

tween us, when we pay attention to each other and care about the effect that we have on each other. When we learn to write in ways that communicate our tone of voice, not just our mastery of rules, we learn to see writing not as a way of asserting our intellectual superiority, but as a way of listening to each other better. We learn to write not for power, but for love. But for all the subtle vocal modulations that typography can express, we're not just voices. We still need a way to convey the messages that we send with the rest of our bodies.

Chapter 5

Emoji and Other Internet Gestures

Our bodies are a big part of the way we communicate.

If someone stamps into a room with a furrowed brow, slams the door, and proclaims, "I'M NOT ANGRY," you believe their body, not their words.

If someone is sobbing and wiping away tears as they say, "No, no, there's nothing wrong," you don't reply, "Great, glad to hear it, that's a relief, let's go dancing!" You say something like "I mean, it sure looks like something's wrong, but if you don't want to talk about it I understand."

If a good friend looks you in the eye, grins, and says, "You're the most terrible person I've ever met!" you don't think, "Oops, I guess this person isn't my friend after all." You think, "Awesome, we're such close friends that we can mock-insult each other and we both know we don't mean it!"

Likewise, a lot of our language about emotion is embodied—our

hearts race, our eyebrows arch, our cheeks flush, our stomachs but-terfly, our throats, um, frog. Writing is a technology that removes the body from the language. That's its greatest advantage—it's easier to transport and store words written on paper or in bytes than embodied in an entire living human or a hologram of one. Sometimes, you wouldn't even want the body component: just because I ambitiously decide to keep a copy of Plato's *Republic* beside the toilet does not mean that I want Zombie Socrates taking up residence in my bathroom.

But the lack of a body is also writing's greatest disadvantage, especially when it comes to representing emotions and other mental states. In the early days of going online, it seemed like we had a very clear eventual answer to the question of virtual embodiment. In the future envisioned by Neal Stephenson's 1992 novel *Snow Crash*, or the 3D virtual world *Second Life*, launched in 2003, it seemed like we'd all be making full-bodied avatars for ourselves, with hands and feet and hairstyles, to bodily interact with each other in virtual space. The idea was that these avatars would project in cyberspace whatever we'd do in the physical world, whether logistical or emotive: thus we'd enter rooms and shake hands and roll on the floor laughing.

On a technical level, we've gotten quite good at projecting and manipulating a virtual body. It's a central feature for entire genres of videogames, from first-person shooters to *The Sims*. But for general socializing, it never quite took off. *Second Life* made a lot of headlines, but it remained popular only in a smallish subcommunity of internet users, and similar efforts are even more obscure. The closest thing most of us have to a social avatar is the profile picture we use on social media apps—hardly the ambitious three-dimensional graphics that *Second Life* or *Snow Crash* imagined. True, profile pictures do provide some sense of who you're talking to and what they (or their dog) look like. But they're static. My profile pic has the

same fixed, photographic smile, regardless of the message I type beside it. What we really need is a dynamic system. Punctuation is good at representing tone of voice, but we're still missing something, something embodied. This was the void that emoticons and emoji stepped into, those smiley faces made from repurposed punctuation marks and those small pictures of faces and hearts and animals and all manner of other objects.

I first got involved with the linguistics of emoji in 2014. I'd written some articles about meme linguistics and internet linguistics, and as emoji started hitting the news in a big way (over six thousand articles were written about the emoji released in 2014 alone), I became one of the people who journalists and tech companies called up to analyze emoji. I did a talk at South by Southwest, a tech culture conference, in partnership with smartphone keyboard app *SwiftKey*, looking at the overall picture of how people used emoji based on *SwiftKey*'s billions of anonymized data points. When we put the proposal together in 2015, I was slightly worried that emoji would have blown over by the time of the conference, a whole eight months away. But instead, they were more popular than ever, and the jam-packed room of people who came to our talk agreed, as did the newspapers in six countries that reported on the talk later.

The question on everyone's mind was: Why? Why were emoji so popular, so quickly? By the time you've called up a linguist to answer this question, you've pretty much decided that the answer is "because they're a new language." But as the linguist being called up, I wasn't so sure. I was just as fascinated as anyone by emoji as a phenomenon, but linguists have a definition of what language is, and it's very clear that emoji don't fit in it.

Here's a demonstration: when we were coming up with the South by Southwest talk, we spent about half a minute bating around the idea of whether we could give the talk entirely in emoji,

before realizing that it would be impossible to convey anything useful or interesting that way. Even just putting the slides entirely in emoji was too much: we needed to be able to label our graphs and ask focusing questions. In comparison, I also speak French, and I could definitely have given the talk in French, even though I would've had to look up a few words. I could've also attempted to give the talk in Spanish or German, and the fact that I couldn't give a talk in the rest of the world's seven thousand languages is not due to any failing on their parts, simply my lack of fluency. (Alas, being a linguist has not conferred upon me the ability to speak all the languages.) Yet no matter how "emoji-fluent" we and our audience were, there was no way to give the presentation entirely in emoji: a whole hour of reciting emoji might be an interesting piece of performance art, but there was no way for it to be the funny, informative talk we'd promised. There isn't even a clear way to say "emoji" in emoji, let alone a way to render, say, this paragraph. Real languages can handle meta-level vocabulary and adapt to new words with ease: every language has a name for itself, and many have recently acquired a word for "emoji," just to take one salient example. Emoji aren't capable of either.

What Are Emoji For?

Emoji aren't the same as words, but they're clearly doing *something* important for communication: I just needed to articulate what that was. Inspired by the fact that the face and hand emoji were consistently the most popular, I began talking about emoji as gesture. I made lists of common gestures and emoji to find correspondences. The lists got long: shrug, thumbs up, pointing finger, rolling eyes, middle finger, winking face, clapping hands, and so on. All of these exist in gestural and emoji form, but there were also many that

didn't: the eggplant emoji and the fire emoji didn't have equivalent gestures, and nodding "yes" or shaking one's head "no" didn't have emoji. I was at a standstill.

That's when I sent a draft of my emoji analysis to Lauren Gawne, an Australian linguist who's also a good friend and my cohort on the podcast *Linguistiasm*. She highlighted my list and commented, "You know there's a name for this kind of gesture in the literature, right? They're called emblems."

I did not.

Oh, I knew Gawne did gesture research, but we'd never really talked about it much. After all, it's not like we could gesture on the podcast. I assumed she didn't care to talk about the gesture side of her research. She assumed I wasn't interested. Suddenly, I was very interested.

You know how when you learn the word "schadenfreude," and something clicks into place? You're not uniquely terrible in occasionally taking pleasure in someone else's misfortune: other people have been there before you. I'd been spending months and years with emoji, categorizing and analyzing them, and here was this one word that blew them all open. Someone has been here before me, a whole body of scholars, in fact, and they'd figured stuff out. I dived headfirst into the gesture literature. By the time Gawne was awake again in Melbourne, I'd exhausted Wikipedia and sent her a dozen questions. Delighted, she forwarded me the reading list for her whole gesture course.

I spent the next week in a daze. It was like I was thirteen again, encountering linguistics for the very first time: eavesdropping on people in public places with fresh ears and eyes, thoughtfully examining the positions of my hands and fingers in cafés the way that I'd once experimented with sounds and sentences under my breath in libraries. (I became utterly incapable of having a normal conversa-

tion, because I kept getting derailed by analyzing the gestures—it was hard enough when I only got derailed by the words!) When I discovered linguistics, I learned that language isn't just a squiddy mess of opinions and impressions: there are real patterns here that I've been subconsciously following all along! Even if we don't know them all yet, they're fundamentally knowable, and there's a whole community of people whose mission it is to figure them out. What I hadn't realized until now was that the same thing is true for gesture. Like I can listen to a person's vowels and plot out which parts of the mouth it takes to make them and where that means they might have lived, thanks to my linguistic training, I could also learn to spot the different kinds of gestures and what each was for.

