The past and future of hand emoji

Lauren Gawne,[1] Jennifer Daniel,[2]
[1] La Trobe University
[2] Google
l.gawne@latrobe.edu.au, jenniferx@google.com

Abstract

Human handshapes have been encoded as emoji since the earliest implementations. The flexible and accessible semantic domain of human gestures has continued to provide a source of new emoji. We provide an overview of the history of hand gestures in the Unicode emoji set. We then discuss the utility and challenges of encoding hand emoji, as well as the current direction being taken by Unicode.

Gestures are one semiotic resource people draw on to communicate. The stable and often wide-spread form/meaning relationship of some handshapes as gestures has made them an attractive resource for encoding as emoji. The communicative accessibility of hand-based emoji is evident in the fact that hands (distinct from other body part emoji) are the third most commonly used type of emoji, behind hearts and faces (McCulloch 2019), and two gesture emoji are in the top 10 of use-frequency data across platforms in a dataset from Unicode, Folded Hands (🙏) at #5 and Thumbs Up (👍) at #10 (2019).

The popularity of emoji is in tension with the fact that they operate as a centralised standard. Taking a look at the communicative function of particular types of emoji, in this case gestural handshapes, can help assess the communicative value of emoji and chart a future that sits with Unicode's renewed priority of globally relevant emoji (Unicode 2021a). In this short paper we provide an overview of the history of hand emoji. We then look at the benefits and challenges of including human hand emoji in the encoded set. This frames a discussion of the future utility of continuing to encode hand emoji. Taking stock of a particular type of emoji allows for a more thoughtful approach to delivering communicatively useful emoji.

We use 'gesture' to mean intentional bodily action used in communication (Kendon 2004, McNeill 1992), and focus on hand and arm gestures, rather than facial expressions or gestures with other parts of the body. The line between gesture and other actions is not hard-and-fast, and highly context dependent (Goodwin 2007). We use 'handshape' to refer to any manipulation of the hands into a particular configuration without necessarily indicating communicative meaning. A single handshape emoji can be used for a gesture or an action, particularly in combination with other emoji (e.g. 'mic drop' ✋🎤). This communicative flexibility is a useful feature for emoji encoding.

Figure 1: The original Softbank and Docomo handshapes.

1 The history of hand emoji

Hands were included in emoji inventories prior to Unicode encoding (Figure 1). The 1999 Docomo set of 161 emoji included four hand gestures; Raised Fist, Victory Hand, Raised Hand, and Oncoming Fist. An earlier set of 90 emoji from Softbank in 1997 included these three as well as Index Pointing Up, Thumbs Up and Raised Fist. Although we have given these characters their Unicode names, across both sets the Raised Fist, Raised Hand and Victory Hand were originally encoded as Rock, Paper and Scissors from the game of the same name, before being renamed when they were encoded by Unicode (Scherer 2010). This explains the horizontal orientation of the Softbank set, and the colour distinction in the Docomo set. Although used, and named, as gestures now, these emoji started out as actions.

By the time Emoji 1.0 was encoded by Unicode in August 2015 there were 29 gesture emoji. These mostly included handshapes, including five different pointing gestures (☝️👆👇👈👉) but also a face (Thinking Face 🤔) and four torso emoji (Person Gesturing No 🙅, Person Gesturing OK 🙆, Person Tipping Hand 💁 and Person Raising Hand 🙋) as well as the monkey trio (🙉🙈🙊). Some of the characters in Emoji 1.0 were adopted from the Docomo set, some were already in Unicode as dingbats or other symbols, and others were added from submissions to Unicode.

Subsequent to Emoji 1.0, new handshapes has been encoded across releases. Emoji 3.0 (June 2016) gave us Raised Back of Hand (✋), Crossed Fingers (🤞), Call Me Hand (🤙), Left-Facing Fist (🤛), Right-Facing Fist (🤜), Person Facepalming (🤦) and Person Shrugging (🤷). Emoji 5.0 (2017) included Face with Hand Over Mouth (🤭), Shushing Face (🤫), Love-You Gesture (🤟) and Palms Up Together (🤲). Emoji 12.0 (2019) included Yawning Face (🥱), Pinching Hand (🤏), and Deaf Person (🧏) and Emoji 13.0 (2020) included Pinched Fingers (🫰).

