

# MojiSem 1.0 Guidelines

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Emoji characters were first offered on 🇺🇸 mobile phones around the turn of the 21st century. But these pictographic elements reached 🌐 language communities after being added to Unicode 6.0 in 2010, and then offered as software keyboards on 📱. In the ensuing half-decade, communities of language users have quickly developed many linguistic uses for emoji.

Emoji are sometimes said to function as way to turn written text into a form of multi-modal communication, and this alone would be a good motivation to gain a nuanced understanding of their application. But our initial survey of emoji usage on Twitter reveals many cases where emoji serve direct semantic functions in a tweet or they are used as a grammatical function such as a preposition or punctuation.

Emoji now play an undeniably central role in the expression of meaning in the media where they are heavily used (web and chat), but they remain under-studied and under-analyzed. Some interesting patterns may be found automatically. Instagram Engineering blog used word2vec to cluster emoji from 50 million posts by their distributional similarity:

<http://instagram-engineering.tumblr.com/post/117889701472/emojineering-part-1-machine-learning-for-emoji>

yielding this very enriching map of semantic clusters:

[https://s3.amazonaws.com/instagram-static/engineering-blog/emoji-hashtags/tsne\\_map\\_tight.png](https://s3.amazonaws.com/instagram-static/engineering-blog/emoji-hashtags/tsne_map_tight.png)

Tyler Schnoebelen did a fairly shallow and summary investigation of emoji usage in tweets to make certain generalizations about high-frequency emoji in 500,000 tweets: <http://time.com/2993508/emoji-rules-tweets/>

But there are no results for ‘emoji’ in the ACL Anthology.

We propose to go deeper, as far as a semester project may allow. We aim to offer annotators a framework and heuristics to classify uses of emoji by linguistic and discursive function, in order to reach a better understanding of the ways that different emoji are used and their relationship to any surrounding text. This corpus and annotation schema will be used to collect human judgment of what an emoji is doing in a given context, and to make predictions of what it is doing in novel contexts.

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We have observed emoji serving the following 3 major functions:

1. **Multimodal communication**

Additions that allow a written text to become multimodal in the way that speech often is. This includes: attitude, physical gestures, topic markers and more.

## 2. **Semantic function/content words**

Cases where the emoji replaces a content word in the sentence, usually based on the meaning represented in the image, or a culturally defined meaning (could be compositional). We hope that emojis in this category could be classified correctly by existing POS taggers (even if some minor changes will be needed).

## 3. **Grammatical functions**

This category has been discussed less in connection to emoji than others, since it is widely thought to be what prevents emojis from becoming a separate language. The inability to express auxiliaries, prepositions, determiners and other functional words makes it harder to express things like tense and aspect. However, in our research, we have already come across several emojis that are used in such roles. Some are a natural continuation of shorthand conventions such as using the number 4 instead of the word “for”, and others are graphical representations of punctuation or mathematical symbols. Further exploration is needed to see if a closed set of options exists, or if novel uses can be generated by users.

### **Corpus: Twitter data in English**

For this project we will be looking at tweets. As a social network, Twitter is a communication platform where emojis have become a significant part of the language. Its users vary in age, dialect, register and interests. The limited length of each tweet (140 characters) provides a convenient scope for determining the function of an emoji character in relation to the rest of the post. Tweets include both standalone utterances and conversations between users, which yields a variety of discourse styles that cannot be found in chat data or blog posts in isolation.

From a technical point of view, large quantities of tweets are accessible and easy to analyze.

Corpus size will be determined in a later date, and will be based on further research into the distribution of emojis in Twitter data.

We will focus on tweets in English, both for interpretability, and because we expect that different languages adopt different uses and meanings for emoji characters, based on syntax or similar-sounding words.

## **Instructions to annotators**

### **For each tweet you will need to:**

1. Read the tweet, try to understand the meaning in general.
2. For each emoji character in the tweet, decide if it has its own meaning, or if it is necessary to examine it as part of a sequence of emojis.
3. For each emoji or sequence of emojis (with a compositional meaning), decide on the relationship between the emoji and the rest of the text, and add one of three main tags: multi-modal informative, content word or grammatical function.
4. Once you have determined a classification, choose the type attribute that best represents the sub-category of the emoji.
5. Try to think of the meaning conveyed by the tweet and suggest a brief replacement or an interpretation for the emoji. Whenever possible, aim for a replacement that could be inserted in the sentence at the point of the emoji to yield a grammatical sentence.

## **Steps:**

### **Step 1- first read:**

Before annotating each tweet, read it with the following questions in mind:

1. Can the tweet be understood without the emoji at all?
2. Can you think of a simple verbal replacement for the emoji?
3. How would the same message be expressed in a conversation?
  - a. Would the meaning conveyed by the emoji be replaced with a physical gesture or intonation?
  - b. Would the meaning conveyed by the emoji be clearer in an established context of location/previous utterance/relationship?
4. Does the use of emoji serve communicative functions that cannot be expressed in text alone?

