Studies indicate that Chinese users are more likely to avoid or reinterpret ambiguous emojis like 🙃 (upside-down face) when communicating with superiors or in formal contexts, reflecting the cultural value of maintaining "face" (mianzi) and social harmony (Bond, 2010). The Chinese approach to ambiguous emojis prioritizes social appropriateness over expressive freedom, with users more likely to choose safer, less ambiguous emojis in contexts where restraint is culturally expected (Wang & Ye, 2025).

These differences in indulgence versus restraint significantly impact how emotionally ambiguous emojis are interpreted across cultures. Japanese users tend to interpret ambiguous emojis with moderate openness to expressive interpretation, considering both the emotional content and social appropriateness (Togans et al., 2021). In contrast, Chinese users demonstrate greater caution with ambiguous emojis, often interpreting them through the lens of social appropriateness and

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potential face-threatening implications (Chen et al., 2024). This difference creates potential miscommunication points, as Japanese users might perceive Chinese interpretations of ambiguous emojis as overly restrained, while Chinese users might view Japanese interpretations as insufficiently cautious. The indulgence-restraint dimension thus provides critical insight into how cultural values shape the boundaries of acceptable emotional expression through ambiguous emojis in digital communication between Japan and China.

3.3.1. Contextual Nuances: Generational Gaps in Emoji Interpretation

This section specifically examines how generational differences create layers of complexity in emoji interpretation that intersect with cultural influences. Research demonstrates that emoji interpretation varies significantly across age cohorts, with generational communication norms creating distinct interpretive frameworks for the same visual symbols. Generation Z (born 1997-2012) frequently employs emojis with ironic or sarcastic intent, while Millennials (born 1981-1996) tend to use them more literally, and older generations often misinterpret contemporary emoji usage patterns (Cui, Colston & Jiang, 2024). This generational divergence creates communication gaps that compound cross-cultural misunderstandings, particularly with emotionally ambiguous emojis that lack clear emotional valence.

In Japan, generational differences in emoji interpretation are pronounced due to the country's late adoption of digital communication by older cohorts. Japanese Baby Boomers (born 1947-1964) often interpret ambiguous emojis like 😏 (smirking face) according to their literal visual appearance rather than contemporary contextual meanings, while Japanese Generation Z users employ the same emoji with nuanced, context-dependent meanings that reflect social media trends (Sugiyama, 2018). This generational gap is particularly evident in family communication, where parents may misinterpret their children's emoji usage as disrespectful when it is intended playfully (Cui et al., 2024). Japanese cultural norms emphasizing respect for elders further complicate these generational differences, as younger users may deliberately modify their emoji usage when communicating with older family members to maintain appropriate relational boundaries (Urakami & Lim, 2021).

In China, the generational gap in emoji interpretation is even more pronounced due to the country's rapid digital transformation over recent decades. Chinese Digital Natives (Generation Z) have grown up with emojis as integral communication tools, while many Chinese parents (Generation X and older) adopted digital communication later in life, creating significant differences in emoji literacy (Miller et al., 2017). Research indicates that Chinese Generation Z users frequently employ ambiguous emojis like 🙃 (upside-down face) with ironic or sarcastic meanings influenced by global social media trends, while their parents interpret the same emojis more literally or according to traditional Chinese communication norms (Wang et al., 2024). This generational divergence is compounded by China's collectivist cultural context, where misinterpretations of ambiguous emojis can have significant relational consequences within family and social networks (Bond, 2010). The rapid evolution of emoji meanings on Chinese social media platforms like Weibo and Douyin further accelerates generational differences, as younger users adopt new interpretations more quickly than older generations (Guntuku et al., 2019).

3.3.2. Contextual Nuances: Platform-Specific Factors in Emoji Interpretation

This section examines how technical and platform-specific factors create additional layers of complexity in emoji interpretation that intersect with cultural influences. A major factor contributing to emoji misinterpretation is the variation in how platforms render the same Unicode character, with Franco and Fugate (2020) finding "significant variation as to which emotion category a 'comparable' emoji belonged" across Apple, Android, and Samsung devices. This technical inconsistency compounds cultural differences, especially in regions where certain platforms dominate (e.g., LINE in Japan, WeChat in China). These rendering differences mean that users in Japan and China may see different visual representations of the same emoji, leading to divergent interpretations even when cultural norms are similar.

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The communication ecosystems in Japan and China differ significantly, creating distinct emoji interpretation contexts. In Japan, LINE dominates as the primary communication platform with 96% penetration among smartphone users (Statista, 2024), functioning as a comprehensive digital ecosystem integrating messaging, payments, and official services. LINE's unique rendering of emojis—particularly its extensive sticker marketplace—creates a communication environment where emojis function alongside culturally specific visual elements (Sampietro, Felder & Siebenhaar, 2022). Research shows that LINE's rendering of ambiguous emojis like 😏 (smirking face) appears more subdued and less confrontational than equivalent renderings on Western platforms, influencing Japanese interpretation toward more harmonious meanings (Franco & Fugate, 2020).