The Upcoming Emoji 14.0 set has relatively large number of hand emoji, including Saluting Face, Face With Open Eyes And Hand Over Mouth, Face With Peeking Eye, Hand With Index Finger And Thumb Crossed, Rightward Hand, Leftward Hand, Palm Down Hand, Palm Up Hand, Index Pointing At The Viewer and Heart Hands. Rightward and Leftward hands have been included specifically as a mechanism to create a mixed skin-tone handshake using a Zero Width Joiner (ZWJ) sequence.

There have been two other important developments relevant to handshape emoji. The first is the inclusion of Skin Tone modifiers in Emoji 2.0 in December 2015, and Gender modifiers in Emoji 4.0 in November 2016. Both of these employ the ZWJ mechanism to create a single character out of a combination of features. The Gender modifiers have been applied to all of the torso-scale gesture emoji, while the Skin Tone modifiers apply to all of the hand and torso emoji above, except the monkeys. These modifiers are relevant to the function of handshape emoji because it takes them from generic representation, to more specifically representing a particular individual performing a gesture. Throughout this paper we illustrate examples with the default yellow emoji tone, although we acknowledge that this 'default' still centres whiteness (Sweeney and Whaley 2019). Skin tone modifiers are usually used to personalise emoji, although the Black Lives Matters (BLM) movement has seen particular semantic valence attached to Raised Fist darker skin tones: 🤎 rather than 🤛🏻 or 🤛. Future emoji encoding needs to take into account that the same gesture performed by emoji representing different skin tones or genders may result in more specific contextual meanings, as we've seen with the raised fist.

Some emoji are have hands inconsistently across platforms. These include Face Screaming in Fear (😱) and Weary Cat (🙀), which have hands in the Twemoji set, but not in all. There are also hands performing actions with objects, including Writing Hand (✍️) and Nail Polish (💅), and the many human activity emoji (e.g. 🤺🤾). We focus on handshapes with gestural functions, rather than a distinct action as represented by the inclusion of objects.

Across Unicode emoji releases hands have remained a persistent source of new emoji, and uptake has generally been enthusiastic; the Pinching Hand emoji was the third most anticipated of 2020 by Emojipedia users (Emojipedia 2020), and was second in growth of use in 2020 on Twitter, behind yawning face (Broni 2020).

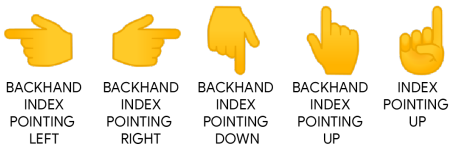

Figure 2: Pointing gestures currently encoded

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1.1 Functions of encoded hands

Emoji and their use alongside written text have been described elsewhere as analogous with gestures and speech (Gawne and McCulloch 2019). The presence of hand gesture emoji, and their popularity, re-enforces this parallel. The most sophisticated analyses of the use of emoji discuss how they are used as pragmatic markers of speaker intention as well as indicating emotional effect (Dresner and Herring 2010, Na'aman et al. 2017). Handshape emoji have a range of different functions that are carried over from physical gestural use to the emoji space.

Here we discuss three main functions we observe in handshape emoji; pointing, emblems and actions. These are drawn from the Gesture Studies literature (including Kendon 2004 and McNeill 1992, 2005). Any meaning for a handshape is context-dependent; for example, Index Pointing Right might refer to an injured finger (👉🔨), or be calling for service (👉⛑). Therefore, this discussion of the types of gesture that are encoded takes the name of the emoji into account as the primary criterion for assigning categories. Understanding the variety of gestural functions of emoji handshapes can help steer future encoding plans.

Pointing gestures are used to refer to locations or objects, whether they be concrete or abstract, visually-present or not. Many Westerners think of index finger pointing as prototypical, and while common cross-culturally, is far from a universal (Cooperrider et al. 2018). Other pointing styles include middle-finger pointing and lip pointing. We also direct attention using gaze, and the Eyes emoji (👀) can function as a pointing gesture, even though the direction of the gaze is not consistent across platforms. Pointing emoji include Backhand Index Pointing Left, Right, Up, and Down, and Index Pointing Up (Figure 2).