You might ask, as I asked myself, how did I manage to get two degrees in linguistics and go to dozens of linguistics conferences but never learn anything about gesture? I'm not alone: gesture studies has been gaining ground, but it's still a smallish subfield. There are some universities that have gesture linguists and offer a course or a unit on gesture, but many still don't: Gawne happened to go to universities that had gesture studies, and I happened to go to ones that didn't. If there were gesture talks at any conferences I went to, I didn't have enough context to know why I should make a point of attending. Neither, Gawne and I suspected, did many other linguists, because we hadn't seen anyone else drawing these parallels between emoji and gesture either. So she started in on an academic paper using the examples I'd collected, and I rewrote this chapter with her guidance on the literature.

I've always been a sucker for a good taxonomy of everyday life, and gesture gave me a great one. But what was even better was that the same taxonomy worked just as well to describe how people use emoji. This was the missing link. Looking for a grand unified theory of emoji had been dooming me to failure because emoji don't just

have one function, they have a range of them. But crucially, it's the same range that gestures have, and that's why emoji caught on so quickly and so completely: because they gave us an easy way of representing the functions behind the gestures that are so important for our informal communication. Without realizing that either gestures or emoji were potentially systematic, a couple billion internet users had subconsciously, collectively, and spontaneously mapped the functions of the one onto the capacity of the other.

Let's get back to emblems, the word that cracked everything open. I'd been making a list of gestures, like thumbs up, waving, winking, shrugging, jazz hands, rolling one's eyes, giving someone the finger, tugging out an imaginary collar to indicate awkwardness, playing a metaphorical tiny violin in false sympathy, brushing imaginary dirt off one's shoulders, dropping a metaphorical mic, making a heart with one's fingers, and so on. Many of these gestures have direct emoji equivalents: peace sign 🕊️ and thumbs up 👍 and crossed fingers 🤞 and rolling eyes 🙄 and winking 🙈.

But what I'd also been doing, without realizing it, was making a list of gestures that have common names in English. I don't have to describe to you that a wink involves the deliberate closing of one eye or that a thumbs up involves the four fingers curled in on the hand, the thumb protruding and oriented to the sky, with the palm of the hand facing towards the speaker—as a speaker of English, these are things you already know. I was doing this for purely practical reasons (describing gestures in detail takes effort), but it turns out that these nameable gestures have some important things in common. Many theorists call them emblems, the way that a Jolly Roger is an emblem of a pirate. Emblem gestures can all fit easily into a linguistic frame (try any of them in a sentence like "If we're late, then _____"), but they're also perfectly meaningful without speech at all. The same thing goes for many emoji (you can say "If we're late, then 🏴‍☠️" or "If

we're late, then 🙄), but it's also sufficient sometimes to reply with just a thumbs up or eye-rolling emoji.

Emblem gestures have precise forms and stable meanings. They may seem universal because they often cover different territories than languages do: the middle finger, or *digitus impudicus*, was also considered rude in ancient Greece and Rome, while the palm-inwards V sign means "up yours" in some English-speaking nations but not others. But ultimately, emblems are arbitrary and culturally specific: obscene emblems from around the world include thumbs up ("sit on this" in many Arabic-speaking countries), the ok sign ("asshole" in many Latin American countries), an open hand thrust forward (the Greek *mouniza*), a fist with the thumb between the index and middle finger (the Russian and Turkish "fig" gesture), and a gesture known as the *bras d'honneur* or Iberian slap (common to many Romance-speaking countries), which consists of extending one arm palm-up in a fist while the other hand is placed on the upper arm at the crook of the elbow. Perform one of these inside its region and you'll get anything from a rude gesture in return to legal prosecution for obscenity; perform it outside its region and no one will care. (An American recently told me about how, when visiting Japan, she was surprised to see people casually using their middle finger to press buttons on elevators and microwaves.) Perform one of them in a subtly wrong way (try flipping someone off with your palm facing towards them, instead of towards yourself), and you'll get laughed out of town.

The kinds of emoji that end up in emoji trend piece articles ("10 Emoji You Should Be Using Right Now!") sometimes also have taboo meanings. The eggplant emoji 🍆 is a prime example: widely used as a phallic symbol, it's a natural heir to the obscene gesture list above. The smiling pile of poo emoji 🍌 is another: in deciding whether to include it in Gmail, the Japanese engineers had to ex-

plain its importance to the head office. They described it as: "It says 'I don't like that,' but softly," and "That's unfortunate, and I would like to punctuate my comment with a reiteration that I am displeased at what has just been expressed." It's the anti-like. (For me, what made the poo emoji "click" was parsing it as "a bit shitty.") But what's crucial about emblem emoji is that they also have precise forms: some designers initially implemented the poo emoji without the smiling face, but this leaves out an essential aspect of its meaning. When emoji were first catching on internationally, a surprisingly big problem was emoji fragmentation: different app or device manufacturers were displaying the same underlying emoji with different designs. Platforms had not anticipated how much people would hate it when sending a lady in a red dress could result in their friends seeing a disco man or a blobby figure with a rose in its mouth: designers thought they were free to put their own company's spin on the general idea of "dancer." People felt as foolish sending the wrong dancer emoji as you would giving the middle finger backwards or crossing the wrong two fingers, and companies eventually backed down: the *Emojipedia* blog hailed 2018 as "The Year of Emoji Convergence." If we think of these emoji as emblems, we know that the range for variation is tiny indeed.

Thinking of certain types of emoji as emblems can also make it clearer what they're doing with respect to language. The key feature of emblems is that they're nameable gestures, and dictionaries naturally have entries for gestures like "wink" and "thumbs up" in their status as English words. Similarly, the names of certain emoji (already English words or phrases) are taking on additional connotations which originate with emoji but don't require the emoji itself. I've noticed a few people using nonculinary "eggplant" with no mention of the emoji at all: in one headline, a singer "Mistakenly Shared Photo Of His Eggplant On Instagram." If this usage continues, it will clearly

be necessary to add a new subdefinition under “eggplant” (joining the existing euphemistic senses of words like “banana” and “sausage”). But this doesn’t mean that dictionaries necessarily need to keep an inventory of all emoji, even the non-emblem ones, any more than they already do for the non-emblem gestures.

Emoji aren’t the only way to express emblems in internet communication. An early fan of Snapchat described the appeal of sending messages overlaid on top of a photo you’ve just taken as “like texting, but you get to use your face as the emoticon instead of an actual emoticon.” In other words, texting but with emblematic gestures. Animated gifs, while technically looping, silent animated image files that can display any image, are often used in practice to display emblems. The most engaging gifs have been found to be those with faces in them, a feature that’s come to be reflected in user interfaces. When you go to insert a gif on Twitter, the built-in categories of gif that you’re offered are nameable, stylized gestures by humans, cartoon characters, or occasionally animals, such as applause, eww, eye roll, facepalm, fistbump, goodbye, happy dance, hearts, high five, hug, kiss, mic drop, no, omg, ok, popcorn, scared, shocked, shrug, sigh, wink, and yawn. Certain gifs are so emblematic that they can be invoked by name, without an image file at all, just like a thumbs up or an eggplant emoji: when you want to convey your excitement in observing other people’s drama, you can send a gif of Michael Jackson eating popcorn in a darkened movie theater, eyes avidly glued to the screen, but you can also simply say #popcorngif or *popcorn.gif*.

It’s not an accident that the most iconic popcorn.gif is one of Michael Jackson. Both gestural and digital emblems participate in cycles of appropriation from African American culture: the high five came from a Jazz Age gesture known as the low five or “giving skin” and spread via sports teams, and the fistbump came from the “dap”

among black soldiers during the Vietnam War. Similarly, the painting fingernails emoji entered the mainstream by its association with the black drag queen expression “throwing shade,” for giving a subtle, cutting insult. In an article called “We Need to Talk About Digital Blackface in Reaction GIFs,” Lauren Michele Jackson pointed out that black people are overrepresented in gifs used by nonblack people, especially those that show extreme emotion. She linked this stereotype to the exaggerated acting of minstrel shows and scholar Sianne Ngai’s term “animatedness” to describe the long-standing tendency to see black people’s actions as hyperbolic.

