Sentence-final particle vs. sentence-final emoji: The syntax-pragmatics interface in the era of CMC

Chenchen (Julio) Song
Zhejiang University

Grapholinguistics in the 21st Century 2022
Télécom Paris, Palaiseau, France, June 8–10, 2022
Emojis in CMC
An increasingly important part of everyday life

My most recent Tweet 👉

Fighting time fragmentation as an adult is so hard, especially when you realize that the biggest time-eater in your life is LIBDN (lying-in-bed-doing-nothing)... 😞 😞
12:06 PM · May 30, 2022 · Twitter Web App

My most recent Weibo post 👉
(Weibo is the Chinese equivalent of Twitter)

“Perhaps kids in 2,000 years will have to do reading comprehension tests based on paparazzi reports from the 21st century as well”

The emotions conveyed by emojis are highly subtle!
Two main uses of emojis

Affective vs. nonaffective

I focus on the affective use and leave the nonaffective use aside.

Example:

(1) a. Great idea 👍 I’m in 😊 affective

b. If I were in Detroit, I’d give you a 🎁 nonaffective

(adapted from Maier 2021:4)

Nonaffective emojis can be directly replaced by words. They can also readily participate in various at-issue operations (see Grosz et al. 2021).

Negation

—I’d give you a 🎁 —No, you won’t.

vs

—I’m in 😊 —#No, you aren’t happy.

(# indicates infelicity)

Affective emojis are not about the truth condition of the sentence, but about the speaker’s mood.
Affective sentence-final particles in Chinese
Functionally similar to affective emojis

Example: some different ways to say “it is snowing” in Mandarin Chinese
(2) a. xià xuě le ye 下雪了耶
   fall snow PRF SFP   “It’s snowing. (happy tone)” ≈ It’s snowing 😊
   Wow, I’m so excited!

b. xià xuě le a 下雪了啊
   fall snow PRF SFP   “It’s snowing. (surprised tone)” ≈ It’s snowing 😮
   Oh, I didn’t expect this!

c. xià xuě le you 下雪了呦
   fall snow PRF SFP   “It’s snowing. (kind reminder tone)” ≈ It’s snowing 😊
   You’d better put on some clothes.

d. xià xuě le ha 下雪了哈
   fall snow PRF SFP   “It’s snowing. (softening tone)” ≈ It’s snowing 😄
   I didn’t mean to be late but...

Impression:
Chinese-style affective particles and affective emojis serve the same purpose.

What’s more, they are both sentence-final.

Question: Would a unified grammatical analysis be possible? 😐

Null hypothesis: Sentence-final emojis (SFEs) are the “sentence-final particles” (SFPs) of CMC.
Goals

1. Compare sentence-final emojis and sentence-final particles in more detail
2. Evaluate the null hypothesis
3. Put forward a formal linguistic analysis of sentence-final emojis

Key results:
- SFEs and SFPs behave differently on closer inspection
- Formal linguistic tools can be used to analyze CMC data

Null hypothesis: Sentence-final emojis (SFEs) are the “sentence-final particles” (SFPs) of CMC.
A bit more on sentence-final particles
They have their own detailed taxonomy

Table 1: Mandarin Chinese SFPs (Paul 2014)

<table>
<thead>
<tr>
<th>Type I (TA-oriented)</th>
<th>Type II (sentence type)</th>
<th>Type III (attitude)</th>
</tr>
</thead>
<tbody>
<tr>
<td>了 le ‘currently relevant state’</td>
<td>嗎 ma ‘interrogative’</td>
<td>嗲/啍/啍 o ‘warning’</td>
</tr>
<tr>
<td>來著 láizhe ‘recent past’</td>
<td>吧 ba ‘imperative’</td>
<td>啊/呀 a/ya ‘astonishment’</td>
</tr>
<tr>
<td>呢1 ne1 ‘continued state’</td>
<td>呢2 ne2 ‘follow-up question’</td>
<td>呢3 ne3 ‘exaggeration’</td>
</tr>
</tbody>
</table>

We are only concerned with Type III particles, which are “the outermost” in the linguistic structure of Chinese sentences.
Sentence-final particles and sentence-final emojis do not belong to the same grammatical category.
1st reason