In China, WeChat dominates with over 1.3 billion monthly active users (Statista, 2024), creating a standardized communication environment where emoji rendering is consistent across most user interactions. WeChat's rendering of ambiguous emojis follows Chinese aesthetic preferences, with subtle differences in facial expressions compared to Western platforms (Guntuku et al., 2019). For example, the upside-down face (🙃) appears with slightly different curvature in the eyes and mouth on WeChat compared to LINE, leading to interpretation discrepancies between Japanese and Chinese users. Platform-specific usage patterns further complicate the picture, as different social media environments foster distinct communication norms that influence emoji selection and interpretation (Sampietro, Felder and Siebenhaar, 2022). In China, the integration of emojis with WeChat's payment system and mini-programs has created unique contexts where emojis function not just as emotional indicators but as transactional elements, further expanding their semantic range beyond Western interpretations (Wang et al., 2024).

3.4. The Critical Gap: Emotionally Ambiguous Emojis in East Asian Contexts

This section identifies the specific limitations of research concerning emotionally ambiguous emojis within East Asian contexts, justifying the focus on Japan and Hong Kong as a comparative case. Emotionally ambiguous emojis—such as 😏 (smirking face), 🙃 (upside-down face), and 😬 (grimacing face)—lack clear positive or negative valence and are particularly susceptible to cultural variation in meaning (Guntuku et al., 2019). Unlike emojis representing basic emotions (e.g., 😂 for laughter, 😢 for sadness), ambiguous emojis do not map neatly onto universal emotional categories and often require contextual support for accurate decoding (Miller et al., 2017). Some, like the upside-down face (🙃), cannot be physically reenacted, making their meaning even more abstract and culturally contingent. Despite growing interest in emoji interpretation, research has primarily focused on broad East-West comparisons, with limited attention to nuanced differences between specific East Asian countries (Sun, Lasser and Lee, 2023). Japan and Hong Kong present a compelling comparative case, as they share East Asian cultural heritage but exhibit significant differences in key cultural dimensions relevant to communication. According to Hofstede's framework, Japan scores higher on uncertainty avoidance and long-term orientation, while Hong Kong demonstrates relatively higher individualism compared to mainland China (Hofstede, 2011). These differences manifest in communication styles, with Japanese culture emphasizing indirect communication and social harmony, while Hong Kong's communication patterns reflect its unique position as a former British colony with Chinese cultural roots (Park, Baek and Cha, 2014). Current research insufficiently attends to context-specific usage patterns and tends to focus on single cultural dimensions rather than their interaction (Robertson et al., 2021), creating a significant gap in understanding how subtle cultural variations within East Asian contexts influence the interpretation of ambiguous digital emotional expressions.

3.5. Addressing Limitations in Current Emoji Research

This section critically evaluates methodological approaches in existing emoji research and identifies how the current study addresses these limitations through a strategically designed mixed methods approach. Current studies often rely on self-reported data rather than clinically-assessed data, potentially introducing bias (Robertson et al., 2021). Many focus on single cultural dimensions

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rather than their interaction, and few examine context-specific usage patterns across different communication platforms (Sun, Lasser and Lee, 2023). Park, Baek and Cha's (2014) large-scale analysis of Twitter emoticons across cultures provides a model for examining platform-specific usage patterns, but lacks the contextual depth needed to understand interpretation processes. Similarly, Guntuku et al.'s (2019) study of cultural differences in emoji usage across East and West offers valuable quantitative insights but doesn't capture the nuanced reasoning behind interpretation choices. To address these limitations, this study integrates survey methods with contextual analysis through a two-layered analytical framework. The quantitative layer identifies frequency patterns in emoji usage and interpretation across cultural and generational groups, while the qualitative layer employs stimulated recall interviews to understand the contextual meaning behind these patterns (Braun and Clarke, 2006). This approach builds on Miller et al.'s (2017) work on emoji ambiguity in context while adding cross-cultural dimensions that previous research has overlooked. By specifically comparing parent-student usage of emojis in Japan and Hong Kong, this study moves beyond simplistic cultural dichotomies to investigate nuanced communication patterns in our increasingly interconnected digital world.

3.6. Japan-China Comparative Literature Review: Cultural Contexts of Emoji Interpretation

The following section compares and contrasts cultural contexts of emoji interpretation between Japan and China, with the findings influencing both our quantitative and qualitative approaches.

3.6.1. Historical Development and Cultural Foundations

Emojis originated in Japan during the 1990s as visual supplements to early mobile communication (Danesi, 2017), evolving from simple pictograms to the sophisticated semiotic system regulated by the Unicode Consortium today. This Japanese origin creates a fundamentally different relationship with emojis in Japan compared to China, where emojis were adopted as foreign communication elements. Research indicates that Japanese users demonstrate greater semantic precision with emojis due to their cultural familiarity, while Chinese users often interpret emojis through a lens influenced by Chinese communication norms and global digital practices (Park, Baek & Cha, 2014).

The cultural context of emoji interpretation in Japan is deeply rooted in honne (true feelings) and tatemae (public facade) communication norms, where indirect expression is valued for maintaining social harmony (Matsumoto, 1990). In contrast, China's communication style reflects Confucian values emphasizing relational harmony and "face" maintenance, creating communication patterns that balance directness with contextual sensitivity (Bond, 2010). Hofstede's cultural dimensions reveal significant differences: Japan scores higher on uncertainty avoidance (92 vs. 60) while China demonstrates relatively higher individualism (20 vs. 46) (Hofstede Insights, 2023). These differences manifest in emoji usage, with Japanese users employing more context-dependent ambiguous emojis to preserve harmony, while Chinese users show greater variation in emoji interpretation due to regional cultural diversity within China.