There are other gestures that don’t have conventional names, which I’d been ignoring entirely because they’re hard to describe in words. But we use them even more than we do emblems, because they come with us in practically everything we say. You’d probably gesture when saying, “Keep going that way and turn at the lights” and “The fish was THIS big” and “The person sitting next to me just kept going on, and on, and on . . .” but your gestures don’t have specific names, only descriptions. For directions, you’d point to indicate which way is “that way” and which direction to turn at the lights; for indicating size, you might put your hands flat, facing each other some distance apart; and for “going on and on,” you might make some sort of open hand shape, moving repeatedly in a rough circle.

If you try talking with your hands tied down (recruit a friend to make sure you get untied!), you’ll probably have a hard time with it. Researchers have done this: they showed people cartoons of Wile E. Coyote chasing Road Runner and asked them to describe them to someone else. Half the time, the describers had their hands fastened to the chair, ostensibly to take physiological measurements, but really to see what happened when they weren’t able to gesture. The

researchers found that when you can't gesture, you have a harder time telling the visual and spatial parts of a story: people talked slower, paused more, and were more likely to say "um" and "uh."

Every culture that's been studied has gesture, and we gesture along with our speech even when it's communicatively useless, such as when we're talking on the phone. Even people who have been blind since birth do it, even when they're talking with people who they know are also blind. But it's not so much about an irresistible temptation to wink or flip someone the bird: the gestures we can't help doing are the ones without specific names. So linguists think that this other kind of gesture, called co-speech or illustrative gesture, is more about the thinking of the speaker than the understanding of the listener. Sure enough, people who are encouraged to gesture do better at solving math problems and mental rotation.

The next time you're in a restaurant, have a look around you at the groups of people at other tables. You probably won't see a lot of emblems, but you're guaranteed to see some co-speech gestures. Look at some people at a table far enough away that you can't hear them: you can tell who's speaking when by who's gesturing. You can probably get a sense of how well they're getting along, whether they're laughing merrily or you're about to witness an awkward fight, but the content of their conversation remains private because the meaning of co-speech gestures is more dependent on their surrounding speech. For example, the thumbs up sign could also be used as a co-speech gesture to indicate "up there." But "up there" could just as easily be illustrated by the index finger or whole hand pointing up, using one or both hands, the eyes or eyebrows pointing up, or any of these things combined—none of which work as a substitute for the thumbs up emblem.

We can see this same flexibility at play when it comes to illustrating birthday greetings with emoji. People wish others a happy

birthday using the cake with candles 🎂, the slice of cake 🍰, the balloon 🎈, the wrapped gift 📦, the bouquet of flowers 🌸, or general positive emoji such as hearts, sparkles, happy faces, confetti, and positive hand shapes like the thumbs up or fistbump. These emoji showed up in the SwiftKey dataset in a wide variety of combinations and orders. When you're illustrating your speech, you're more willing to accept a range of options as suitable for "birthday" or "beach" or "fun" or "danger." The birthday cakes display variously as chocolate, vanilla, or strawberry, with an inconsistent number of candles, across different platforms, and yet "The Year of Emoji Convergence" did nothing to make them more similar.

People were bothered by variation in the form of the dancer emoji because it was serving as an emblem, and emblems add their own separate meaning to the words they go with. But people were unruffled by variation in the form of the birthday cake emoji because it's an illustration, and illustrative emoji instead highlight and reinforce a topic that's already present. It's okay if illustrators aren't quite exactly on target: the surrounding words will provide enough context to interpret them correctly. For the emblem emoji, we tend to know exactly what we're looking for because we've seen other people using it first. For illustrative emoji, we often go browsing through our keyboards instead.

But sometimes, when we go fishing for an illustration, we realize in surprise that there's nothing at all suitable: "What?? How is there no _____ emoji??" The problem here is that emoji were added through a hodgepodge of historic compatibility and individual request, not designed as a systematic attempt to cover all areas of semantic space. (More on this later, when we get to the history of emoji.) Birthdays are a well-filled-in area of emoji illustration, but other domains are less so, especially those beyond emoji's original roots in Japan or first transplant in the United States.


The illustrative, co-speech emoji are interpretable at face value: it takes cultural knowledge of birthday traditions to interpret a cake and a balloon, sure, but it doesn't take any particular internet literacy to know that sending these items as emoji is intended to evoke birthday wishes. Illustrator emoji are readily used even by people who are less familiar with internet cultural norms: it's easy to add a cat emoji to "Have you fed the cat yet?" But many an inadvertent grocery-store innuendo has been texted by someone who was treating the eggplant as an innocent illustrator rather than a suggestive emblem.

The final emoji puzzle is how we use them in combination with other emoji. One type of sequence, which gets a lot of attention, is the retelling of familiar stories in emoji: *Emoji Dick* is a retelling of *Moby-Dick* in emoji, the #EmojiReads hashtag featured people's renditions of stories like *Lord of the Flies* and *Les Misérables*, and Emoji Karaoke is a game where you see who can come up with the best emoji version of a song before it stops playing. It's easy to see how these fit in with the idea of emoji as gesture: they're like playing digital charades or pantomiming to a friend across a loud bar. Emoji pantomime and other "stunt" uses of emoji are fun, but what I wanted to know was, is this truly a reflection of the generic, day-to-day use of emoji? How do emoji interface with our normal, casual writing?

To answer this, I got SwiftKey's engineers to run two queries. The first thing I wanted to know was, what percent of things that people write are describable as emoji stories: emoji-only utterances that are at least five or ten emoji long? If emoji storytelling were truly common, if (as the headlines would have it) emoji were taking over from English, we should find lots of emoji-only messages. We did not. The

vast majority of messages were text only. Of the ones that contained emoji at all, the vast majority put them alongside words. And of the messages that were only emoji, the majority were just one or two emoji long—presumably replies to something else. Less than one in a thousand messages were long enough that they might qualify as a potential emoji story. In fact, the only people I've been able to find who regularly communicate with extended emoji sequences are preliterate children. Many parents have told me about how their two- to five-year-old kids enjoy texting them messages full of dinosaur or animal emoji—but then these same kids start sending words instead of emoji once they learn how to read.

So, long emoji sequences weren't common, but our dataset was still really large. What did these rare sequences of potential emoji storytelling look like?

This was my second question. I got SwiftKey's engineers to extract the most common sequences of two, three, and four emoji. This is a common way of analyzing a large body of writing. The difference between a mere list of words and a story is that a story's words are arranged in sentences and paragraphs: a collection of narratives has subpatterns among its common words that reflect the basic structure of the language itself. If you look at the most common sequences of two, three, and four words for the half-billion words of the Corpus of Contemporary American English, you get sequences like "I am," "in the," "I don't," "a lot of," "I don't think," "the end of the," "at the same time," "as well as," "for the first time," "one of the most," and "some of the." They're not riveting prose by themselves, but you can feel how well they'd work as glue to hold a more interesting story together. If people are commonly writing stories in emoji, looking for patterned emoji sequences is how we'd find them. We might expect, for example, a lot of the red circle with a line through it  to indicate negation, or that emoji representing people,

like 🙄 or 🙃, would often be followed by the arrow emoji ➡, indicating a person going somewhere.

Instead, what we found was repetition. Looking at the top two hundred sequences of each length, about half were pure repetition, such as two tears of joy emoji 😄😄, three loudly sobbing emoji 🥲🥲🥲, or four red heart emoji ❤️❤️❤️❤️. Those that weren't simple repetition were often complex repetition, such as snow around a snowman ❄️❄️❄️, the see-no-evil, hear-no-evil, speak-no-evil monkeys 🙈🙈🙈, and kiss faces with kiss marks 😘😘😘. Even the most heterogeneous strings of emoji were always thematically similar, such as heart eyes and kiss face 😍😍 or single tear and loudly crying 🥲🥲🥲, strings of related objects like birthday 🎂🎂 or fast food 🍕🍕, and strings of hearts in different colors or sizes such as 🍷🍷🍷.