SFPs and SFEs can co-occur (and often do so)

Example: (a minimal update of (2))

(3) a.  xià  xuě  le  ye 😊
    fall  snow  PRF  SFP
    “It’s snowing. (happy tone)”

b.  xià  xuě  le  a 😮
    fall  snow  PRF  SFP
    “It’s snowing. (surprised tone)”

c.  xià  xuě  le  you 😊
    fall  snow  PRF  SFP
    “It’s snowing. (kind reminder tone)”

d.  xià  xuě  le  ha 😅
    fall  snow  PRF  SFP
    “It’s snowing. (softening tone)”

If SFPs and SFEs instantiate the same grammatical category, their flexible and productive co-occurrence becomes a mystery.
A bit linguistics

Elements of the same grammatical category are complementary

Example:

(4) a. *this that book* (demonstrative)
   b. *I you like reading* (pronoun)
   c. *in on the wall* (preposition)
   d. *more clearer* (comparative)

Hypothesis: (affective) SFPs and SFEs instantiate two semantically similar but syntactically different categories. → Again, this situation is common in linguistics.

Example:

(5) a. *three books* (numeral & number)
   b. *looking forward to reading it* (tense & aspect)
   c. *aus dem Haus heraus, auf den Berg hinauf* (preposition & postposition) [German]
      ‘out.of the house outward’ ‘onto the hill upward’
   d. *Moi, je ne suis pas d’accord.* (1. topic + subject + Agr) [French]
      “Me, I don’t think so.” (2. neNeg + pasAdvP)
SFPs are a closed class, while SFEs are an open class

Different authors count differently, but the number of SFPs in Mandarin (encompassing all subtypes) is generally assumed to be under 30:
- Chao (1968) lists 26 (including many borderline cases)
- Li & Thompson (1981) list 6 (only the most common ones)
- Sun (1999) lists 28 (for all Mandarin varieties throughout the 19th and 20th centuries)

By comparison, the inventory of SFEs is much larger and is constantly expanding:
- New smileys are created every year (see Emojipedia)
- Many platform-specific ones too (e.g., Twitter, Weibo, Skype)
- Many nonsmiley emojis can be used effectively too
- Various quasi emojis (e.g., emoticons, special punctuation marks)
SFE as an open class

1. New smileys are created every year

What next?
SFE as an open class

2. Many platform-specific ones

Weibo

WeChat

(see emojiall.com for more)
SFE as an open class

2. Many platform-specific ones

Weibo

WeChat

NB cross-platform differences may lead to subtle affective differences

(see emojiall.com for more)
SFE as an open class

2. Many platform-specific ones

NB cross-platform differences may lead to subtle affective differences
e.g., different eye-rolling facial expressions may mean different things

(see emojiall.com for more)
## SFE as an open class

### 2. Many platform-specific ones

e.g., different eye-rolling facial expressions may mean different things

<table>
<thead>
<tr>
<th>User</th>
<th>Apple</th>
<th>Twitter</th>
<th>WeChat</th>
<th>Weibo</th>
<th>QQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>User 1</td>
<td>“I can’t even”, jaded</td>
<td>disappointed</td>
<td>“eye-avoidance”, vaguely embarrassed</td>
<td>disappointed &amp; sad</td>
<td>slightly embarrassed or a bit cheeky</td>
</tr>
<tr>
<td>User 2</td>
<td>slightly annoyed</td>
<td>a bit sad</td>
<td>wondering</td>
<td>confused</td>
<td>slightly indifferent or skeptical</td>
</tr>
<tr>
<td>User 3</td>
<td>speechless (negative)</td>
<td>negative attitude</td>
<td>playing innocent, “not me not me”</td>
<td>pretending to be angry</td>
<td>negative attitude</td>
</tr>
<tr>
<td>User 4</td>
<td>speechless</td>
<td>speechless &amp; unhappy</td>
<td>“I don’t wanna hear”</td>
<td>pretending to be angry</td>
<td>speechless (friendlier)</td>
</tr>
<tr>
<td>User 5</td>
<td>real eye-rolling (highly negative)</td>
<td>≈Weibo</td>
<td>≈QQ1</td>
<td>pretending to be angry</td>
<td>a bit of disdain</td>
</tr>
<tr>
<td>User 6</td>
<td>real eye-rolling</td>
<td>confused</td>
<td>pretending to be confused</td>
<td>arrogant</td>
<td>pondering</td>
</tr>
</tbody>
</table>