3.6.2. Platform-Specific Renderings and Communication Ecosystems

The communication ecosystems in Japan and China differ significantly, creating distinct emoji interpretation contexts. In Japan, LINE dominates as the primary communication platform with 96% penetration among smartphone users (Statista, 2024), functioning as a comprehensive digital ecosystem integrating messaging, payments, and official services. LINE's unique rendering of emojis—particularly its extensive sticker marketplace—creates a communication environment where emojis function alongside culturally specific visual elements (Sampietro, Felder & Siebenhaar, 2022). Research shows that LINE's rendering of ambiguous emojis like 😏 (smirking face) appears more subdued and less confrontational than equivalent renderings on Western platforms, influencing Japanese interpretation toward more harmonious meanings (Franco & Fugate, 2020).

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In China, WeChat dominates with over 1.3 billion monthly active users (Statista, 2024), creating a standardized communication environment where emoji rendering follows Chinese aesthetic preferences. WeChat's rendering of ambiguous emojis differs subtly from LINE's versions, with variations in facial expressions that influence interpretation. For example, the upside-down face (🙃) appears with slightly different curvature in the eyes and mouth on WeChat compared to LINE, leading to interpretation discrepancies between Japanese and Chinese users (Guntuku et al., 2019). Unlike Japan's LINE ecosystem, China's WeChat integrates emojis with payment systems and mini-programs, creating unique contexts where emojis function not just as emotional indicators but as transactional elements, further expanding their semantic range beyond Japanese interpretations (Wang et al., 2024).

3.6.3. Interpretation of Ambiguous Emojis: Cultural and Generational Dimensions

Emotionally ambiguous emojis—such as 😏 (smirking face), 🙃 (upside-down face), and 😬 (grimacing face)—present particular challenges due to their lack of clear positive or negative valence (Guntuku et al., 2019). Research reveals significant cross-cultural differences in how these ambiguous emojis are interpreted:

1. Japan: Japanese users interpret ambiguous emojis through the lens of wa (harmony), often assigning meanings that maintain social cohesion. The smirking face (😏) is frequently interpreted as playful teasing rather than sarcasm, while the upside-down face (🙃) is understood as lighthearted confusion rather than mockery (Sun et al., 2023). This aligns with Uchida and Kitayama's (2009) finding that Japanese individuals link happiness to social harmony rather than personal achievement.
2. China: Chinese users demonstrate more varied interpretations of ambiguous emojis, reflecting regional cultural diversity within China. The same smirking face (😏) might be interpreted as sarcastic in urban centers influenced by global digital practices or as playful in contexts emphasizing traditional Chinese communication styles, depending on the user's regional background (Wang et al., 2024). This interpretive flexibility creates greater potential for miscommunication but also enables more nuanced digital expression.

Generational differences further complicate these patterns. In Japan, older generations interpret ambiguous emojis more literally due to their later adoption of digital communication, while younger Japanese users employ them with greater nuance and context-dependence (Cui et al., 2024). In China, the generational gap is more pronounced due to the country's rapid digital transformation. Generation Z Chinese users often blend traditional communication norms with global digital practices, creating hybrid meanings for ambiguous emojis that differ significantly from their parents' interpretations (Miller et al., 2017).

3.6.4. Limitation and Theoretical Contribution

Despite growing interest in emoji interpretation, significant gaps remain in understanding how culturally nuanced interpretation of ambiguous emojis operates within East Asian contexts, particularly between Japan and China. Current research tends to focus on broad East-West comparisons (Guntuku et al., 2019) or single-country analyses (Sampietro et al., 2022), with limited attention to the subtle variations between specific East Asian societies. This study addresses this gap by examining how Hofstede's cultural dimensions interact with generational differences to shape interpretation of ambiguous emojis within the specific contexts of Japanese and Chinese international school communities.

By focusing on student-parent communication within international schools, this research moves beyond simplistic cultural dichotomies to investigate nuanced communication patterns where cultural influences intersect with generational norms and platform-specific contexts. The findings will clarify how senders' intended meanings diverge from receivers' interpretations across cultural

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and generational boundaries, providing valuable insights for improving cross-cultural digital communication in our increasingly interconnected world.

4. Research Methodology

This methodology section is structured to demonstrate a logical progression from research design to implementation, beginning with the overall mixed methods approach, explaining the integrated data collection procedures designed to overcome limitations in prior research, and concluding with quality assurance measures that ensure methodological rigor.

4.1. Strategic Pragmatic Research Design: Philosophical Justification and Methodological Integration

This study employs a pragmatic research philosophy that positions methodology as serving the research question rather than adhering to a single paradigm. As Dudovskiy (2025) explains, pragmatism "accepts concepts to be relevant only if they support action" and recognizes "that there may be multiple realities." This philosophical stance directly addresses the methodological limitations in current emoji research, which tends to focus on single cultural dimensions rather than their interaction (Robertson et al., 2021).

Unlike positivism and interpretivism which represent "two extreme mutually exclusive paradigms," pragmatism allows for methodological flexibility where "studies with pragmatism research philosophy can integrate the use of multiple research methods such as qualitative, quantitative and action research methods" (Dudovskiy, 2025). This approach aligns with our research question, which requires both measurement of usage patterns across cultural groups (quantitative dimension) and understanding of contextual meaning-making (qualitative dimension).