Emoji aren't behaving like words in this respect: there are no repetitions at all in the top two hundred sequences of two, three, and four words in the Corpus of Contemporary American English. We don't even get strings of all nouns or all adjectives the way we got strings of thematic emoji. Sure, words are sometimes used repetitively (🌨️ to mean "no snow" or 🍕 to mean "I like pizza"). But nothing like this shows up in the top lists. You might use several similar adjectives to reinforce each other (such as "big bad wolf"), but you wouldn't intertwine them in complex repetition (there's no "big bad big wolf"). Furthermore, emoji ordering wasn't very important (different kinds of hearts or birthday-related emoji appeared in all sorts of orders), whereas word ordering is often important ("bad big wolf" and "red small car" just feel wrong). It's essential to look at what's common if we want to understand how emoji fit into our communicative systems: after all, what distinguishes emoji from any other set of little pictures is that billions of people use them on a

daily basis. The true emoji question is what billions of people are currently doing with emoji, not what an advertiser or a philosopher thinks they could hypothetically do with them. The part of communication where we repeat stuff all the time isn't in our words, it's in our gestures.

Look over to your imaginary co-patrons at the imaginary restaurant again. Here's someone with a hand loosely curled, palm upwards, moving it up and down to make a point. Someone else nods vigorously. Another person's finger loops the air emphatically several times. Someone taps the table in quiet boredom. A politician on TV brings an open hand down on the podium over and over again to drive home a point. These repetitive gestures are known as beats. You can do any shape of gesture in the style of a beat, whether it's repeatedly flipping someone off, pointing emphatically several times, or simply an open-handed beat that comes along for the ride in our regular conversations. What's important about the beat is the rhythm: when you stutter out loud, your beat gestures stutter with you. When you hold a vowel for a loooong time, your beat gestures hold a silent scream for just as long.

Emoji have the same rhythmic tendency as beat gestures. That's what the repetition is telling us. We type 🐼🐼🐼 because we might also blow multiple kisses, we type 🍷🍷🍷 because when we give the thumbs-up gesture, we sometimes do it rhythmically or hold it up for several seconds to emphasize it. Like how we can extend the letters of a word for emphasis, even when the result is unpronounceable ("sameeeee"), we can repeat even those emoji that don't have direct gestural correlates, like the skull 🐼 or the smiling pile of poo 🍌 or the sparkle heart 💫, because we've generalized this behavior to the category as a whole.

One use of emoji that's explicitly beat-related comes when each word is followed by a clapping hands emoji, as in WHAT 🙌🙌🙌 ARE 🙌🙌

YOU DOING. This started as an emoji representation of a beat gesture common among African American women. Comedian Robin Thede described the “double clap on syllables” in a *Nightly Show* segment on “Black Lady Sign Language.” But as writer Kara Brown put it when the gesture started making mainstream news headlines, “This—this clapping on every word for emphasis—is something that I have done since I was a cantankerous youth.” In 2016, it started spreading to mainstream Twitter users unaware of its offline, African American origins. But whether online or offline, it’s a beat.

The emoji combinations story also explains a puzzle that I encountered when analyzing the SwiftKey data: the case of the missing eggplant emoji. We knew that people were fond of the eggplant emoji as a phallic symbol: heck, you can buy eggplant emoji plush toys and keychains. And yet, when we looked at the top two hundred most common sequences of two, three, and four different emoji, the eggplant was nowhere to be found. We did find other, less famous, sexual combinations, such as the tongue emoji with water droplets 🌧️, or the pointing finger and the ok sign 🇺🇸. But the eggplant emoji only showed up as pure repetition 🍆🍆 in our Top 200 lists. Same for the smiling pile of poo, another classic emoji that you can buy as endless novelty items: people were happy to repeat it 🍌🍌, but reluctant to combine it. What gives?

This mysterious absence of these classic emoji makes sense if we think about the difference between how emblems and co-speech gestures deal with sequences. Co-speech illustrative gestures are fluid, going smoothly from one into the other, with lots of possible shapes and variations for essentially the same meaning. If you describe the path of where you’ve gone today, you’ll use many gestures in a row and you could easily gesture it slightly differently when you

tell me about it now and when you told someone else about it a few minutes ago. Same with illustrative emoji: you can depict “Happy Birthday” or the weather with different sequences on different days, and that works fine. Emblems, on the other hand, are discrete, individual gestures: they can repeat, but they don’t combine. You can applaud for a long time or flip someone off repeatedly, but you can’t un-applaud someone or un-flip someone the bird, even if you combine them with the widely understood head shake that means no. In the same way, both the eggplant and the smiling poo emoji are emblem emoji: they have conventional meanings not immediately obvious from their literal origins, and they don’t combine readily either. That’s why we tend not to see them in interesting emoji sequences like we saw the birthday party emoji. Sending someone all of the possible birthday party emoji is extra festive: great! But sending someone all of the possible phallic emoji (say, the eggplant and the cucumber and the corn cob and the banana 🍌🍌🍌) is NOT extra sexxaayy: that’s a weird salad. There are multiple kinds of gestures and multiple kinds of emoji. Paying attention to how emoji fit with each other can give us a renewed appreciation for the gestures we make every day.


How We Got Emoji

When we think of emoji as gesture, it’s clear why they caught on so quickly. But it leaves us with the inverse question: What took us so long to figure out a way to write our gestures?

Well, we tried.

Writing used to have illustration all the time. Medieval scribes illustrated their manuscripts with everything from the classic illuminated capital letters to a bizarrely popular motif of knights fighting

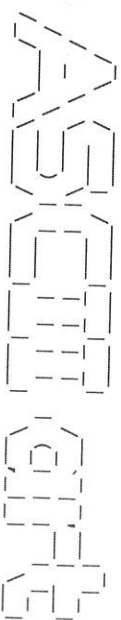
giant snails at swordpoint. It was really the printing press that made us think that books should be composed primarily of walls of text: letters became significantly easier to produce than drawings. After all, once you've cast a set of metal letters, you can type any arrangement of words you could possibly want, but each new picture has to be engraved from scratch for printing. In theory, early printers could have created small, versatile metal drawings, too. In practice, they tended to be conservative about making new pieces of type: the first English printers imported their presses from Continental Europe, where no one used the English letter þ (thorn), so English printers substituted either the "th" letter sequence (which won out in most places) or the similar-looking letter "y" (which survives in a few limited contexts like Ye Olde Tea Shoppe). If printers weren't willing to cast a genuinely important letter, well, you can see why pictures were banished to book jackets and frontispieces and children's books. But the other factor preventing us from obtaining a delightful inventory of Renaissance emoji was psychological. What we thought we wanted out of writing was still very different: printing was a formal context, and handwriting was still around for informal doodles. We didn't yet have the sense that we could demand emotional expression in the same place as our standardized typesetting.

The chief variety of written gesture for a long time was the *manicule*, or printer's fist , a pointing finger drawn or typeset in the margins of manuscripts to call attention to a particular passage. It was in widespread use from the twelfth to eighteenth centuries, used by medieval monks adding notes, printers calling attention to corrections or additions, and Victorian readers highlighting passages they wanted to remember. It only fell out of use around the same time that the stylized arrow shape was developed in the early nineteenth century.

Informal writing, however, retained a considerable array of ways

to ornament our text: doodles were popular with authors from Lewis Carroll, who himself drew a series of sketches for the original handwritten version of *Alice's Adventures in Wonderland*, to Sylvia Plath, who drew in both her own diaries as well as the margins of books she owned. (She was especially fond of cows.) Even if you lacked their doodling skills, you could express your aesthetic sensibility by ornamenting your personal correspondence with different-colored ink and monogrammed, bordered, textured, or even scented paper. You could also borrow images from other people, by cutting out printed photographs and quotes and gluing them onto your pages, as people did with commonplace books in the eighteenth and nineteenth centuries, and with printed stickers and scrapbooks in the modern era. Some of the 1970s postcards that we saw in previous chapters had handwritten smiley faces and doodled animals.