**Results from a quick survey: What emotions do you think these emojis convey?**

- User 1: “I can’t even”, jaded, disappointed, “eye-avoidance”, vaguely embarrassed, disappointed, disappointed & sad, slightly embarrassed or a bit cheeky, amused (for chaos or minor confusion).
- User 2: slightly annoyed, a bit sad, wondering, confused, slightly indifferent or skeptical, slightly naughty, silly.
- User 3: speechless (negative), negative attitude, playing innocent, “not me not me”, pretending to be angry, negative attitude, playing innocent, “not me not me”, speechless (negative).
- User 4: speechless, speechless & unhappy, “I don’t wanna hear”, pretending to be angry, speechless (friendlier), “I don’t wanna hear” (cuter), totally speechless, “death smile”.
- User 5: real eye-rolling (highly negative), ≈Weibo, ≈QQ1, pretending to be angry, a bit of disdain, a bit shocked, humorously sarcastic.
- User 6: real eye-rolling, confused, pretending to be confused, arrogant, pondering, pretending to be confused, meanly cynical.
SFE as an open class

2. Many platform-specific ones

e.g., different eye-rolling facial expressions may mean different things

Results from a quick survey: What emotions do you think these emojis convey?

<table>
<thead>
<tr>
<th>User</th>
<th>Apple</th>
<th>Twitter</th>
<th>WeChat</th>
<th>Weibo</th>
<th>QQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>User 1</td>
<td>“I can’t even”, jaded</td>
<td>disappointed</td>
<td>“eye-avoidance”, vaguely embarrassed</td>
<td>disappointed &amp; sad</td>
<td>slightly embarrassed or a bit cheeky</td>
</tr>
<tr>
<td>User 2</td>
<td>slightly annoyed</td>
<td>a bit sad</td>
<td>wondering</td>
<td>confused</td>
<td>slightly indifferent or skeptical</td>
</tr>
<tr>
<td>User 3</td>
<td>speechless (negative)</td>
<td>negative attitude</td>
<td>playing innocent, “not me not me”</td>
<td>pretending to be angry</td>
<td>negative attitude</td>
</tr>
<tr>
<td>User 4</td>
<td>speechless</td>
<td>speechless &amp; unhappy</td>
<td>“I don’t wanna hear”</td>
<td>pretending to be angry</td>
<td>speechless (friendlier)</td>
</tr>
<tr>
<td>User 5</td>
<td>real eye-rolling (highly negative)</td>
<td>≈Weibo</td>
<td>≈QQ1</td>
<td>pretending to be angry</td>
<td>a bit of disdain</td>
</tr>
<tr>
<td>User 6</td>
<td>real eye-rolling</td>
<td>confused</td>
<td>pretending to be confused</td>
<td>arrogant</td>
<td>pondering</td>
</tr>
</tbody>
</table>
SFE as an open class

3. Many nonsmiley emojis can be used affectively too

Example: 🌈 is often used to display an air of nonchalance or indifference (Emojipedia)

(6) a. nǐ bìng bù dǒng wǒ 🌈 [Mandarin]
   you at.all not understand me
   “You don’t understand me at all. (jocularly snooty)” (Baidu)

b. As i said before, u can't compare urself with us. We're on another level, we're on
   the next level. Sorry to say, but it's a fact 🌈 (Twitter) [English]
SFE as an open class

3. Many nonsmiley emojis can be used affectively too

Example: 🤧 is often used to display an air of nonchalance or indifference (Emojipedia)

(6) a. nǐ bìng bù dòng wǒ 🤧
   you at all not understand me
   “You don’t understand me at all. (jocularly snooty)” (Baidu)

b. As i said before, u can't compare urself with us. We're on another level, we're on the next level. Sorry to say, but it's a fact 🤧 (Twitter) [English]

4. Various quasi emojis

emoticons :)
XP ^_^ (>_<) (● ^ o ^●) (‿.‿*) 囧 \( ◎ o ◎ \) / !

