

Cross-Cultural Differences in Emoji-Based Emotional Expression: A Comparative Study of Japanese and American University Students

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Abstract

Emojis are commonly used to express emotions online, but their meanings can vary across cultures. This study examines how Japanese university students use emojis to represent emotions and compares their choices with those of U.S. students. A total of 91 Japanese and 141 American students selected emojis for 32 emotions taken from an English dialogue dataset (Rashkin et al., 2019). The results revealed clear cross-cultural differences, particularly for relational or context-dependent emotions such as *impressed*, *grateful*, *caring*, *lonely*, *disappointed*, and *terrified*. By contrast, some visually salient emotions, including *proud* and *confident*, were represented by similar emojis across both groups. Additionally, several emojis were used to represent multiple emotions, indicating that emoji meanings may overlap and are shaped by cultural context. These findings suggest that although certain emotional expressions exhibit cross-cultural similarity, emoji interpretation and usage remain embedded within culturally influenced communicative norms.

Keywords: cross-cultural communication, emoji interpretation, emotion representation

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Introduction

Emojis are not merely decorative elements; they are now an indispensable language feature in digital communication and are commonly used to express emotions, attitudes, and interpersonal stances. Originally developed in Japan in 1999 in connection with NTT DoCoMo's *i-mode* mobile Internet service, emojis were designed as small pictorial symbols to enhance the expressive capacity of text-based communication. Emojis function as pictograms that are embedded in written messages. More broadly, they belong to what some researchers term *graphicons*: a category that includes ASCII emoticons, stickers, and animated GIFs (Dickinson, 2020).

As emojis are visual symbols, they are often assumed to be easy for everyone to understand across languages. This assumption has led to the belief that the literal meanings of emojis are widely shared across languages and cultures (Zhou et al., 2024). However, studies of facial expressions have shown that visual signals are not always interpreted in the same manner. Cultural norms, social expectations, and differences in emotional expressions can shape people's understanding of these visual cues (Gendron et al., 2014; Matsumoto, 1990). Prior research suggests that emojis may function as a tool for enhancing communication while carrying the potential for misinterpretation.

In the context of digital communication, this raises a pertinent question of whether facial-expression emojis are interpreted in the same manner across cultures. Although facial-expression emojis can facilitate interpretation in text-only communication by compensating for the lack of prosody and nonverbal cues, they can hinder understanding when their emotional meanings are interpreted differently across cultural contexts.

The broader goal of this research is to elucidate how emojis are used and interpreted across cultures. As a preliminary step, this study explored the cross-cultural similarities and differences in both the frequency of emoji use in everyday situations and the interpretation of facial-expression emojis. By integrating theories of emotion universality, cultural display rules, and pragmatic marker research, this study situates emoji interpretation within broader debates in the emotion and digital communication fields. Rather than treat emojis as inherently universal visual symbols, this study examines how culturally shaped emotional norms influence emoji–emotion mappings across contexts. In doing so, it contributes to a more theoretically grounded understanding of emojis as culturally embedded communicative tools.

Facial Expressions and Cultural Interpretation

Research on facial expressions has long debated the extent to which emotions are universally expressed and recognized versus culturally shaped. Early work argued that a set of basic emotions—typically happiness, anger, fear, sadness, disgust, and surprise—are universally recognized across cultures (Ekman & Friesen, 1971). Cross-cultural studies have reported that individuals from both literate and relatively isolated pre-literate societies can reliably match facial expressions with emotional labels or situations, suggesting biologically rooted facial patterns. The findings indicate that people from both Western and non-Western cultures can identify basic emotions from facial expressions with more than mere guesswork.

Ekman et al.'s (1992) theoretical framework further distinguished basic emotions from a broader range of affective phenomena. Beyond basic emotions, Ekman et al. (1992) discussed related but conceptually distinct states, such as moods, which differ from emotions in terms of

duration, physiological patterns, and situations in use. They also differentiated emotions from affective traits, attitudes, and emotional disorders. Moreover, Ekman et al. (1992) introduced the notion of emotional plots, which involve more complex affective experiences embedded within specific situations or narrative structures. Similarly, emotional blends are distinguished by referring to instances in which two or more emotions co-occur. The basic emotion of enjoyment is described as a family of related positive states that encompass a wide range of pleasurable affective experiences. The idea of basic emotions is distinct from that of other affective states, and prior research has shown that basic emotions are universally recognizable across cultures.