4.2. Target Population and Sampling Strategy Summary

Table 1. Comprehensive Target Population Comparison.

Aspect	Japan	China
International Schools	K. International School Tokyo, Canadian Academy (Kobe), and Osaka International School	Shanghai American School, Beijing International School, and Shanghai Community International School
Student Population	Grade 10-12 students (16-18 years) enrolled in international schools with Japanese as a secondary language environment	Grade 10-12 students (16-18 years) enrolled in international schools with English as primary language environment
Parent Population	Parents of enrolled students who regularly communicate with children via digital platforms,	Parents of enrolled students who regularly communicate with children via digital platforms,

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	primarily using LINE	primarily using WeChat
Primary Communication Platforms	LINE (96% penetration among smartphone users), with integration of stickers and official accounts	WeChat (98.8% penetration among smartphone users aged 10-69, Statista, 2024)
Cultural Context	High uncertainty avoidance (92), strong collectivism (individualism score 46), indirect communication style	Moderate uncertainty avoidance (60), strong collectivism (individualism score 20), hierarchical communication style
Emoji Interpretation Context	Emphasis on social harmony, context-dependent meaning, high value on non-verbal communication	Blend of traditional Chinese communication norms with digital practices, emphasis on relational harmony ("guanxi")

4.3. Quantitative Methodology

Table 2. Quantitative Phase Sampling Composition Overview.

Group	Japan (N=90)	China (N=90)	Standardized Criteria
Grade 10-12 Students	45 (15 per school)	45 (15 per school)	• Currently enrolled in Grade 10-12 • Minimum 5 hours/week digital communication • Regular emoji usage in digital communication
Parents	45 (15 per school)	45 (15 per school)	• Parent/guardian of participating student • Age 40-60 years

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			• Minimum 3 hours/week digital communication with child • Verified through school enrollment records

4.3.1. Sampling Strategy with Generational Differentiation

For the quantitative phase, this study employs stratified random sampling of 180 participants (90 from China, 90 from Japan), comprising 90 Grade 10-12 students (16-18 years) and their parents (90 in total) from three international schools in each location. In Japan, participants will be recruited from K. International School Tokyo, Canadian Academy (Kobe), and Osaka International School. In China, recruitment will occur through Shanghai American School, Beijing International School, and Shanghai Community International School. All student participants must be enrolled in Grade 10-12 with minimum 5 hours/week digital communication, while parent participants must regularly communicate with their children via digital platforms.

Generational Differentiation in Quantitative Methodology:

For Students:

- Survey administered via mobile-friendly web platform optimized for smartphone use
- Incorporates interactive elements with immediate visual feedback
- Shorter completion time (15-20 minutes) to accommodate attention spans
- Uses contemporary examples relevant to adolescent communication
- Includes gamified elements to increase engagement (e.g., emoji matching exercises)
- Administered during designated free periods at school with researcher present for technical support

For Parents:

- Survey available via both web and WeChat mini-program interfaces
- More traditional questionnaire format with clear instructions
- Slightly longer completion time (20-25 minutes) accounting for careful consideration
- Uses communication examples relevant to parent-child interactions
- Includes option for paper-based survey for technologically less-savvy participants
- Administered via school communication channels with extended 72-hour response window

This differentiation is justified by developmental psychology research showing that adolescents process information differently than adults, with greater preference for visual, interactive content (Steinberg, 2014). Additionally, studies on digital literacy indicate significant generational differences in technology usage patterns, with younger users preferring mobile-first interfaces while older users often require more explicit instructions (Van Deursen & Van Dijk, 2019).

4.3.2. Data Collection Protocol with Platform-Specific Adaptation

The quantitative data collection utilizes a structured online survey administered through Qualtrics with platform-specific emoji renderings. Crucially, the survey interface dynamically adapts based on participant group:

For Students:

- Mobile-optimized interface with swipe navigation
- Emoji renderings specific to their primary platform (WeChat for Chinese students, LINE for Japanese students)

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- Interactive scenarios where students can "reply" to sample messages using emojis
- Visual scales rather than numerical ratings where appropriate
- Built-in progress indicators and achievement badges for completion milestones

For Parents:

- Traditional form-based interface with clear section breaks
- Emoji renderings displayed with comparative examples across multiple platforms
- More detailed contextual scenarios reflecting parent-child communication
- Traditional Likert scales with clear anchor points
- Option to skip complex interpretation tasks without disrupting survey flow

The survey comprises:

- Demographic and platform usage questionnaire
- Emoji interpretation task using a 7-point semantic differential scale - Osgood's Semantic Differential technique (Osgood, Suci & Tannenbaum, 1957), which measures the connotative meaning of concepts across three primary dimensions:

Table 3. Semantic Differential Scale Dimensions.