punctuation marks

Highly popular and versatile in Asia

The tilde ~ is a frequently used as a tone-softening mark Chinese Internet language
Typing three Chinese-style periods 。。。。 has a similar tone-softening effect

~ is cuter, 。。。。 is more like “you know” \( (’abyrinth) \)
SFE as an open class

4. Various quasi emojis

Example:

(7) a. bāng wǒ mǎi dōngxi ～～～ 帮我买东西～～～  [Mandarin]
    help me buy stuff 🙏
    “Help me buy something (cute tone; without the tildes this sounds impolite)”

b. zhēndē ma。。。。 真的吗。。。
    real Q ⊙(˚.jsdelivr_100˚).say
    “Really? (tone: alright, mkay, whatever)”

c. gǔn。。。。。。 滚。。。。。。
    roll ⊙(˚.jsdelivr_100˚)say ⊙(˚.jsdelivr_100˚)say
    “Get lost… (tone: but don’t really go away — I don’t “hate” you that much)”
3rd reason

Affective emojis are regularly sentence-final across languages while the positioning of affective modal particles varies

Sentence-final particles in (South)East Asian languages are a major type of affective modal particle, but they are **not** the only type.

**German modal particles serve a similar purpose**

German modal particles are uninflexed words that are used mainly in the spontaneous spoken language in colloquial registers in German. Their dual function is to reflect the mood or the attitude of the speaker or the narrator and to highlight the sentence's focus. (Wikipedia)

<table>
<thead>
<tr>
<th>Example</th>
<th>Connotation</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>halt, nun, einmal</em></td>
<td>some unpleasant fact must be accepted</td>
</tr>
<tr>
<td><em>ja</em></td>
<td>reminder to the listener</td>
</tr>
<tr>
<td><em>mal</em></td>
<td>a casual, less blunt tone</td>
</tr>
<tr>
<td><em>doch</em></td>
<td>emphasis, urgency, impatience, etc. (highly versatile)</td>
</tr>
</tbody>
</table>
3rd reason

Affective emojis are regularly sentence-final across languages while the positioning of affective modal particles varies

German modal particles are regularly sentence-middle

Example:
(8) a. Gute Kleider sind eben teuer. [German]
   good clothes are MOD expensive.COMP
   “Good clothes are more expensive (and it can’t be helped).”

b. Heidi ist ja ein Kind.
   Heidi is MOD a child
   “Heidi is a child (as you can see).”
3rd reason

Affective emojis are regularly sentence-final across languages while the positioning of affective modal particles varies

German modal particles are regularly sentence-middle

Example:
(8) a. *Gute Kleider sind eben teuer.*
   good clothes are MOD expensive.COMP
   “Good clothes are more expensive (and it can’t be helped).”

   b. *Heidi ist ja ein Kind.*
   Heidi is MOD a child
   “Heidi is a child (as you can see).”

(9) *Ich kann euch beiden nicht folgen* 🙃
   I can you both not follow
   “I can’t follow you two.”

But German affective emojis are also sentence-final!
Positioning of affective emojis
A survey of nine languages on social media websites (Twitter/Weibo)

<table>
<thead>
<tr>
<th>Language</th>
<th>Family</th>
<th>Type</th>
<th>Basic word order</th>
<th>Place of affective emoji</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandarin</td>
<td>Sinitic</td>
<td>isolating</td>
<td>SVO</td>
<td>sentence-final</td>
</tr>
<tr>
<td>Japanese</td>
<td>Japonic</td>
<td>agglutinative</td>
<td>SOV</td>
<td>sentence-final</td>
</tr>
<tr>
<td>Korean</td>
<td>Koreanic</td>
<td>agglutinative</td>
<td>SOV</td>
<td>sentence-final</td>
</tr>
<tr>
<td>English</td>
<td>Germanic</td>
<td>analytic</td>
<td>SVO</td>
<td>sentence-final</td>
</tr>
<tr>
<td>German</td>
<td>Germanic</td>
<td>fusional</td>
<td>SOV (V2 in matrix)</td>
<td>sentence-final</td>
</tr>
<tr>
<td>French</td>
<td>Romance</td>
<td>fusional</td>
<td>SVO</td>
<td>sentence-final</td>
</tr>
<tr>
<td>Irish</td>
<td>Celtic</td>
<td>fusional</td>
<td>VSO</td>
<td>sentence-final</td>
</tr>
<tr>
<td>Basque</td>
<td>Language isolate</td>
<td>agglutinative/fusional</td>
<td>SOV</td>
<td>sentence-final</td>
</tr>
<tr>
<td>Hungarian</td>
<td>Finno-Ugric</td>
<td>agglutinative</td>
<td>relatively free</td>
<td>sentence-final</td>
</tr>
</tbody>
</table>
Positioning of affective emojis
A survey of nine languages on social media websites (Twitter/Weibo)