Emblem gestures have a stable form that corresponds to a specific meaning for a particular cultural or linguistic group (Payrató and Clemente 2019). The stable meaning and form results in emblems often being recognisable and named by users. For a Thumbs Up, the same meaning is not conveyed by another finger pointing up, or the thumb pointing down. The meaning of a Thumbs Up is to acknowledge something 'good', although the specific function can vary depending on the context, including greetings, acknowledgements, agree-

Figure 3: Emblem gestures currently encoded

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ments and leave-taking (Sherzer 1991). Emblem gestures are far from universal, but can be found in cultural areas that extend beyond a single language (Morris et al. 1979). We identified 19 emblems in the current emoji set (Figure 3). Many, like Thumbs Up and Victory Hand have a very wide distribution thanks to Western cultural influence. Some are less wide-spread in recognision, but are relevant to early emoji adopting user groups, including the Person Gesturing No and Person Gesturing OK emblems from Japan, and the Vulcan Salute. Some vary depending on cultural context; Call Me Hand is also identified as the Shaka, while the Sign of the Horns gesture indicates appreciation in heavy metal music contexts, but in Italy and Greece is an insult that means 'cuckold' or a curse placing the evil eye upon somebody (Morris et al. 1979). Emblem emoji are currently overwhelmingly drawn from Western culture.

Actions is our catch-all term for hands in poses that could be used alongside other emoji to indicate a range of actions, and emoji where the hand is being used alongside an expression or action that does not fit with the definition of an emblem gesture (e.g. Yawning Face 🥱) (Figure 4). Actions also encompasses the category of 'iconic' gestures (McNeill 1992: 78), which represent concepts from the speech context as gestures. Person Tipping Hand 💁) can be used as a proxy for the Shrug emoji in which case it could function as an emblem, but is often used to display a particular emoji object or indicate the action of serving someone. The Pinching Hand could be used as an iconic gesture to indicate something small, or it could be used to represent actually holding an object (🤏🥨). Although we have given each emoji a primary categorisation, these examples again demonstrate that encoding gestures as emoji allows for functional communicative flexibility in a way that basic object emoji do not.

This brief survey of emoji hand functions demonstrates that hand emoji are not a single-function category like many

Figure 4: actions currently encoded

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object and action emoji. Instead the use of hands as ways of making meaning through gesture and performing other actions allows for a range of functions.

2 Benefits and Challenges

Handshapes make a convenient resource for emoji encoding, but there are also challenges to what can be done with handshapes in the emoji format. Articulating these factors can help shape what might be done with gesture emoji in the future.

2.1 Benefits

One fundamental benefit of encoding handshapes as emoji is the flexibility and accessibility they offer. Below we outline how this flexibility works.

Wider domain than languages. Emblem gestures can have a consistent meaning in a cultural area that is wider than a specific language (Morris et al. 1979). There are many emblem gestures that are used by very small and specific social groups, but others are meaningful for wide cultural areas. Some gestures are so deeply linked to the way humans process their experience of the world that they recur meaningfully across cultures, such as the palm up to indicate some kind of question or uncertainty that gives us the Shrug (Cooperrider et al. 2018).

Use alongside language. Gesture in parallel with speech is a ubiquitous feature of human communication (McNeill 1992). Emoji are frequently used alongside written text (Medlock and McCulloch 2016), so encoding gestures as emoji for people to use alongside text is a natural extension of what people commonly do. Even though gestures often occur alongside speech, they can also convey meaning in its absence, thus providing communicative flexibility.

Flexible meaning. We use our hands to do many things. This means that handshapes and other gestures can be more flexible in their use than visual representations of concrete objects or full-body representations of specific activities. A gesture may have more than one meaning as an emblem. For example the OK Hand can also be used to mean zero, particularly in France (Morris et al. 1979: 114), or can be used in combination with other emoji, e.g. with the kiss to create a

chef kiss (😘👌). Handshapes can also have different functions across gesture categories, as we have discussed above.

2.2 Challenges

While there are many benefits to including gesture-based emoji in the encoded set, there are also challenges to the functionality of handshapes as emoji.

Gestures aren't universal. While there are widespread and recurring gestures, no single gesture is universally understandable. This also extends to the use of hand shapes to encode meanings in signed languages. For example, the Love You gesture and and Deaf Person emoji both have meaning specifically in American Sign Language (ASL). Other signed languages may share these lexical items, but not necessarily. Some handshape emoji have specific meanings in some signed languages, distinct from the meaning for speakers of other languages. For example, the Thinking Face emoji is the ASL sign for 'lesbian'.