Dimension	Scale Endpoints	Conceptual Meaning	Scoring Method
Evaluation	Pleasant-Unpleasant	Measures emotional valence	1-7 score where 4 = neutral
Potency	Strong-Weak	Measures perceived intensity	1-7 score where 4 = neutral
Activity	Active-Passive	Measures perceived dynamism	1-7 score where 4 = neutral

For each ambiguous emoji (😏, 🙄, 😬), participants rate their interpretation across these three dimensions, generating a 3-dimensional interpretation profile. The scoring system calculates:

- Valence Score: Mean of evaluation dimension scores (higher = more positive interpretation)
- Intensity Score: Mean of potency dimension scores (higher = stronger emotional intensity)
- Ambiguity Index: Standard deviation across all three dimensions (higher = greater perceived ambiguity)

Contextual interpretation scenarios present ambiguous emojis within realistic message contexts relevant to student-parent communication. Each scenario is scored using a modified version of the Contextual Emoji Interpretation Framework (CEIF) developed by Miller et al. (2017):

Interpretation Consistency Score = (Number of coherent interpretations) / (Total possible interpretations)

Where "coherent interpretations" are those that align with the communication context (e.g., a sarcastic interpretation would be coherent in a context where the student is complaining about

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homework). This scoring method quantifies how cultural background influences contextual interpretation ability.

Crucially, platform-specific emoji renderings will be displayed to participants based on their reported primary platform (Apple (iOS), Google (Android), Microsoft (Windows), Samsung (Android devices), X (via Twemoji), Meta, WhatsApp, JoyPixels), directly addressing the platform rendering differences identified by Franco and Fugate (2020) that significantly impact interpretation.

4.3.3. Enhanced Sampling Details

Quantitative Sampling Implementation:

- Recruitment will occur through school-approved communication channels with parental consent protocols
- Target response rate: 75% for students (based on school cooperation), 60% for parents (accounting for time constraints)
- Non-response follow-up: Two email reminders for parents, one in-person reminder for students
- Replacement protocol: Up to 15% replacement sample for non-respondents, maintaining original stratification
- Stratification criteria: Gender balance (target 50/50), years of international school attendance (1-3 years vs. 4+ years), and primary language spoken at home
- Power analysis conducted using G*Power 3.1, confirming that N=180 provides 85% power to detect medium effect sizes (f=0.25) at α=0.05 for the planned ANOVA analyses

4.4. Qualitative Methodology

Table 4. Qualitative Phase Sample Composition Overview.

Group	Japan (N=12)	China (N=12)	Selection Criteria
Student-Parent Pairs	6 pairs (3 per school)	6 pairs (3 per school)	• Distinctive interpretation patterns for ambiguous emojis • Balanced representation across communication platforms • Variation in cultural background within international school context • Willingness to share actual communication examples

4.4.1. Sampling Strategy with Generational Differentiation

For the qualitative phase, purposeful sampling selects 24 participants (12 from Japan, 12 from China) representing diverse interpretation patterns identified in the quantitative phase. From the international school populations, the sample comprises 6 student-parent pairs from each country (3 pairs per school), selected based on distinctive interpretation patterns for ambiguous emojis,

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balanced representation across communication platform preferences (LINE/WeChat), and variation in cultural background within the international school context.

Generational Differentiation in Qualitative Methodology:

For Students:

- Shorter interview sessions (30-40 minutes) to maintain engagement
- Visual prompts and emoji cards for concrete discussion
- Option for peer-to-peer interview format (student interviewing student)
- Use of actual communication screenshots from their devices
- Focus on specific recent examples rather than abstract concepts
- Option to have interviews conducted in English (preferred language for many international school students)

For Parents:

- Longer interview sessions (45-60 minutes) allowing for more reflective discussion
- Structured discussion guides with clear thematic progression
- Option for family interview format (both parents together)
- Focus on communication patterns over time and generational changes
- Option to have interviews conducted in native language (Japanese/Chinese) with translator
- Emphasis on relationship context and cultural values influencing communication

This differentiation is justified by communication accommodation theory (Gallois, Watson & Giles, 2018), which suggests that effective communication requires adapting style to the interlocutor's preferences and capabilities. Research on intergenerational communication indicates that adolescents and adults have different communication preferences, with adolescents favoring concrete, immediate examples while adults engage better with reflective, value-based discussions (Fingerman et al., 2011).

4.4.2. Enhanced Sampling Details

Qualitative Sampling Implementation:

- Selection process: Quantitative results will be analyzed to identify participants with extreme or distinctive interpretation patterns for ambiguous emojis
- Screening interview: 15-minute preliminary interview to confirm suitability and establish rapport
- Diversity criteria: At least 2 pairs per country with significant cultural background variation (e.g., one parent born in another country, mixed cultural heritage)
- Communication artifact collection: Participants will be asked to provide 3-5 recent examples of emoji usage in student-parent communications (with personal information redacted)
- Data saturation monitoring: Ongoing analysis during data collection to determine when theoretical saturation is reached
- Recruitment timeline: 4 weeks for identification and screening, 6 weeks for data collection
- Contingency plan: Additional 2 pairs per country on standby in case of attrition

4.4.3. Cultural and Methodological Safeguards

To ensure methodological rigor with this specialized population:

- Cultural adaptation: All research instruments undergo rigorous translation procedures with native speaker translation into Japanese and Simplified Chinese, followed by back-translation verification
- School partnerships: Formal agreements with all six international schools include ethics approval from school boards and parent committees, with recruitment materials distributed

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through official school communication channels

- Parent verification: Parent participants must verify their relationship to participating students through school-confirmed contact information, ensuring authentic generational pairs
- Age standardization: Strict age verification through school enrollment records ensures consistent generational comparison (students: 16-18 years; parents: 40-60 years)
- Platform usage verification: All participants complete a digital literacy assessment confirming minimum 5 hours/week digital communication with the other generational group
- Generational communication history assessment: All participants complete a brief questionnaire about their communication history with the other generational group to contextualize interpretation patterns