### **Step 2- Identifying emojis as grammatical functions:**

In order to decide whether an emoji is used for a grammatical function within the text, try to answer the following questions for each sub-category:

1. Function words
  - a. Is the emoji used to replace a function word such as a preposition/auxiliary/connective/conjunction/determiner?
  - b. What is the most obvious word represented in the emoji? Does it sound like another word? If so, does it fit the definition of a “function word”?
  - c. Examples:

I want  go  sleep.

The word “to” is replaced by an emoji of the number 2 (since they are homophones).

Hugs  everyone.

The word “for” is replaced by an emoji of the number 4 (since they are homophones).

I  know.

The word “don’t” is replaced by a doughnut emoji (which sounds similar).

I will  there!!

The word “be” is replaced by a bee emoji (since they are homophones).

- d. If the answer to question (b) is yes, and it is similar to the examples in (c), then tag the emoji is a grammatical function and the attribute “function word”.
  - e. In the replacement attribute, add the word or phrase you think best fits the intended meaning of the emoji (“be” for the bee emoji).
2. Punctuation marks
  - a. If you see an emoji of a punctuation mark that is used as regular punctuation, add the grammatical function tag, with the punctuation attribute.
  - b. In the replacement attribute, add the same punctuation marks from the regular keyboard.

c. Example:

Stop it !!

Here the replacement would be “!!”.

### **Step 3- Identifying emojis as content words:**

If the emoji you are examining doesn't fall under the previous category, you will next try to decide if it's part of the main message in the text and is used as a content word. This group also mainly includes emojis that are replacing words within a sentence or textual expression. However, the emojis tagged as content words should have a semantic role similar to that of common nouns, non-auxiliary verbs and adjectives.

In order to determine if the emoji should be tagged as a content word, think of the following:

1. Is the emoji placed inside a sentence (i.e. not after a punctuation mark or at the beginning of the tweet)?
2. Try to read the tweet out loud. Did you have to include the emoji in order to read it? How did you “pronounce” the emoji?
3. If you replaced the emoji with a simple word or phrase, what was it? Does the tweet lose any of its meaning by replacing the emoji with text?
4. Is the emoji part of a sentence or phrase structure?

If you answered “yes” to most of these questions, then you can probably tag the emoji or the sequence as a content word or phrase.

1. Tag the emoji as “content”.
2. Add the type attribute and determine the part of speech that fits the perceived meaning of the emoji the most.
3. Add the replacement attribute and choose the word or phrase that can replace the emoji while maintaining the original meaning of the tweet.
4. Examples:
  - a. Type= “noun”, replacement= “a cookie”

I want 🍪

- b. Type= “verb”, replacement = “ran”

I saw the bus coming so I 🏃 to the stop.

- c. Type= “adjective”, replacement= “engaged”

She is 💍.

- d. Type= “adverb”, replacement= “soon”

I'll be there ➡  
SOON

### **Step 4- tagging multimodal emoji uses:**

If the emoji doesn't seem to belong to the other two groups, it is very likely to be tagged as a multimodal. Emojis are often used as content or functional words as abbreviations or space/time savers, but their graphical suggestiveness and variety allow Twitter users to express more than they could have with only 140 alphanumeric characters. In this category you will tag emojis that add additional information and forms of communication to the text: indications of gesture, intonation, topic or attitude.

Since these are often meta-linguistic additions to the tweet, it might be hardest category to annotate. The multimodal nature of these cases generates ambiguity, which may be intentional on the part of the writer of the tweet. Try to choose a subcategory from the suggested types that you think describes the most obvious and important message intended by the writer. If you believe that there are 2 or more equally strong interpretations of the emoji, add two nested/overlapping annotations, but whenever possible try to settle on a single, strongest interpretation.

### Types:

This is not a comprehensive list or a closed definition. We expect that you will find other cases that fall under the multimodal umbrella. We have kept the 3 subtypes broad enough that you can probably find a suitable way to annotate most cases. Use the descriptions as examples and a guide, rather than restrictions on what belongs to this type.


1. Topic markers
  - a. Emojis as graphical representations of the subject of the tweet.
  - b. Emojis that serve functions similar to hashtags, as a way to provide otherwise unspecified context.
  - c. Emojis that are referencing explicit words or phrases in the tweet, emphasizing the stated topic.
2. Physical gestures
  - a. Emojis that imply a gesture made by the writer to accompany the rest of the text.
  - b. Emojis that represent a facial expression or physical reaction to the text.
3. Attitude
  - a. Emojis meant to express the writer's attitude towards the text.
  - b. Emojis that indicate sentiment towards a situation or a person (possibly the one the tweet is addressed to).
  - c. Emojis that suggest the writer is joking or being sarcastic.
  - d. Emojis that represent the writer's state of mind or mood.

Once you have chosen the mm (multimodal) tag and the type attribute, suggest a short interpretation of the emoji.

### Examples:

1. Type= "attitude", interpretation= "joking"  
I hate you! 🙄
2. Type= "attitude", interpretation= "I'm miserable"  
I'm so tired... 😞😞😞
3. Type= "topic", interpretation= "co-reference: NYC"  
Going to NYC tomorrow 🗽

4. Type= “topic”, interpretation= “bowling”

I'm really bad at this game. 

5. Type= “physical gesture”, interpretation= “blowing a kiss”

I'll see you soon 