Later research has challenged the position of universality by showing that although basic emotion categories may be shared, the perceived intensity and expression of emotions vary across cultures (Ekman et al., 1992). Cultural display rules play a significant role in shaping how and when emotions are expressed, particularly in social contexts (Matsumoto, 1990). For example, Matsumoto's (1990) comparison of American and Japanese participants showed that Americans tended to express emotions more openly toward close others whereas the Japanese participants were more likely to regulate their emotional expressions depending on the social distance, group harmony, and hierarchical relationships.

From this display-rule perspective, emotional expressions are grounded in biological universals but regulated by culturally learned norms regarding appropriateness. Cross-cultural comparisons, particularly between Japanese and American participants, have shown that spontaneous facial reactions tend to be similar when individuals are alone but diverge in social situations, with some cultures more likely to suppress or mask negative emotions.

Recent studies have challenged this strong claim of universality. Gendron et al. (2014) demonstrated that participants from remote cultural groups did not consistently sort or interpret facial expressions according to Western emotion categories, particularly when the experimental tasks lacked emotion labels or contextual cues. These findings suggest that emotion perception depends on not only facial information but also culturally learned concepts, language, and situational knowledge. Gendron et al. (2014) claimed that early research on universality may have been influenced by the way the experiment was conducted by implicitly imposing Western emotion categories.

From a developmental perspective, it is difficult to maintain strong claims of emotional universality. Lewis (2000) noted that although certain basic affective responses appear early and seem to be biologically grounded, emotional life does not remain fixed. Rather, emotions become increasingly differentiated as one's self-awareness and cognitive capacity develop. In this view, emotional processes are not merely acquired at birth but change over time through development and experience.

Lewis (2000) suggested that early affective reactions observed in infancy may be better described as biologically based action patterns rather than fully formed emotions. These patterns involve coordinated facial expressions, vocalizations, bodily movements, and physiological responses that function as adaptive regulatory mechanisms. Crucially, such responses are understood to be innate rather than learned.

As self-awareness and self-referential abilities emerge, typically around the middle of the third year of life, these early action patterns gradually develop into more complex emotional experiences. Initial reactions, such as pleasure or distress, are transformed into higher-order

self-evaluative emotions, including shame and pride. From this standpoint, emotions are not static categories present from birth but are psychological phenomena shaped by cognitive development and social interaction.

Lewis's framework also draws attention to the development of social emotions. For instance, gratitude has been described not as a simple affective reaction but rather as a cognitively mediated response requiring more advanced developmental capacities. McCullough et al. (2001) argued that dispositional gratitude is associated with empathy, prosocial tendencies, and cooperative behavior, suggesting a reliance on higher-order social-cognitive processes. Gratitude has also been interpreted as an adaptive mechanism involved in regulating social exchanges and responses to rewarding behavior.

Taken together, the developmental account implies that human emotions emerge through the ongoing interaction of biological traits, cognitive maturation, and socially and culturally structured experiences. Gradually, this process leads to increasingly diverse and differentiated emotional experiences.

Overall, research on facial expressions and emotions indicates that although some cross-cultural similarities exist, human emotions are shaped by cultural knowledge, social norms, and contextual factors. Therefore, understanding of the effect of facial expressions on emotions has shifted from universal models to approaches that recognize the interaction between biological constraints and culturally constructed meanings. This shift in understanding is especially important in the context of digital communication, where emotional meaning is often expressed through the visual symbols of emojis rather than through face-to-face interactions.

Symbols in Text-Based Communication and Emojis

In text-based communication, meaning is shaped by not only words but also symbols that guide interpretation. Symbols used in sentences are traditionally referred to as punctuation marks. This category can be extended to include emojis in digital contexts, with emojis viewed as an extension of punctuation in digital communications. Historically, punctuation developed not as an aspect of grammar but as a reading aid for oral performance; early writing systems lacked punctuation and relied on readers to infer pauses and meaning (Robins, 1997). One of the earliest systematic punctuation systems used dots to indicate different pause lengths when reading aloud (Parkes, 1993). As the pause placement affects the meaning, punctuation played an important role in interpretation.