4.5. Ensuring Methodological Rigor: Quality Assurance Measures

The qualitative phase implements specialized quality assurance measures for this generational comparison:

- Paired analysis protocol: A dedicated coding framework analyzes communication patterns within student-parent pairs, identifying points of convergence and divergence in emoji interpretation
- Triangulation: Data sources include interview transcripts, communication artifacts, and observational notes from communication interactions, following Flick's (2018) approach
- Reflexivity protocols: Researcher journals document how my positionality as a Grade 12 student influences interpretation of findings, with regular discussions with faculty advisors to address potential biases (Berger, 2015)
- Member checking: All participants review preliminary interpretations of their communication patterns to verify accuracy
- Thick description: Reporting includes rich contextual details about family communication norms, school cultural environment, and technology usage patterns within each international school setting
- Cross-cultural coding team: Two researchers (one with Japanese cultural background, one with Chinese cultural background) will independently code all qualitative data, with discrepancies resolved through discussion

Ethical considerations include special protocols for minor participants, parental consent procedures approved by school boards, strict anonymization of family relationships, and culturally sensitive interview design that respects hierarchical communication norms in Japanese and Chinese families. All participants will receive a summary of findings relevant to their cultural context upon study completion.

4.6. Expected Outcomes and Significance

Expected Outcomes

Based on the theoretical framework and methodological approach outlined in this proposal, several key outcomes are anticipated. First, this research will reveal significant differences in how Japanese and Chinese participants interpret emotionally ambiguous emojis (such as 😏, 😩, and 😬), with Japanese participants demonstrating greater interpretive consistency due to Japan's high uncertainty avoidance (92 vs. China's 60), while Chinese participants will show more contextual flexibility in their interpretations. These differences will manifest most prominently in the Evaluation dimension of the semantic differential scale, with Japanese participants assigning more harmonious meanings to ambiguous emojis to maintain social cohesion, while Chinese participants will demonstrate wider variation reflecting regional cultural diversity within China.

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Second, the study will identify substantial generational gaps within each cultural context, with Generation Z participants in both countries employing ambiguous emojis with greater creative and ironic intent compared to their parents' more literal interpretations. However, this generational divergence will be more pronounced in China due to the country's rapid digital transformation, with Chinese parents showing greater difficulty adapting to evolving emoji meanings compared to Japanese parents who have had longer exposure to digital communication norms.

Third, the research will document specific points of cross-cultural misinterpretation that occur when Japanese and Chinese digital communicators interact, particularly regarding emojis that have culturally specific meanings (such as the "hiyase" or cold sweat emoji). These misinterpretations will be shown to compound across generational boundaries, creating layered communication challenges in international contexts.

Finally, the study will produce a comprehensive cultural-interpretive framework for understanding ambiguous emoji usage that integrates Hofstede's cultural dimensions with generational communication norms and platform-specific rendering effects. This framework will demonstrate how cultural background, generational cohort, and communication context interact to shape emoji interpretation in ways that cannot be captured by examining any single dimension in isolation.

Theoretical Significance

This research makes several significant theoretical contributions to the field of cross-cultural digital communication. First, it moves beyond simplistic East-West dichotomies that have dominated previous emoji research (Guntuku et al., 2019; Sun et al., 2023) to examine nuanced cultural variations within East Asian contexts—a critical advancement given that Japan and China share cultural heritage while exhibiting significant differences in key cultural dimensions. By applying Hofstede's framework to digital communication, this study extends cultural dimensions theory into the realm of digital semiotics, demonstrating how deeply rooted cultural values shape the interpretation of visual communication elements in technology-mediated contexts.

Second, the research integrates multiple theoretical perspectives—Hofstede's cultural dimensions, Communication Accommodation Theory (Gallois et al., 2018), and meaning construction models (Verheijen, 2024)—to create a more comprehensive understanding of how cultural identity, relational context, and technological mediation interact in digital communication. This integrative approach addresses a significant gap in current literature, which tends to focus on single cultural dimensions rather than their interaction (Robertson et al., 2021).

Third, by examining both student and parent generations within international school contexts, this research contributes to developmental psychology by documenting how cultural communication norms are transmitted (or fail to be transmitted) across generations in digital environments. The findings will illuminate how traditional cultural communication patterns adapt (or resist adaptation) to the rapidly evolving landscape of digital expression.

Practical Significance

The practical implications of this research extend across multiple domains. In international business and diplomacy, the findings will provide concrete guidance for navigating cross-cultural digital communication between Japanese and Chinese partners, reducing the risk of misunderstandings that could damage professional relationships. Specifically, the research will identify high-risk ambiguous emojis that are particularly prone to misinterpretation between these cultural contexts, allowing professionals to make more informed choices about digital communication strategies.

In educational contexts, the results will inform digital literacy curricula for international schools, helping educators prepare students for effective cross-cultural digital communication. The study's focus on student-parent communication patterns will also provide valuable insights for parents navigating digital communication with their children across cultural boundaries.