Gestures convey taboos. Across cultures people use gestures as a way of directing offence, such as a raised middle finger, or indicating something euphemistically, such as a raised little finger for 'toilet' in India. This, combined with the fact that no gesture is universal, means that gestures that have an innocuous or positive meaning in one area can be offensive elsewhere. For example, Thumbs Up in Greece and Southern Italy is analogous to a raise Middle Finger in other regions (Morris et al. 1979). The OK Hand can be used as an offensive gesture in a similar region, extending through to Turkey (Morris et al. 1979). The frequent taboo function of emblem gestures means that the inclusion of new handshapes requires due diligence with regards to potential offence.

Emoji are static images. Gestures and other human actions are dynamic, but emoji are static images. There are a small number of emoji that generally include dynamic action lines in representations across platforms, including Waving Hand, Clapping Hands, Raising Hands and Deaf Person. The lack of dynamic representation limits what kinds of gestures could make for good emoji candidates. It is for this reason we think emblem gestures are a good source of potential future emoji, because they often have meaning while static.

Another challenge is that there are few emoji with clear handedness in their Unicode description. There are some, such as the pointing hands, which indicate orientation, which at least limits variation across platforms, but others such as Pinching Hand vary in orientation across platforms (Figure 5), which can influence how people use them, especially in combination with other characters.

We don't know enough about the world's gestural diversity. There is an insufficient literature on the diversity of forms and meanings of gestures across linguistic and cultural groups. Surveys are either limited in their geographic coverage (Morris et al. 1979 focused on 20 gestures in Western Europe), or lack any source of evidence for gesture meanings reported (Caradec 2018, Morris 1994). Emoji are used globally, but still reflect Japanese origins and subsequent Western additions. This has unintentionally created gestural zones of exclusion, but we lack the data to map what those exclusions might be. There are potentially handshapes that have an emblem gesture function for large cultural areas that could make valuable additions to the emoji set.

Figure 5: Pinching Hand emoji across platforms

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3 The Future of Hand Gesture Emoji

With this knowledge about the useful, and not-so-useful, features of handshapes and gestures as an ongoing category for emoji encoding, we now look to the future of hand gesture emoji.

Unicode's Emoji Subcommittee (ESC) has published two recent guidance documents on the encoding of gesture emoji. These specific guidance documents sit alongside the general criteria for proposals for new emoji (Unicode 2021b). These documents were created to give better guidance to people intending to propose new emoji, and to also give the ESC clearer guidance in assessing the merits of submitted proposals.

The first is a document of general guidance (Emoji Subcommittee 2020a). This document outlines features of handshapes that would make particularly compelling emoji, including categories such as emblems and handshapes that are flexible enough to have multiple meanings, particularly in combination with other emoji.

The second is a list of gestures that could make for potential emoji candidates (Emoji Subcommittee 2020b). This includes two broad types of candidates. The first are gestures with some potential for encoding if evidence of widespread use can be provided, including a sideways thumb, and a benediction hand with index and middle fingers extended. The second are those that often appear in gesture inventories, but are already representable, such as a finger gun, where the Pistol emoji already represents the object, or a chef's kiss, which can be represented with and existing bigram (😘👌). This list draws on a number of published surveys of gesture, but a lack of primary documentation of gesture-use across cultures makes it very difficult to know if there are common handshapes that could be encoded that are meaningful in regions of Africa, Asia or South America.

Future handshape emoji need to consider the communicative functions of gestures, discussed above. Pointing gestures currently account for 90 degree rotational directions. The inclusion of Index Pointing at the Viewer (Pauluk and Pschk 2020) as a provisional candidate for Unicode's Emoji 14.0 release demonstrates that there are possibly more options for the orientation of pointing gestures that have not

yet been considered. Although we have singled out emblem and pointing gestures as particularly useful handshapes, the most compelling future handshape emoji proposals would demonstrate that they have multiple uses, either as emblems with different meanings for different cultural groups, or as emblems for some groups and use as actions or pointing gestures for other users.

There are two strands of potential research that can enrich our understanding of the function of handshape emoji. The first is to look at whether there are changes in frequency of use and collocation of different handshapes across different cultural areas for the existing emoji set. This would provide insight into how people are currently making use of the flexibility of handshape emoji. The second is to conduct more work mapping emblem repertoires across cultural areas to identify handshapes that could make for potential future emoji.