As reading practices shifted toward silent reading in late antiquity and the Middle Ages, punctuation became more regular and was eventually standardized through printing technologies (Bischoff, 1990; Eisenstein, 1980; Saenger, 1997). In contemporary digital communication, emojis function in ways that resemble early rhetorical punctuation by guiding interpretation and signaling tone, stance, and pragmatic intent (Parkes, 1993). In this sense, emojis play a crucial role in meaning making in written communications. The discussion is whether such punctuation-like functions facilitate understanding across cultures or conversely introduce new sources of misinterpretation.

In digital communication, emojis serve important pragmatic functions; they help restore framing, protect irony, enable humor, and sustain cooperative interpretation in text-only environments where contextual cues are limited. Humor and irony heavily rely on shared expectations and framing, which are often absent in digital contexts where multiple discourse

types coexist (Seager, 2017). As interlocutors generally assume sincerity, irony requires clear interpretive cues. In face-to-face interactions, these cues are provided by prosody and facial expressions. However, such cues are largely missing in text-based communication (Grice, 1975; Seager, 2017).

From an emoji-as-punctuation perspective, an emoji functions as a pragmatic marker that guides how an utterance should be read, such as playfully or sarcastically, rather than contributing additional propositional content (Escouflaire, 2020; Seager, 2017; Zhou et al., 2024). For example, the sentence “Yeah, that’s the best idea ever” can be interpreted as sincere or sarcastic depending on the context. When followed by an emoji, such as 😄, the intended humorous or sarcastic reading becomes clearer. In this manner, emojis reduce the likelihood of literal misinterpretation by clarifying the speaker’s tone and stance, ultimately supporting smoother communication.

Research Questions

Given the cultural variability observed in facial expression interpretation, this study investigated whether similar differences emerge in the understanding of facial expression emojis between different cultures. The research questions were formulated based on the data collected from Japanese and American university students. The two groups were selected based on Matsumoto’s (1990) cross-cultural research, which highlighted the differences between Eastern and Western cultural contexts in terms of emotional expression and interpretation.

- **RQ1:** Do Japanese and American university students differ in their daily use of emojis?
- **RQ2:** Do Japanese and American university students select the same emojis for representing the same emotions?

Methods

Participants

A survey was conducted to examine the patterns of emoji use and emotional interpretation among university students in Japan and the United States. The questionnaire asked the participants about their general emoji use and required them to select the emoji that best represented the given emotion words.

The participants consisted of 91 Japanese and 141 American university students. In the Japanese sample, approximately 73.6% and 26.4% of the participants identified as male and female, respectively. In the American sample, 57.4% identified as male and 41.8% as female.

Regarding academic background, 70.3% of the Japanese participants were Informatics majors and 29.7% were Engineering majors. In the American sample, 51.1% were Engineering majors and 45.4% were Informatics majors, with a few participants from other fields, such as Accountancy, Arts, Law, and the Social Sciences.

All Japanese participants were native Japanese speakers. In the American sample, 92.9% reported English as their native language whereas a small minority reported other native languages, such as Hindi.

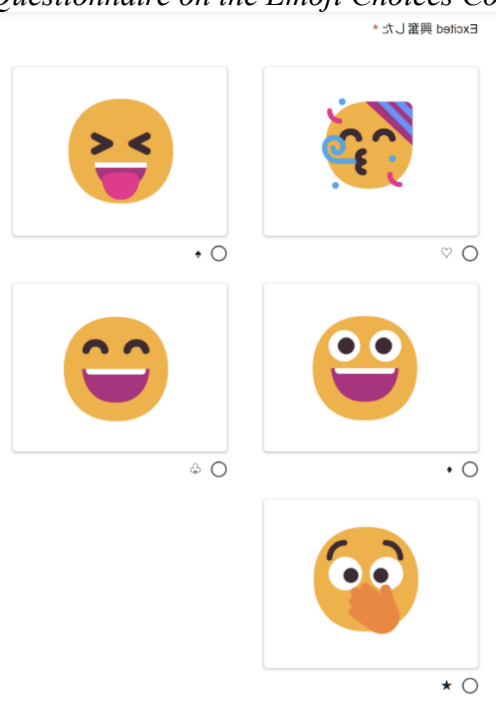
Materials and Procedure

Emotion categories were based on 32 emotions identified in prior research (Rashkin et al., 2019). Participants were presented with emotion labels in both Japanese and English and were asked to select the emoji that best represented each emotion.