Early computers weren't much better than printing presses, as we saw in the previous chapter, with even fewer character and font options. But people did make borders, words, and artwork using punctuation symbols, a style known as ASCII art after the ninety-five printable characters defined by the ASCII encoding system of early computers, and later extended once more characters were available to mean any sort of art created with text-based symbols. (Text-based art itself is older, dating back to the limited graphics capabilities of typewriters.) The ASCII art below, for example, uses slashes, back-



```
(\ \ /)
(= ' . ' =)
(" ) _ (" )
```


slashes, underscores, and the occasional parenthesis and apostrophe to make hollow letters reading "ASCII art" and a slightly wider array of symbols including double quotes and equals signs to make a simple bunny rabbit. More ambitious examples could contain thousands of symbols and portray elaborate shading or an entire scene.

One major advance in internet gesture happened as the result of a serious miscommunication on the Carnegie Mellon University computer message system. Most of the time, the message system was pretty serious: announcements of talks in the computer science department, lost and found items, and heated discussions about politics and which keyboard layout was the best. But one day in September 1982, messageboard users started goofing off by posting absurd hypothetical questions about the physics of elevators in free fall. What would happen, wondered one person, if you put a helium balloon in an elevator and cut the cable? Or what if, wondered a second person, you put a bunch of pigeons in a free-falling elevator? Okay but what if, wondered a third, the birds were breathing the helium? Would their cheeping get higher-pitched? A fourth person had an idea for a similar experiment: What if you put a tiny drop of mercury with a lit candle in the free-falling elevator?

Alas, I am a linguist and can provide the answer to none of these questions. What I care about is what happened next. First, the setup: someone continued the joke: "WARNING! Because of a recent physics experiment, the leftmost elevator has been contaminated with mercury. There is also some slight fire damage. Decontamination should be complete by 08:00 Friday." Then, the problem: other people logged into the message system and saw only the fake warning, minus its necessary context. A few hours later, someone had to get back on and clarify that the warning was fake: "My apology for spoiling the joke but people were upset and yelling fire in a crowded theatre is bad news...."

Finally, the solution: the CMU users switched to brainstorming ways to indicate that a particular message was intended as a joke (this wasn't the first time a user's attempt at humor had been taken seriously). Various options were proposed—putting an asterisk * or a percent sign % or an ampersand & in the subject line, posting all messages with a numerical 0-10 "Humor Value," creating a separate messageboard just for jokes, or using the sequence {#} "because it looks like two lips with teeth showing between them" or the sequence _/, which looks like a smiling mouth. But the idea that caught on was a suggestion by a professor named Scott Fahlman. Here's the original message that he posted, dug up from dusty 1980s archives, from back when computer records were preserved on reel-to-reel tapes:

```
19-Sep-82 11:44      Scott E Fahlman      :-)  
From: Scott E Fahlman <Fahlman at Cmu-20c>  
I propose that the following character sequence  
for joke markers:
```

```
:-)
```

```
Read it sideways. Actually, it is probably more  
economical to mark things that are NOT jokes,  
given current trends. For this, use
```

```
:-(
```

The idea of a simplified smiling face already had a considerable history, so Fahlman's sideways proposal was straightforward to interpret. It was also easy to type, and was thus quickly picked up by other participants in the message thread, and within a couple months people were using sideways text faces beyond Carnegie Mellon and had come up with a wide variety of creative expansions on the

sideways idea, including non-face examples like the heart <3 and the rose @>-->--. Many of the more elaborate examples, like sideways portraits of famous people, circulated more in lists of clever faces than in actual usage. (It's unclear when a person would ever need to invoke Abraham Lincoln by smiley, but here he is ==(:-)= complete with tall hat and beard.) A few classics like :-): (-:): ?(-: -P, and later their noseless variants :) (: :) :(:P, remained the most popular.

Symbols like :-) were named emoticons, a combination of the words "emotion" and "icon." One useful side effect of emoticons is that they let you incorporate the facial part into your running text, right alongside your words, rather than using a large, unwieldy image that has to go on a new line—even if it's made out of the same ASCII characters as the rest of your message. Just like gestures and facial expressions fit seamlessly with spoken words, punctuation-based emoticons can directly accompany typed words.


Filling an important niche, the text-based emoticons grew and changed. The meaning of the basic smile shifted after Scott Fahlman's original proposal, from indicating a joke to indicating a more general positive sentiment, a marker of sincerity: "that's great :)" is sincere, not sarcastic. The nose fell out of favor among younger people: in 2011, a study of emoticons on Twitter by linguist Tyler Schnoebelen found that noseful emoticons were used by people who also tended to tweet to celebrities like Pepe Aguilar, Ashton Kutcher, and Jennifer Lopez, whereas those who tweeted noseless emoticons tended to prefer to tweet to Justin Bieber, Miley Cyrus, the Jonas Brothers, and Selena Gomez. (For the benefit of readers from the future who don't have a degree in Early Twenty-First Century American Pop Culture, I'll point out that Justin Bieber and the like were very popular among teenagers in 2011, while Kutcher, Lopez, et al. were an older set of celebrities. This strongly

suggests that younger people were dropping the noses in their emoticons.)

Around the same time as emoticons were developing in the United States and on English-speaking networks, another form of digital face was developing on an early Japanese computer network known as ASCII Net. They were called kaomoji, from the Japanese *kao* (顔, "face") and *moji* (文字, "character"). Kaomoji are like emoticons, but you don't have to turn your head sideways to read them, allowing for virtually any pair of symbols to be used to represent the shape of the eyes, not just symbols like :) and =) that are already found in a pair. Classic kaomoji such as ^_^ (happy), T_T (crying), and o.O (wide-eyed) are nearly as old as emoticons—there are claims of them appearing on ASCII Net as early as 1985 or 1986.

The emphasis on the eyes was important for kaomoji because of a broader cultural difference in how emotions are represented. When researchers show East Asian and Western Caucasian people photos of faces displaying different emotions, the Asian participants tend to make conclusions about the emotions based on what people are doing with their eyes, whereas the Western participants look to the mouth to read emotions. This tendency is reflected in the different conventions for portraying emotions in manga and anime versus Western cartoons, and it shows up again in the stylized faces of emoticons and kaomoji. Happy :) and sad :(emoticons can have the same eyes but must have different mouths, whereas happy ^_^ and sad T_T kaomoji can have the same mouths but must have different eyes. Some kaomoji have caught on more broadly among English speakers, especially those that narrate actions of the whole body rather than relying solely on the eyes, such as shruggie _(ツ)_ since 2014, flower-in-hair (●_●) since 2013, and table flip (´°□°´ ~ _ _ since 2011. But the kaomoji that purely convey emotion through the eyes seem to require a certain minimum level of fluency with a set of cultural

conventions that most English speakers simply don't have (unless they're manga or anime fans).

By the late 1990s, you could include images on your website just by digging out the connection cable for your newfangled digital camera or combing through other people's GeoCities pages for exactly the right "under construction" gif to borrow. In Japan, something new had caught on beyond kaomoji: sending picture messages back and forth on cellphones. Unfortunately, it was impractically popular, because it took a lot of data to send and receive them. So in 1997, the Japanese cellphone carrier SoftBank found a solution: What if they encoded some common pictures the way they encoded text characters? After all, when you text a friend the letter A, your phone doesn't send pixel-by-pixel each tiny dot in the grid that would make up a *picture* of the letter A, your phone just sends one short number code like 0041 and your friend's phone knows that 0041 makes an A and displays it. If you could send a simple number like 2764 to display a heart , things would go much faster than sending a whole image file. So designers at SoftBank created short number codes for ninety small pictures, including icons for weather, transit, time, and sports apps, as well as hearts, hands, and a few faces that looked a lot like the existing kaomoji. This was the origin of the emoji that we started talking about earlier.