This paper has focused on handshape emoji and their communicative function, but it is possible to extend this approach to any subset of emoji. Instead of thinking of the communicative function of all emoji as a consistent single set, bringing in domain-specific perspectives allows us to see how particular subsets of emoji can be used to convey meaning.

4 Conclusion

Emoji that represent hands are a relatively small but frequently used emoji type. The familiarity and flexibility of meaning made by the human hand makes gestures a potentially attractive source of new emoji. To ensure that hand emoji continue to be high-value for users, we need to take into account the features that make gestures and actions so compelling, while also being aware of the challenges of what can be represented in emoji format. In parallel we need better data about gesture use and meaning beyond a small number of cultural groups to ensure emoji are relevant to a wide range of users.

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References

Broni, K. 2020. Emoji Trends That Defined 2020. URL http://blog.emojipedia.org/emoji-trends-that-defined-2020/.

Caradec, F. 2018. *Dictionary of gestures*. MIT Press.

Cooperrider, K.; Abner, N.; and Goldin-Meadow, S. 2018. The palm-up puzzle: Meanings and origins of a widespread form in gesture and sign. *Frontiers in Communication* 3: 23.

Cooperrider, K.; Slotta, J.; and Núñez, R. 2018. The preference for pointing with the hand is not universal. *Cognitive Science* 42(4): 1375–1390.

Dresner, E.; and Herring, S. C. 2010. Functions of the nonverbal in CMC: Emoticons and illocutionary force. *Communication Theory* 20(3): 249–268.

Emojipedia. 2020. Emoji statistics. URL http://emojipedia.org/stats/.

EmojiSubcommittee. 2020a. ESC Guidelines around Gestures and Emoji. URL http://unicode.org/L2/L2020/Register-2020.html.

EmojiSubcommittee. 2020b. Gesture Emoji for Consideration, Unicode 15.0. URL http://unicode.org/L2/L2020/Register-2020.html.

Gawne, L.; and McCulloch, G. 2019. Emoji as digital gestures. *Language@Internet* 17(2).

Goodwin, C. 2007. Environmentally coupled gestures. *Gesture and the dynamic dimensions of language* 195–212.

Kendon, A. 2004. *Gesture: Visible action as utterance*. Cambridge University Press.

McCulloch, G. 2019. New emoji are so boring—but they don't have to be. URL http://wired.com/story/why-unicode-keeps-adding-boring-emoji/.

McNeill, D. 1992. *Hand and mind: What gestures reveal about thought*. University of Chicago Press.

McNeill, D. 2005. *Gesture and thought*. University of Chicago Press.

Medlock, B.; and McCulloch, G. 2016. The linguistic secrets found in billions of emoji. URL http://slideshare.net/SwiftKey/the-linguistic-secrets-found-in-billions-of-emoji-sxsw-2016-presentation-59956212.

Morris, D. 1994. *Bodytalk*. Crown.

Morris, D.; Collett, P.; Marsh, P.; and O'Shaughnessy, M. 1979. *Gestures: origins and distribution*. Jonathan Cape.

Na'aman, N., P. H. . M. O. 2017. Varying linguistic purposes of emoji in (Twitter) context. *Proceedings of ACL 2017, Student Research Workshop* 136–141.

Pauluk, M.; and Pschk, C. 2020. Proposal for Emoji: INDEX POINTING AT THE VIEWER (L2/20-212). URL http:/unicode.org/cgi-bin/GetDocumentLink?L2/20-212.

Payrató, L.; and Clemente, I. 2019. *Gestures we live by: The pragmatics of emblematic gestures*. Walter de Gruyter.

Scherer, M. 2010. Emoji Symbols: Background Data L2/10-132. URL http://unicode.org/L2/L2010/10132-emojidata.pdf.

Sherzer, J. 1991. The Brazilian thumbs-up gesture. *Journal of Linguistic Anthropology* 1(2): 189–197.

Sweeney, M. E.; and Whaley, K. 2019. Technically white: Emoji skin-tone modifiers as American technoculture. *First Monday* 24(7).

Unicode. 2019. The most frequent emoji. URL http://home.unicode.org/emoji/emoji-frequency/.

Unicode. 2021a. Now accepting Unicode emoji proposals. URL http://blog.unicode.org/2021/04/now-accepting-unicode-emoji-proposals.html.

Unicode. 2021b. Submitting emoji proposals: Selection factors. URL http://unicode.org/emoji/proposals.html#selection_factors.