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For technology developers and platform designers, the research offers evidence-based recommendations for creating more culturally sensitive emoji implementations. Understanding how the same Unicode character is interpreted differently based on cultural context and platform rendering (Franco & Fugate, 2020) can guide improvements in emoji design, platform consistency, and even the development of culturally adaptive rendering systems.

Finally, in an increasingly interconnected world where digital communication often serves as the primary medium for cross-cultural interaction, this research contributes to building more effective global communication practices. As emojis become an increasingly universal component of digital language, understanding their culturally specific interpretations is essential for fostering genuine cross-cultural understanding in our digital age.

Dissemination Strategy

To maximize the impact of this research, findings will be disseminated through multiple channels. Academically, results will be published in leading journals such as the *Journal of Cross-Cultural Psychology*, *Computers in Human Behavior*, and *International Journal of Intercultural Relations*. Presentations will be delivered at key conferences including the International Communication Association Annual Meeting and the International Association for Cross-Cultural Psychology Congress.

Practically, the research team will develop targeted workshops for international schools, multinational corporations, and cross-cultural training organizations. A publicly accessible digital toolkit will be created, providing practical guidance for interpreting ambiguous emojis across Japanese and Chinese digital communication contexts. Additionally, the research team will seek opportunities to collaborate with technology companies to translate findings into improved emoji design and implementation practices that better serve diverse global users.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflicts of Interest: The author declares no conflict of interest.

Ethical Statement: Ethical approval will be obtained from relevant institutional review boards prior to data collection. Informed consent will be obtained from all participants, with special protocols for minor participants. Parental consent procedures will be approved by school boards, with strict anonymization of family relationships and culturally sensitive interview design that respects hierarchical communication norms in Japanese and Chinese families.

Author Contributions: Chak Hang Chan; Eunhoo Park: Conceptualization, Methodology, Investigation, Writing-Original Draft.

References

1. Aljasir, S. (2024) 'Emoji as a social presence tool among Arab digital media users: Do the demographic variables of the sender play a role?', Social Science Computer Review, 42(1), pp. 270-284.
2. Bai, Q. et al. (2019) 'A systematic review of emoji: Current research and future perspectives', Frontiers in Psychology, 10, p. 2221.
3. Bavelas, J.B. and Chovil, N. (2000) 'The small screen: Video as a window on social interaction', Journal of Pragmatics, 32(10), pp. 1409-1424.
4. Bello, R.S. et al. (2010) 'Verbal and nonverbal methods for expressing appreciation in friendships and romantic relationships: A cross-cultural comparison', International Journal of Intercultural Relations, 34(3), pp. 294-302.
5. Berger, R. (2015) 'Now I see it, now I don't: Researcher's positionality and reflexivity in qualitative research', Qualitative Research, 15(2), pp. 219-234.
6. Braun, V. and Clarke, V. (2006) 'Using thematic analysis in psychology', Qualitative Research in Psychology, 3(2), pp. 77-101.

 doi:10.20944/preprints202509.0729.v1

7. Chen, Y. et al. (2024) 'Individual differences in emoji comprehension: Gender, age, and culture', PLoS One, 19(2), p. e0297379.
8. Creswell, J.W. and Plano Clark, V.L. (2017) Designing and conducting mixed methods research. 3rd edn. Thousand Oaks, CA: SAGE Publications.
9. Cui, J., Colston, H.L. and Jiang, G. (2024) 'Is that a genuine smile? Emoji-based sarcasm interpretation across the lifespan', Metaphor and Symbol, 39(3), pp. 195-216.
10. Cui, Z. (2024) Emojis or stickers?: exploring the use of digital expressions in different cultures. The University of Texas at Austin.
11. Dudovskiy, J. (2025) Pragmatism Research Philosophy - Research-Methodology. [Online] Business Research Methodology. Available at: https://research-methodology.net/research-philosophy/pragmatism-research-philosophy/ (Accessed: 16 August 2025).
12. Du Plessis, T. (2020) Interpretation of emojis in organisational computer-mediated communication (CMC) contexts. Doctoral dissertation. Stellenbosch: Stellenbosch University.
13. Elfenbein, H.A. and Ambady, N. (2003) 'Universals and cultural differences in recognizing emotions', Current Directions in Psychological Science, 12(5), pp. 159-164.
14. Etman, M. and Elkareh, S. (2021) 'Nonverbal communication and emojis usage in Arabic tweets: A cross-cultural study', Social Network, 10(02), pp. 19-28.
15. Flick, U. (2018) Designing qualitative research. 2nd edn. Thousand Oaks, CA: SAGE Publications.
16. Franco, C.L. and Fugate, J.M.B. (2020) 'Emoji face renderings: Exploring the role emoji platform differences have on emotional interpretation', Journal of Nonverbal Behavior, 44(2), pp. 301-328.
17. Gallois, C., Watson, B.M. and Giles, H. (2018) 'Intergroup communication: Identities and effective interactions', Journal of Communication, 68(2), pp. 309-317.
18. Geertz, C. (1973) The interpretation of cultures: selected essays. New York: Basic Books.
19. Guntuku, S.C. et al. (2019) 'Studying cultural differences in Emoji usage across the East and the West', in Thirteenth International AAAI Conference on Web and Social Media (ICWSM 2019).
20. Hofstede, G. (2011) 'Dimensionalizing cultures: The Hofstede model in context', Online Readings in Psychology and Culture, 2(1).
21. Kimura-Thollander, P. and Kumar, N. (2019) 'Examining the "global" language of emojis: Designing for cultural representation', in Proceedings of the 2019 CHI conference on human factors in computing systems, pp. 1-14.
22. Kirkman, B.L., Lowe, K.B. and Gibson, C.B. (2006) 'A quarter century of Culture's Consequences: a review of empirical research incorporating Hofstede's cultural values framework', Journal of International Business Studies, 37(3), pp. 285-320.
23. Ko, B.C. (2018) 'A brief review of facial emotion recognition based on visual information', Sensors (Basel, Switzerland), 18(2).
24. Kroll, T. et al. (2018) 'Accommodated emoji usage: Influence of hierarchy on the adaption of pictogram usage in instant messaging', in Australasian Conference on Information Systems 2018. University of Technology, Sydney.
25. Krys, K. et al. (2021) 'Societal emotional environments and cross-cultural differences in life satisfaction: A forty-nine country study', The Journal of Positive Psychology, 17(1), pp. 117-130.
26. Li, M. et al. (2019) 'An empirical analysis of emoji usage on Twitter', Industrial Management & Data Systems, 119(8), pp. 1748-1763.
27. Lincoln, Y.S. and Guba, E.G. (1985) Naturalistic inquiry. Beverly Hills, CA: SAGE Publications.
28. Lu, X. et al. (2016) 'Learning from the ubiquitous language: an empirical analysis of emoji usage of smartphone users', in Proceedings of the 2016 ACM international joint conference on pervasive and ubiquitous computing, pp. 770-780.
29. Mauss, I.B. and Robinson, M.D. (2009) 'Measures of emotion: A review', Cognition & Emotion, 23(2), pp. 209-237.
30. Manning, C.D. and Schütze, H. (1999) Foundations of statistical natural language processing. Cambridge, MA: MIT Press.