Although the word "emoji" resembles the English "emoticon" ("emotion" + "icon"), the word actually comes from the Japanese *e* (絵, "picture") and *moji* (文字, "character"), the same *moji* as in kaomoji. This coincidence did probably help the word catch on among English speakers, but typing the symbols wasn't quite as straightforward. These small, easy-to-send pictures quickly became popular in Japan, and other Japanese cellphone carriers got busy adding their own sets of emoji. But here they ran into a problem. The whole point of emoji was to save space by assigning number codes to small

pictures, but different phone manufacturers were using different sets of images and different number codes for them. So if you had a phone with DoCoMo and you texted a heart emoji to your friend whose phone was from SoftBank, your friend might see an indecipherable box, nothing at all, or worse yet, an entirely different symbol like an umbrella or a music note. (One common point of confusion was that people who thought they were sending a Taurus zodiac sign from DoCoMo phones would end up appearing to have sent a picture of a normal cow when received on a KDDI phone. Which could be...awkward.)

The organization that's in charge of standardizing the number codes for normal letters and numbers and punctuation characters is called the Unicode Consortium. The Unicode Consortium is a small committee of people who live at the intersection of tech geek and font nerd, and are mostly employees of major tech companies trying to make sure that, say, when you copy and paste an apostrophe from one program to another, or type an apostrophe on one device and view it on a different one, it doesn't mysteriously change into æ™ instead. This problem is fairly rare and confined to punctuation symbols for English, which was privileged to have its letters ubiquitously encoded very early. But the names for this problem in other languages speak to the frustration: Japanese *mojibake*, "character transformation" (that's the same *moji* as in *emoji*); Russian *brakozabyry*, "garbage characters"; German *Zeichensalat*, "character salad"; and Bulgarian *majmunica*, "monkey's (alphabet)." Multiply that by all the symbols in all the scripts of all the languages around the world, add in special symbols for mathematical notation and music notes and over six hundred styles of arrows (seriously), and you have the unglamorous but very important monkey-salad-garbage-transformation job that Unicode™s been doing since 1987.

The members of the Unicode Consortium had definitely not

signed up to become the smiley faces people. In 2000, as emoji first started taking off in Japan, they politely declined to get involved, leaving DoCoMo and SoftBank and KDDI to hash out between each other the compatibility of picture messages (or, in some cases, the lack thereof). If sending small images encoded like text was just going to be a momentary fad in one country, that was below the pay grade of an international standards organization. But emoji hung on in Japan, and multinational companies started getting involved. Gmail needed its Japanese users to be able to send and receive emails with emoji in them. Apple wanted people in Japan to buy iPhones, but they wouldn't buy a phone that didn't support emoji. Ten years later, perhaps emoji weren't just a fad anymore, so in 2010, into Unicode they went.

But which emoji? By this point, SoftBank's initial set of ninety emoji had expanded as other Japanese carriers had come up with their own additions, so the initial set of emoji that were added to Unicode contained 608 symbols that were common in Japan. Now encoded, emoji arrived on Apple devices in 2011 and Android in 2013. The international support and cross-device compatibility solved a problem for Japanese texters, but it also helped emoji become popular outside of Japan. And become popular they did. Just five years after emoji entered the international stage, in early 2015, the most popular emoji, tears of joy 😄, surpassed the usage level of the most popular emoticon, ;).

As more and more people from around the world began using emoji, however, it became more and more apparent that even 608 symbols weren't enough. People started questioning—If there's a unicorn and a dragon, why no dinosaur? If there's a man in a turban, why not a woman in a hijab? If there's sushi and hamburgers, why no taco or dumpling? All of these emoji have been added, many in response to proposals from ordinary people who figured out the

process from the Unicode website or with the help of grassroots emoji proposals organization Emojination. But the set of emoji remains a work in progress: the Unicode Consortium is still taking requests, still rolling out a hundred or so new emoji each year.

Even with these expansions, the official Unicode process is slow and deliberative by design. At its core, Unicode is still a unique, uniform, universal encoding system. The goal is to create symbols that work on every device in the world long into the future. No more blank boxes. This means that once Unicode adds a symbol, they never remove it—doing so would defeat the purpose of a unified standard. That's also why Unicode doesn't accept emoji proposals for celebrities and pop culture references. They'd be fun for a while, but our great-grandchildren won't really need their keyboards cluttered with the faces of one-hit wonders from the early twenty-first century. To get around this, there are individual apps that use an emoji aesthetic with larger, more-of-the-moment pictures, which are sent as normal image files rather than encoded like letters, known as customizable emoji keyboards and sticker apps. Plus of course, there are still gifs, and even the regular kinds of images that you find or make for yourself.

As the hype settles down, as we move into a stage where emoji use is becoming ordinary and unremarkable rather than the subject of daily news articles, we need to reckon with the enduring legacy that the first emoticons, and then even more strongly emoji, have left us with. In a few short years, in the span of an internet generation, we've radically changed our expectations for what we should be able to do with informal writing. We're no longer content to leave full communication only to channels that allow faces and voices. We demand that our writing also be capable of fully expressing what we want to say and, most crucially, how we're saying it. Any solution to this problem would have had to solve some similar problems to what emoji have,

but why did emoji in particular catch on so quickly? What qualities do they have that any future would-be rival must meet or surpass?

Why Emoji Won

At a purely technical level, emoji come with some significant advantages, which we can see by comparing emoji to punctuation-based emoticons on the one hand, and animated gifs on the other. Emoticons are supremely easy to type, since they're made of punctuation already on your keyboard, but there's only so many recognizable figures you can make out of punctuation characters. Emoticons are good for your basic couple of smiley faces, but they become less practical as they get more elaborate—users of kaomoji inevitably find themselves either installing a kaomoji text expansion app or repeatedly googling “shruggie” and copy-pasting from the top search result. Gifs, on the other hand, are infinitely complex, with real faces and animations and full lines of dialogue written on as captions. But they have the inverse problem: there's so many of them that it's hard to get the one you want, and they're so large and distracting that they don't integrate seamlessly with a line of text (they take up their own line even when you're in an app that has a built-in gif search). Gifs are fun to use occasionally, but they're impractical to incorporate in every other sentence. Emoji strike a happy medium between the two: your most-used emoji show up in their own, easy-to-access section of your emoji picker, but there's also more there if you want to go exploring. They intermingle easily with everything else you're typing, rather than demanding their own new line, and they're easy to copy-paste and send from one app or device to another, at least as long as Unicode has the ones you want.

But it's certainly true that emoji, emoticons, and gifs all exist in

the same ecosystem, and even certain words seem to have a related function. Instagram engineers looked at the most popular emoji used on their app and created a list of words people also use in a similar context. They found that people use the face with tears of joy emoji 🥳 in the kinds of sentences where they might otherwise have used lolol, lmao, lololol, lolz, lmfao, lol, ahahah, ahaha, lmaooo, or lolll; they use the heart emoji ❤️ in the same contexts as words like xoxoxox, xoxo, xoxoxoxoxo, xxoo, oxox, babycakes, muahhh, mwahh, babe, and loveyou; and they use the loudly crying emoji 🤪 like they use ugh, ughhhh, wahhhh, agh, omgg, omfg, and whyyy. When one format isn't available, the others can work as substitutes: a study by linguists Jacob Eisenstein and Umashanthi Pavalanathan showed that people who use more emoji rely less on other expressive resources, like plain text emoticons ;), repeated letters (yayyy), acronyms (lol), and other creative respellings (wanna).

There's a deeper question about the appeal of digital embodiment, though, regardless of whether it surfaces as emoji, emoticons, gifs, or another form. The facial expressions are by far the most popular, and yet there's an important way in which they're not like our ordinary kinds of facial expressions. When we're interacting with other people, we find the most trustworthy kind of facial expression to be the kind that's given off involuntarily: the burst of laughter or sob in the throat that's difficult to fake. And yet you can't involuntarily give off an emoji. They're all given out deliberately—you choose exactly which one to send, and you know that everyone else does, too. Emoji and all of their relatives are fake by definition. If we try to say that they map directly onto our emotional facial expressions, then we have a weird mismatch. How is it that we're so keen on such disingenuous symbols? What's to enjoy about a world where everyone is wearing a mask?