Example: (all from Twitter, retrieved on 27 May 2022)
(10) a. Les pères, ils ont droit au whisky et autres alcool de “bonhomme” 🤕
   “The fathers, they have the right to whisky and other alcohols of ‘fellow.’”
   [French]
b. Ich dachte immer, dass hier alles anonym ist 😃itat
   “I always thought that everything was anonymous here.”
   [German]
c. gozenchū no ame wa dokoni ittandesu ka 🤔
   “Where did the rain in the morning go?”
   [Japanese]
d. Membeo-deul-i ‘hat-gyu’-rago bureum 😈
   “The members calling him ‘hot-gyu’”
   [Korean]
e. RT agus fág trácht le bheith san áireamh!! 😎
   “RT and leave a comment to be included!!”
   [Irish]
f. Bilera eta ekitaldi nagusiak bueltan dira Euskaldunan 😊
   “Meetings and big events are back in Basque.”
   [Basque]
g. Legyetek a barátaim, ugyanígy doraszell a nevem 😊
   “Be my friends (on BeReal). My name is just doraszell.”
   [Hungarian]
Positioning of affective emojis

A survey of nine languages on social media websites (Twitter/Weibo)

An interesting observation

Basque accounts like posting in Basque & Spanish, with no change in emoji position.

Example:

(11) a. Bilera eta ekitaldi nagusiak bueltan dira Euskaldunan 😊
    Los grandes eventos y las reuniones están de vuelta en Euskalduna 🎉
    “Meetings and big events are back in Basque.”

    b. Bizkaiak egunero zaintzen ditu mendetasun-egoeran dauden adineko milaka pertsona 😢👵❤️
    Bizkaia cuida cada día de miles de personas mayores en situación de dependencia 😢👵❤️
    “Every day, Bizkaia cares for thousands of elderly people in a situation of dependency.”
Summary

SFEs and SFPs do not belong to the same grammatical category. They are semantically similar but syntactically different.

Three reasons:
1. SFEs and SFPs can and often do co-occur.
2. SFEs are an open class; SFPs are a closed class.
3. The positioning of affective emojis is not affected by cross-linguistic word order variation; that of affective modal particles is.
A word on sentence-initial emojis

Three cases

I. Responses to earlier messages => usually affective, a bit like interjections
Example:
(12) —The Warriors win the Western Conferences Finals 🏆
Steph, Klay and Draymond will play their SIXTH NBA Finals together
—Tf?🤣 You really don’t know anything. Any real Lakers fan would never root for the Celtics

II. Deictic road signs, creative bullet lists, or other frame-setters => usually nonaffective
Example:
(13) 🎟️  Gaur, #Urretxu-ko biztanleek haien kezkak eta proposamenak partekatzeko aukera [Basque]
izango dute 19:00ak arte.
👉 Nola imaginatzen duzue Gipuzkoa 2040an Urretxuko biztanleek?👨‍💼
“Today, #Urretxu residents will have the opportunity to share their concerns and suggestions until 7 p.m. How do the people of Urretxu imagine Gipuzkoa in 2040?”

III. Decorations => usually nonaffective
Example:
(14) 🌿🌹🌿 Szép napot kívánok mindenkinek! 🌿🌹🌿 [Hungarian]
“Wish everyone a beautiful day!”
Theory
Emojis in CMC grammar
How do they integrate with the linguistic text?

What we know
1. SFEs convey speaker emotions accompanying entire linguistic utterances, including SFPs.
2. Miscellaneous symbols are being recycled as SFEs, conveying conventionalized affects.