This study used the Noto Color Emoji, an open-source emoji font developed by Google and used on the Android and ChromeOS platforms. Noto Color Emoji was selected for its simple and easily recognizable design. Only standard Unicode emoji characters were included, with ASCII emoticons, stickers, and other non-emoji symbols excluded. The questionnaire was administered online using Google Forms (Figure 1).

Figure 1

Questionnaire on the Emoji Choices Corresponding to the Emotion Words



Data Analysis

Emoji selection frequencies were calculated for each emotion category, including the sum of the differences in the percentages of emoji selections between Japanese and U.S. participants for each emotion. Then, the proportions of emoji choices were compared between the Japanese and American participant groups, with particular attention paid to both the similarities and differences in emoji–emotion mappings across cultures.

Results

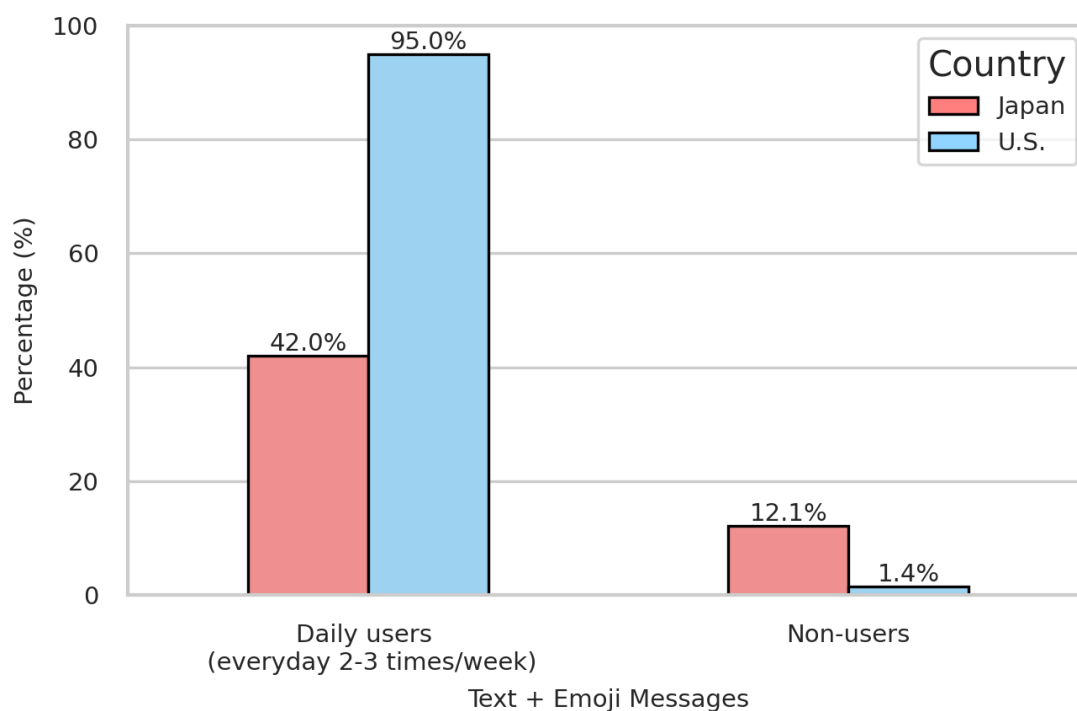
To address **RQ1**, patterns of daily emoji use between the two groups were compared. The results indicated clear cross-cultural differences in both the frequency and context of emojis used with text.

In the Japanese sample, only 42.0% of the participants reported using emojis with text on a daily basis (defined as every day to two or three times per week) whereas 12.1% reported rarely

using them. By contrast, emoji and text use were substantially more frequent among the American participants. In the American sample, 95.0% reported using emojis together with text daily (Figure 2).