A paper by linguists Eli Dresner and Susan Herring has a compelling answer. Rather than think about emoticons as emotional, they

argue, we should think about them as deliberate cues to the intention of what we're saying. Sometimes that intention does align with an emotion: if you say "I got the job :)" you're indicating that you're happy about it. But sometimes you put on a facial expression aspirationally, the way you might put on a polite social smile during a customer service interaction, even if you're having a terrible day, just to make things proceed smoother. A smiley face might be used in a context like "I'm looking for some suggestions :)"—you might be anxious rather than happy about requesting feedback, but you're using the smiley to make the request more polite. Moreover, people sometimes use smiley faces in contexts that aren't happy at all. Dresner and Herring quote a person saying "I feel sick and tired all the time :)"—the speaker isn't happy or even smiling about feeling sick and tired, but might include the smiley to indicate that they don't want their words to be read as a complaint. The same statement with :(on the other hand, could be intended as a request for sympathy.

The basic smile emoticon :) or emoji 😊 is a versatile tool for this kind of contextualization. It can soften other kinds of harsh statements: making a demand into a softer request, or a seeming insult into softer teasing. As psychologist Monica Ann Riordan points out, saying an insult plus a smiley doesn't mean smiling while insulting someone, or being happy about how terrible someone is: the smiley changes the intention behind the whole insult into a joke. A smiley can even indicate outright rejection, in a polite sort of way. Journalist Mary H.K. Choi did a series of interviews with a diverse cross-section of American teenagers about how they use technology and emoji for a 2016 article in *Wired*. One teen explained that he would exchange various heart emoji while flirting, but the worst emoji for a girl to send back was the smiley face—"Yeah, that's the 'Thank you, but I'm not interested.'"

Dresner and Herring point out that spoken language already has a well-established distinction, dating back to a British philosopher of language named J. L. Austin in the 1950s, between the actual words you're saying and the effect that you mean to have on the world in saying them. (Whether you actually succeed, says Austin, is a slightly different philosophical category.) If I say, "There's a car coming," I may be intending a warning (Step back!), an insult (road rage), a promise (I have booked it for ten o'clock tomorrow morning), or a complaint (I thought we were alone on this desert island!). Or if I say, "That's a nice shirt," I could be complimenting it, hinting that I want to borrow it, or even criticizing it by calling attention to it at all (But why are you wearing it in this sauna?).

We have a lot of tools at our disposal for conveying our intended effect: we can add explicit, clarifying words like "Watch out!" or "I promise . . ." we can add strategic pauses and vocal inflections, we can rely on our shared knowledge of context, and we can gesture. It turns out that gesture linguist Adam Kendon has also invoked Austin's idea of clarifying the intentions behind an utterance as a way of explaining what emblems do in communication. Think about saying "Good job!" along with a nameable, emblematic gesture: with a thumbs up, it's a congratulations; with a wink, it's a sly prod; with a facepalm, it's a sarcastic acknowledgment of failure; with the middle finger, it's an insult.







We've circled back to another reason why it makes sense to think of emoticons and emoji as gestural rather than emotional: thinking this way resolves the apparent contradiction between emotional facial expressions and the emoticons that supposedly represent them. Sure, it's constructed, but a thumbs up is constructed, too, and both can still be genuine. If we say instead that people are consciously using them to guide their readers to the correct interpretation of their words, then emoticons become a positive, helpful, social behavior, a way of saying, "I want to clarify my true intentions for you."

It's not the more negative behavior of putting on a mask. It's true that a smiley face doesn't always mean that the speaker is happy (an uncontrollable, genuine smile), but it does align with a deliberate, social smile, or the exclamation mark that proves you're not a Stone-Hearted Ice Witch. All three can indicate that I'm asking politely, I don't want to impose, I'm actually joking, I'm letting you down gently, or a passive-aggressive, "Oh no, of *course* I'm not mad." It's not so much that every emoji has a direct analogue in gesture; it's that we can use them both to accomplish similar communicative goals.

Bodies don't just communicate gesture: they also exist in space and time, and emoji can help us get across similar meanings in virtual space. Sometimes, you don't actually have anything informative to say to the other person, and all you're looking to communicate is subtext: "I see this," "I'm listening," or "I am still here and I still want to be talking with you." In physical space, we often convey this through the body: you know when other people are near you and you can tell whether they're paying attention to you or whether you're looking at the same thing. Even if neither of you is saying anything, you can make eye contact, touch, or even just look over and see that the other person is still there. (Unless someone is being very, very sneaky.) In virtual space, sneaky happens by default. You're only felt to be present when you're saying something (save for a few limited exceptions, like videochat and avatars in Second Life or social games).

A simple way to let someone know you've seen their post is by liking it. This can be used for acknowledging big life events, like a wedding or a baby. Liking can be the precursor to something more: if you like a few of someone's posts and they like yours back, you might take that as a sign they're open to further conversation. It can also be a way of trailing off: by liking the final post in a thread, you indicate that you've seen the other person's message and decided

there was nothing left to say. Liking can also backfire: the "deep like" refers to a possibly accidental like on someone's post from a long time ago, which implies that you were creepily looking back through their profile.

Emoji and gifs offer a way to indicate more active listening responses: not just "I've seen this," but "I hear you and understand you." In speech, we often indicate understanding by repeating the important part or mirroring each other's gestures. If I say, "Sorry I'm late, I had a flat tire," and you reply, "A flat tire!" you're not being superfluous, you're indicating understanding. Similarly, therapists and active listening coaches often recommend making people feel heard by restating their emotions to them. Thus, I could say, "Ugh, I got a flat tire on the way here," and you might say, "Ooh, that's frustrating." Emoji can accomplish both kinds of reaction: if you say, "I want to go to the beach this weekend," I can acknowledge the topic you've introduced by replying with fish and shell and crab emoji   . Or if you say, "I miss you ,   or go one step further by finding a sad gif. Human-computer interaction researchers Ryan Kelly and Leon Watts interviewed a cross-section of young adults, primarily from the UK, about how they used emoji. One of their participants clearly illustrated the use of emoji to acknowledge a topic and close a conversation: "Yesterday we were talking about pancake day, so I just sent some pancakes [an emoji] and that kind of just, finished the conversation. It kind of just, yeah I think it says you have nothing else to say."

Beyond single responses, sending messages back and forth can be a way of digitally hanging out: even when your messages have barely any textual meaning, they convey an important subtext: "I want to be talking with you." The sending itself is the message, whether it's emoji or stickers or selfies or gifs. This practice is especially common

among teenagers, who often want to hang out with friends for hours on end in ways that seem trivial to adults around them. As a participant in the Kelly and Watts study put it: "You just start playing around with the emojis . . . like send a picture of a moon with a face on it, and then they would send me back like a cow, and I would send them back a turtle, and it doesn't mean anything, but it's just sort of funny. . . . Or like a little game, where you have to like guess what they're trying to say with all the pictures." One way that social tools catch on is when they facilitate conversation for the sake of conversation, allowing social interaction with less pressure, such as by encouraging us to send selfies or photos of our surroundings. We can't be witty conversationalists all of the time, and embodied communication tools like emoji mean that we don't have to be.

Sometimes even the fun of sending emoji or selfies back and forth pales. Our bodies—and the worlds they inhabit—are themselves colorful, animated, and interesting to look at. Words on a page, less so. After all, in the physical world, we don't often sit around in undecorated, windowless rooms and simply talk at each other. We do things together—we prepare and eat food together, we watch a show and talk about it later, we go for a walk or a car ride, we trade compliments, we point out the cute antics the dog or cat is getting up to, and so on. In digital conversations, we also bring in external objects as excuses to start up a conversation and ways to keep it flowing: a gif of a tiny turtle eating a strawberry, a sticker that makes a pop culture reference, a video that reminds us of someone's interests, a link that supports an argument we're trying to make, a camera filter that appears to give us cute animal ears. Studies find that looking at cute cat videos improves mood and that people have similar reactions to cute puppy photos as they do to cute baby photos, so gifs become a kind of emotional currency, a way of sending someone a tiny zap of positive feeling. A more in-

olved way of digitally hanging out is by playing online games with your friends, whether that's immersive-style games like *Fortnite*, *League of Legends*, and *World of Warcraft*, or casual games like *Pokémon Go* and *Words with Friends*.