What we don’t know
1. What’s the grammatical category for SFEs?
2. How does that category interact with the linguistic utterance?
A formal syntactic theory

Proposal: CMC grammar has an “emotion” category E

Method
Extending formal tools from theoretical linguistics to the analysis of CMC grammar

Toolkit
• Minimalist syntax => we basically only use Merge (i.e., hierarchical structure-building)
• Recycling via categorization => E categorizes various symbols into affective “visual particles”

Bonus
I don’t have time to talk about this now but see the upcoming paper version
The formal syntactic analysis can be routinely equipped with a formal semantic analysis

Rationale
Some fundamental tools in formal linguistics are domain-general tools of symbol manipulation. (e.g., Merge is set formation, formal semantics is symbolic logic) CMC data are strings of symbols. Ergo, they are amenable to symbolic analysis.

Pitfall
We must be careful not to bring in too many “language faculty”-specific techniques, since it is not clear to what extent visual cues in CMC are products of the language faculty.
The “emotional wrapper” category $E$

$[E \text{ Sentence } [E \ E \sqrt{\text{IMAGE}} ] ]$ (an updated version of Song 2019)

Each branching in the tree is a step of Merge:
- $\text{Merge}(E, \sqrt{\text{IMAGE}}) \Rightarrow \{E, \sqrt{\text{IMAGE}}\}$
- $\text{Merge}(\text{Sentence}, \{E, \sqrt{\text{IMAGE}}\}) \Rightarrow \{\text{Sentence}, \{E, \sqrt{\text{IMAGE}}\}\}$

The root categorization technique is borrowed from Root Syntax theory (Halle & Marantz 1993 et seq., Borer 2013):
- Originally used for content word formation
- Formalizing the idea that each lexical category encompasses an open class of roots (so there are numerous nouns, verbs, etc.)
- Here used to account for the open-class nature of affective emojis
The “emotional wrapper” category E

\[ \text{EP Sentence} \ [E \ E \ \sqrt{\text{IMAGE}} ] \] (an updated version of Song 2019)

Each branching in the tree is a step of Merge:
- Merge(E, \sqrt{\text{IMAGE}}) => \{E, \sqrt{\text{IMAGE}}\}
- Merge(Sentence, \{E, \sqrt{\text{IMAGE}}\}) => \{\text{Sentence}, \{E, \sqrt{\text{IMAGE}}\}\}

The root categorization technique is borrowed from Root Syntax theory (Halle & Marantz 1993 et seq., Borer 2013):
- Originally used for content word formation
- Formalizing the idea that each lexical category encompasses an open class of roots (so there are numerous nouns, verbs, etc.)
- Here used to account for the open-class nature of affective emojis

The grammatical category E functions like an emotional wrapper for the linguistic sentence.
As per Root Syntax, the specific emotion conveyed by an emoji comes from neither E nor \sqrt{\text{IMAGE}} alone but is a matter of conventionalization based on their merger.
In other words, each affective emoji is a tiny “idiom” in the CMC lexicon.
Predictions of the theory

EP
Sentence E

E √IMAGE
Predictions of the theory

1. An infinite number of imagery roots, be they intrinsically affective or not, may be recycled as affective emojis. 👏🤝👍💅🙏☕🚬🎉💣❤❤🩹🌹…
Predictions of the theory

1. An infinite number of imagery roots, be they intrinsically affective or not, may be recycled as affective emojis.
   🎉💪🤝👍💅🙏❤️<System.Font>❤️🩹🌹</System.Font>…

2. The emotions in emojis are not always predictable based on their appearances (👏👏👏) and often vary across languages/cultures/generations (😀🤡-pills cig-bottle 🕯️).
Predictions of the theory

1. An infinite number of imagery roots, be they intrinsically affective or not, may be recycled as affective emojis. 👏🤝👍💅🙏☕🚬🎉💣❤❤🩹🌹…

2. The emotions in emojis are not always predictable based on their appearances (💅🧶🙇) and often vary across languages/cultures/generations (🙂🤡💊🕯)

3. Since E is outside of the linguistic Sentence, SFEs and SFPs can co-occur.
Predictions of the theory

1. An infinite number of imagery roots, be they intrinsically affective or not, may be recycled as affective emojis. 👏🤝👍💅🙏☕🚬🎉💣❤❤🩹🌹…