Figure 2

Percentage of Students Using Text-and-Emoji Messages in Japan and the US



Regarding the usage context, the American participants most commonly used emojis in casual conversations. Emojis were also frequently employed when expressing gratitude, offering congratulations, making requests, and conveying both positive and negative emotions, with approximately 40% of the participants reporting emoji use in these contexts.

In the Japanese sample, emojis were primarily used in casual conversations and polite communicative contexts, such as thanking or apologizing. The use of emojis to express anger was notably rare and was reported by only 7.4% of the participants. Overall, these results indicate that emojis are used more frequently and across a wider range of communication contexts in everyday communication in the United States than in Japan.

To address RQ2, emoji selection patterns were compared across the emotion categories. Findings revealed that some emotions exhibited a strong cross-cultural overlap, with only minor differences between the Japanese and American samples. These included visually salient emotions, such as surprise, anticipation, feeling sentimental, and fear, for which the participants in both the cultures tended to select similar emojis.

By contrast, other emotions showed a clear divergence in emoji selection between the two groups. Clear differences were observed for relational or context-dependent emotions, including being impressed, grateful, caring, lonely, disappointed, and terrified.

Table 1*Differences in Emoji Selection Between Japanese and American Students*

Emotion	Differences
Impressed	136.1
Grateful	119.1
Caring	116.9
Lonely	116.7
Disappointed	110.1
Terrified	109.5
Trusting	102.4
Devastated	101.6
Angry	92.4
Joyful	91.7
Guilty	88.9
Furious	85.1
Prepared	82.5
Apprehensive	77.7
Content	72.7
Embarrassed	71.9
Disgusted	71.6
Sad	69.4
Confident	69.2
Ashamed	67.9
Anxious	59.1
Proud	59
Excited	56.9
Hopeful	55.6
Annoyed	55.5
Jealous	43.1
Nostalgic	41.1
Afraid	39.2
Sentimental	36
Anticipating	33.2
Surprised	28.8

Table 1 presents the overall proportions of emoji selection differences between Japanese and American university students for each emotion, summarizing the differences in cross-cultural variation (percentage divergence in emoji selection). Emotions with visually salient features, such as surprise, anticipation, feeling sentimental, and fear, resulted in similar emoji choices in both Japan and the United States (Table 2). By contrast, relational and context-dependent emotions, including being impressed, grateful, caring, lonely, and disappointed, showed substantially different emoji selections across cultures (Table 3).

Table 2
Emoji Choices for Emotions With Small Differences Between the Japanese and American Participants

		♣	♦	♥	♠	☆
1	Surprised	😬	😮	😮	😮	😮
2	Anticipating	😬	😬	😬	😬	😬
3	Sentimental	😬	😬	😬	😬	😬
4	Afraid	😬	😬	😬	😬	😬
5	Nostalgic	😬	😬	😬	😬	😬
6	Jealous	😬	😬	😬	😬	😬
7	Annoyed	😬	😬	😬	😬	😬
8	Hopeful	😬	😬	😬	😬	😬
9	Excited	😬	😬	😬	😬	😬
10	Proud	😬	😬	😬	😬	😬
11	Anxious	😬	😬	😬	😬	😬
12	Ashamed	😬	😬	😬	😬	😬
13	Confident	😬	😬	😬	😬	😬
14	Sad	😬	😬	😬	😬	😬

Table 3
Emoji Choices for Emotions With Large Differences Between the Japanese and American Participants

		♣	♦	♥	♠	☆
1	Impressed	😬	😬	😬	😬	😬
2	Grateful	😬	😬	😬	😬	😬
3	Caring	😬	😬	😬	😬	😬
4	Lonely	😬	😬	😬	😬	😬
5	Disappointed	😬	😬	😬	😬	😬
6	Terrified	😬	😬	😬	😬	😬
7	Trusting	😬	😬	😬	😬	😬
8	Devastated	😬	😬	😬	😬	😬
9	Angry	😬	😬	😬	😬	😬
10	Joyful	😬	😬	😬	😬	😬
11	Furious	😬	😬	😬	😬	😬