Embodiment and projecting a virtual body may sound dangerously space-age—holograms!—but in many ways, embodiment is very old. Older than writing, as old as stories, perhaps as old as language itself. What does a storyteller do other than use their voice and body to project characters and feelings into the minds of their listeners? What is language other than a tool for transmitting new mental representations of the world into the minds of other people? Many theories about why language was evolutionarily useful involve things like collaboration and gossip—being able to plan together to hunt a mammoth, remember where the good berries are, or who can be trusted.

Like the failed proposals for sarcasm punctuation that we looked at in the previous chapter, generations of people have tried to reform English spelling, but even when spelling reform *iz perfektlee lejib!*, somehow it never *katschiz* on. The most we get is fragmentation, for example when some parts of the English-speaking world switched to *-or* or *-ize* while others stuck with *-our* and *-ise*, but multiple competing systems is not really an improvement. Same with other attempts at language reform: the international auxiliary language Esperanto is counted a success among constructed languages because perhaps two million people have learned it to varying degrees, while other, arguably better-designed, languages have languished in still greater obscurity. More than two million people use emoji every single hour.

Emoji didn't succeed because they were a language, they succeeded

because they're *not* a language. Rather than try to compete with words on their home turf, emoji added in a whole new system to represent a whole other layer of meaning. We already had a way of representing individual sounds, in the form of letters, and we've been developing the system for representing tone of voice using our existing punctuation and capitalization that we talked about in the previous chapter. So emoji and other pictorial elements are filling the third important pillar of communication: a way of representing our gestures and physical space.

We don't know whether emoji per se will be popular in future centuries or are merely a passing fad. But my prediction is that, having unlocked a way of conveying gesture and intention in writing, we'll continue caring about digital embodiment, even though we may very well change the specific tools we use to project it. To be sure, there are differences between gesture and emoji as well: gestures are good at movement, while emoji are better at detail. Don't ask me how I'd convey a birthday in gesture or the way to throw a frisbee in emoji—I really have no idea. But their core function, the way that they fit into our systems of communication, has too many similarities to be an accident.

Thinking of emoji as gestures helps put things into perspective: if we're tempted to start thinking, "If words were good enough for Shakespeare, why aren't they good enough for us?" we can pause and realize that plain words *weren't* actually good enough for Shakespeare. A lot of what Shakespeare wrote was plays, designed not to be read on a page, but to be performed by people. How many of us have struggled through reading Shakespeare as a disembodied script in school, only to see him come to life in a well-acted production? Or, to take a more contemporary example, when the long-awaited, next-generation story *Harry Potter and the Cursed Child* came out in book form, it got mixed reviews. People who saw the play generally

really enjoyed it, but people who just read the script were more polarized. If Shakespeare and J. K. Rowling can't make disembodied dialogue feel natural, what hope is there for J. Q. Notapoet, our average internet user?

Emoji and gesture also share a murky relationship with "universal" meaning. They both cross boundaries that plain words don't: I'd certainly rather be dropped on an island where I didn't share a language with anyone if I could use gesture or emoji. But pantomime and cartoon pictures will only get me so far, and at the same time, there are plenty of things about both that are culturally specific, whether that's different obscene gestures or illustrations of objects that are only common in Japan. Even the idea of pictorial communication is culturally bound: people tend to tell emoji "stories" in left-to-right or right-to-left order depending on the direction of their writing systems, and those who are illiterate have a difficult time with linear picture stories or simplified emoji-like drawings at all. And neither pictures nor gestures are useful for one of the most powerful features of language: its ability to talk about ideas that are hard to visualize. Nuclear scientists, for example, have had an incredibly difficult time communicating the fairly simple concept "Danger: There is nuclear waste here" in a way that will continue to make sense for the next ten thousand years. Circle with a slash? Nope, could be a sideways hamburger. Skull and crossbones? Nope, could refer to the Day of the Dead or pirates. Much as we might wish it to be otherwise, there's just no panacea for universal communication.

This comparison between gesture and emoji can help us with more immediate decisions, however. Judges and juries are grappling with emoji sensemaking, according to law professor Eric Goldman, in much the same way as they've long had to interpret gestures and punctuation. Courts have already deliberated over whether a raised hand is a threat, or if a particular handshake is a gang sign, or what

exactly was meant by a particular comma. It's by similar logic that a court interpreted a smiley emoticon in one context as indicating that something was a joke, not to be taken seriously as evidence, while another court interpreted a smiley emoticon in a different context as merely a symbol of happiness. In a list of emoji examples from court cases compiled by US criminal justice news organization The Marshall Project, emoji are often treated as a clue regarding the intent of the writer, such as whether a gun emoji can indicate a genuine threat, whether a face with tongue stuck out emoji is enough to indicate that a violent post is a joke, or whether sharing a violent video with smile and heart emoji indicates a "twisted delight" in it.

Expanding our tools for conveying our intentions may even make us better at reading other people's mental states by giving us more practice taking them on. If we look at the history of literature, medieval and classical texts simply described what the characters did (wing their hands, tear their hair) rather than their mental states, while early modern stories started incorporating monologues where characters spoke their thought processes out loud (think Hamlet or Juliet wondering about death). With the invention of the novel, omniscient narrators could hint at mental states that even the characters didn't fully understand, while twentieth-century modernist writers tried to evoke the actual experience of a particular mental state in the reader. Sure enough, researchers have found that people who read a lot of fiction are better at understanding mental states than those who read primarily nonfiction or don't read at all. In the twenty-first century, we're going a step further: emoji and the rest make us not just readers of mental states, but writers of them. The younger Internet People who complain that their parents don't understand how their tone comes across in text may be onto something important.

The idea of mental states can reassure anyone who's worried

about emoji or textspeak creeping into student essays. Even as mental states have gotten more deep and subtle in literature and informal writing, we've kept essays around as a formal genre for other purposes. No one is writing in a formal context, "omggg wtf the mitochondria is the powerhouse of the cell 🐝🐝🐝🐝", any more than a hundred years ago people were writing, "Oh my heavenly stars, the mitochondria is the powerhouse of the cell, isn't that just the bee's knees!!!!" Even if you're the kind of nerdy scientist who's genuinely that excited about basic mitochondria facts, you're still supposed to pretend you're a serious researcher if you want to get published in a serious journal. The convention for formal writing is that it's unemotive and disembodied.

But formality doesn't have to be a requirement for all kinds of writing. Many areas of our lives, like clothing styles and eating styles, run the full gamut from formal to informal with many gradations in between. How marvelous it is that writing styles can do the same! What we're arriving at, between typography and visuals, is a flexible set of ways to communicate our intentions and share space online. Not everyone uses every option: some people love emoji, some people prefer old-school emoticons or abbreviations, some people would rather do it with comedic timing in their vocabulary, line-breaks, and punctuation. But everyone needs something, or you're going to indeed find cyberspace "alienating and unfulfilling." We take the expression of mental states so much for granted in informal speech, that oldest and first-learned form of language, that it takes the dramatic expansion of a new genre, informal writing, to make us pay attention to it again. But now that we've set up our expanded emotional palette, we need to give it a canvas to paint on. Let's expand our focus and have a look at conversations.

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seen a com-

...video, a blobby computer-

...roid manages to figure out how to walk on two legs, but only by rapidly pumping its fist up and down at the same time.

In another, a metallic humanoid exoskeleton sways dangerously to the side with each faltering step, prompting its surrounding humans to hold their open hands a few inches away in case they need to rescue the expensive equipment from falling. The four-legged robots do okay, but the two-legged ones are still not as good at walking as an average human three-year-old is, over twenty years after a computer beat a human grandmaster at chess in the mid-1990s.

When we think about the kind of language that's difficult, we often think of soaring public speeches or a poem that punches us in the feels—the chess of language. We've known how to display this kind of language on screens for a long time, before computers at all.