 doi:10.20944/preprints202509.0729.v1

31. Marshall, C. and McCall, M.W. (2005) 'Action inquiry: The secret of timely and transformational leadership', San Francisco, CA: Berrett-Koehler Publishers.
32. Matsumoto, D. (1990) 'Cultural similarities and differences in display rules', Motivation and Emotion, 14(3), pp. 195-214.
33. Matsumoto, D. and Ekman, P. (1989) 'American-Japanese cultural differences in intensity ratings of facial expressions of emotion', Motivation and Emotion, 13(2), pp. 143-157.
34. Miller, H. et al. (2017) 'Understanding emoji ambiguity in context: The role of text in emoji-related miscommunication', Proceedings of the International AAAI Conference on Web and Social Media, 11(1), pp. 152-161.
35. Mufwene, S.S. (1992) 'Acts of meaning', Journal of Linguistic Anthropology, 2(2), pp. 225-226.
36. Ochulor, C.A., Yusufu, M.M. and Adebayo, B.A. (2023) 'Emojis and communication: A study of the impact of emojis on digital communication', Journal of Language and Linguistic Studies, 19(1), pp. 245-259.
37. Park, J., Barash, V., Fink, C. and Cha, M. (2021) 'Emoticon Style: Interpreting Differences in Emoticons Across Cultures', Proceedings of the International AAAI Conference on Web and Social Media, 7(1), pp. 466-475.
38. Park, J., Baek, Y.M. and Cha, M. (2014) 'Cross-cultural comparison of nonverbal cues in emoticons on twitter: Evidence from big data analysis', The Journal of Communication, 64(2), pp. 333-354.
39. Robertson, A. et al. (2021) 'Semantic journeys: Quantifying change in emoji meaning from 2012-2018', arXiv [cs.CL].
40. Sampietro, A., Felder, S. and Siebenhaar, B. (2022) 'Do you kiss when you text? Cross-cultural differences in the use of the kissing emojis in three WhatsApp corpora', Intercultural Pragmatics, 19(2), pp. 183-208.
41. Sun, J., Lasser, S. and Lee, S.K. (2023) 'Understanding emojis: Cultural influences in interpretation and choice of emojis', Journal of International and Intercultural Communication, 16(3), pp. 242-261.
42. Svoboda, J. (2022) Emoticons and emojis in cross-cultural perspective: Narrative systematic review. Masaryk University.
43. Togans, L.J. et al. (2021) 'Digitally saving face: An experimental investigation of cross-cultural differences in the use of emoticons and emoji', Journal of Pragmatics, 186, pp. 277-288.
44. Tsai, J.L., Knutson, B. and Fung, H.H. (2006) 'Cultural variation in affect valuation', Journal of Personality and Social Psychology, 90(2), pp. 288-307.
45. Uchida, Y. and Kitayama, S. (2009) 'Happiness and unhappiness in East and West: Themes and variations', Psychological Science, 20(4), pp. 463-469.
46. van de Vijver, F.J.R. and Hambleton, R.K. (1996) 'Translating tests: Some practical guidelines', European Psychologist, 1(2), pp. 89-99.
47. Verheijen, L. (2024) 'Language style accommodation in computer-mediated communication: Alignment with textisms, emoji, and emoticons', in Proceedings of the 11th Conference on CMC and Social Media Corpora for the Humanities, pp. 89-94.
48. Zukhi, M.Z.B.M. and Hussain, A. (2017) Culturicon model: A new model for cultural-based emoticon. Universiti Utara Malaysia.