2. The emotions in emojis are not always predictable based on their appearances (💅🧶🙇) and often vary across languages/cultures/generations (🙂🤡💊🕯)

3. Since E is outside of the linguistic Sentence, SFEs and SFPs can co-occur.

4. Since we are merely borrowing the symbolic syntax of linguistics but not also its domain-specific assumptions, the EP structure need NOT be subject to natural language-like linearization rules:
Predictions of the theory

1. An infinite number of imagery roots, be they intrinsically affective or not, may be recycled as affective emojis. 👏🤝👍💅🙏☕🚬🎉💣❤❤🩹🌹…

2. The emotions in emojis are not always predictable based on their appearances (💅🧶🙇) and often vary across languages/cultures/generations (🙂🤡💊🕯)

3. Since E is outside of the linguistic Sentence, SFEs and SFPs can co-occur.

4. Since we are merely borrowing the symbolic syntax of linguistics but not also its domain-specific assumptions, the EP structure need NOT be subject to natural language-like linearization rules:
   (i) The position of the emoji is not affected by the cross-linguistic word order variation within the Sentence.
Predictions of the theory

1. An infinite number of imagery roots, be they intrinsically affective or not, may be recycled as affective emojis. 👏🤝👍💅🙏☕🚬🎉💣❤❤🩹🌹…

2. The emotions in emojis are not always predictable based on their appearances (にする ふんざい) and often vary across languages/cultures/generations (🙂🤡💊🕯).

3. Since £ is outside of the linguistic Sentence, SFEs and SFPs can co-occur.

4. Since we are merely borrowing the symbolic syntax of linguistics but not also its domain-specific assumptions, the EP structure need NOT be subject to natural language-like linearization rules:
   (i) The position of the emoji is not affected by the cross-linguistic word order variation within the Sentence.
   (ii) Given the 2D nature of the computer screen, the positional relation between Sentence and £ need not be strictly linear but could also be, say, overlapping (as in memes) or even temporal (as in GIFs).
Predictions of the theory

1. An infinite number of imagery roots, be they intrinsically affective or not, may be recycled as affective emojis. 👏🤝👍💅🙏☕🚬🎉💣❤❤🩹🌹…
2. The emotions in emojis are not always predictable based on their appearances (널로우와서 지나가) and often vary across languages/cultures/generations (👨‍👩‍👧‍👦 😸 🧼 🙇‍♂️ 🪢 🪢 🪢 🪢 🪢 🪢)
3. Since E is outside of the linguistic Sentence, SFEs and SFPs can co-occur.
4. Since we are merely borrowing the symbolic syntax of linguistics but not also its domain-specific assumptions, the EP structure need NOT be subject to natural language-like linearization rules:
   (i) The position of the emoji is not affected by the cross-linguistic word order variation within the Sentence.
   (ii) Given the 2D nature of the computer screen, the positional relation between Sentence and E need not be strictly linear but could also be, say, overlapping (as in memes) or even temporal (as in GIFs).
Predictions of the theory

1. An infinite number of imagery roots, be they intrinsically affective or not, may be recycled as affective emojis. 👏🤝👍💅🙏☕コー…

2. The emotions in emojis are not always predictable based on their appearances (💅🧶🙇) and often vary across languages/cultures/generations (🙂🤡💊🕯)

3. Since E is outside of the linguistic Sentence, SFEs and SFPs can co-occur.

4. Since we are merely borrowing the symbolic syntax of linguistics but not also its domain-specific assumptions, the EP structure need NOT be subject to natural language-like linearization rules:
   (i) The position of the emoji is not affected by the cross-linguistic word order variation within the Sentence.
   (ii) Given the 2D nature of the computer screen, the positional relation between Sentence and E need not be strictly linear but could also be, say, overlapping (as in memes) or even temporal (as in GIFs).
1. An infinite number of imagery roots, be they intrinsically affective or not, may be recycled as affective emojis. 👏🤝👍💅🙏☕🚬🎉💣❤❤🩹🌹…

2. The emotions in emojis are not always predictable based on their appearances (💅🧶🙇) and often vary across languages/cultures/generations (🙂🤡💊🕯️)

3. Since E is outside of the linguistic Sentence, SFEs and SFPs can co-occur.

4. Since we are merely borrowing the symbolic syntax of linguistics but not also its domain-specific assumptions, the EP structure need NOT be subject to natural language-like linearization rules:
   (i) The position of the emoji is not affected by the cross-linguistic word order variation within the Sentence.
   (ii) Given the 2D nature of the computer screen, the positional relation between Sentence and E need not be strictly linear but could also be, say, overlapping (as in memes) or even temporal (as in GIFs).