Discussion

Regarding RQ1, the results suggest that Japanese and American students differ in not only the frequency of emoji use but also the social role that emojis play in communication. Among Japanese students, emoji use appears to be more sensitive to context and interpersonal relationships, aligning with the norms of politeness and relational adjustment. By contrast, American students tend to use emojis more routinely, incorporating them into everyday self-expression and conversational flow. These differences can also be viewed in relation to culture-based norms governing emotional expression, which appear to extend into online communication (Matsumoto, 1990; Zhou et al., 2024). Matsumoto (1990) noted that Japanese and American communicative styles differ in how emotions are displayed, a distinction that may help account for the observed patterns of emoji use. For instance, Japanese students are more likely to use emojis to maintain politeness and preserve smooth interpersonal relationships. Given that text alone often lacks clear pragmatic cues (Seager, 2017), emojis can function as markers that soften the tone or signal friendliness. In the Japanese social context, where being perceived as rude can have significant social consequences, individuals may be particularly attentive to how their messages are interpreted and displayed. Additionally, the gender imbalance in the Japanese sample, which included a higher proportion of male participants, may have influenced the results as communication styles can vary across genders. Overall, although emojis are used in both cultural contexts, the results indicate clear differences in usage frequency and function in online exchange.

For RQ2, emotions that are visually salient showed relatively high cross-cultural agreement. This pattern is consistent with prior research, suggesting that certain facial expressions are widely recognized across cultures (Ekman & Friesen, 1971). By comparison, emojis linked to more relationally grounded emotions, such as politeness or gratitude, demonstrated greater variability. Such differences likely reflect the influence of culturally shaped social norms and interpersonal expectations (Gendron et al., 2014).

More broadly, the degree of cross-cultural divergence varies according to the emotion type. Emotions associated with visually salient or biologically grounded basic responses tended to produce smaller differences whereas socially and cognitively mediated emotions showed greater variation. This interpretation aligns with developmental accounts of emotion (Lewis, 2000), which emphasize that whereas some affective responses emerge early and are biologically rooted, more complex social emotions develop through cognitive maturation and social experiences. Consequently, these later-developing emotions may be more susceptible to cultural shaping.

Overall, the findings support the view that even expressions often assumed to be universal may be subject to cultural interpretation. This appears to apply to not only facial expressions but also emojis as symbolic representations of emotions.

Conclusion

The study findings indicate that cultural differences shape not only how frequently emojis are used but also how they function in communication. Japanese university students tend to use emojis to convey positive emotions and ensure politeness, particularly in contexts such as requests, expressions of gratitude, and celebratory interactions. Emoji use also strongly depends on relational and contextual factors, including interlocutor sensitivity.

By contrast, American university students reported more frequent emoji use, often employing emojis as standalone messages. Emojis were used to express a broader emotional range, including negative emotions, with comparatively less hesitation.

Differences between the groups were especially pronounced for relational or context-dependent emotions, such as feeling impressed or being grateful, for which the participants selected different emojis across cultures. Conversely, visually salient emotions, including surprise and fear, showed greater cross-cultural similarity, suggesting the presence of shared visual cues in emotion recognition.

Collectively, these findings suggest that although certain emotional expressions may exhibit cross-cultural similarities, emoji interpretation and usage remain embedded within culturally shaped communicative norms. Nevertheless, the limitations should be acknowledged. The sample exhibited a gender imbalance, which may have influenced emoji usage patterns, as emoji use can vary by gender.

The present study contributes to cross-cultural research by linking emoji interpretation to broader theoretical discussions of emotion universality and cultural display rules. By demonstrating that visually salient emotions show greater cross-cultural agreement whereas socially mediated emotions exhibit stronger divergence, the findings extend emotion research into the domain of digital communication. Emojis should be understood not merely as pictorial icons but as culturally situated pragmatic resources. Therefore, emojis cannot be assumed to function as a universally transparent representation of emotion, and greater attention to cultural variability in their use and interpretation is needed in digital communication research.

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Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

The author declares that Grammarly, an AI-assisted writing software, was used in proofreading and refining the language used in the manuscript. The usage was limited to correcting grammatical and spelling errors and rephrasing statements for accuracy and clarity. The ideas, design, procedures, findings, analyses, and discussion are originally written and derived from careful and systematic conduct of the research.

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