5. However, since E is outside of Sentence, the affective emoji can only be sentence-peripheral (be it initial or final) but NOT sentence-middle (that is, if the ordering is linear, as in most text messages and social media posts).
Predictions of the theory

1. An infinite number of imagery roots, be they intrinsically affective or not, may be recycled as affective emojis. 👏🤝👍💅🙏☕️🚬🎉💣❤️❤️🩹🌹…

2. The emotions in emojis are not always predictable based on their appearances (💅🧶🙇ๆalité) and often vary across languages/cultures/generations 😃🤡💊🕯

3. Since E is outside of the linguistic Sentence, SFEs and SFPs can co-occur.

4. Since we are merely borrowing the symbolic syntax of linguistics but not also its domain-specific assumptions, the EP structure need NOT be subject to natural language-like linearization rules:
   (i) The position of the emoji is not affected by the cross-linguistic word order variation within the Sentence.
   (ii) Given the 2D nature of the computer screen, the positional relation between Sentence and E need not be strictly linear but could also be, say, overlapping (as in memes) or even temporal (as in GIFs).

5. However, since E is outside of Sentence, the affective emoji can only be sentence-peripheral (be it initial or final) but NOT sentence-middle (that is, if the ordering is linear, as in most text messages and social media posts).

6. The predominantly sentence-final position of affective emojis is probably due to:
Predictions of the theory

1. An infinite number of imagery roots, be they intrinsically affective or not, may be recycled as affective emojis. 👏🤝👍💅🙏☕🚬🎉💣❤❤🩹🌹…

2. The emotions in emojis are not always predictable based on their appearances (💅🧶🙇 💜🤡💊🕯️) and often vary across languages/cultures/generations (😊🤡💊🕯️)

3. Since E is outside of the linguistic Sentence, SFEs and SFPs can co-occur.

4. Since we are merely borrowing the symbolic syntax of linguistics but not also its domain-specific assumptions, the EP structure need NOT be subject to natural language-like linearization rules:
   (i) The position of the emoji is not affected by the cross-linguistic word order variation within the Sentence.
   (ii) Given the 2D nature of the computer screen, the positional relation between Sentence and E need not be strictly linear but could also be, say, overlapping (as in memes) or even temporal (as in GIFs).

5. However, since E is outside of Sentence, the affective emoji can only be sentence-peripheral (be it initial or final) but NOT sentence-middle (that is, if the ordering is linear, as in most text messages and social media posts).

6. The predominantly sentence-final position of affective emojis is probably due to:
   (i) content-before-emotion communicative habit
Predictions of the theory

1. An infinite number of imagery roots, be they intrinsically affective or not, may be recycled as affective emojis. 👏🤝👍💅🙏☕🚬🎉💣❤❤🩹🌹…

2. The emotions in emojis are not always predictable based on their appearances 🌟🧶🙇儿 and often vary across languages/cultures/generations 😄🤡💊🕯。

3. Since E is outside of the linguistic Sentence, SFEs and SFPs can co-occur.

4. Since we are merely borrowing the symbolic syntax of linguistics but not also its domain-specific assumptions, the EP structure need NOT be subject to natural language-like linearization rules:
   (i) The position of the emoji is not affected by the cross-linguistic word order variation within the Sentence.
   (ii) Given the 2D nature of the computer screen, the positional relation between Sentence and E need not be strictly linear but could also be, say, overlapping (as in memes) or even temporal (as in GIFs).

5. However, since E is outside of Sentence, the affective emoji can only be sentence-peripheral (be it initial or final) but NOT sentence-middle (that is, if the ordering is linear, as in most text messages and social media posts).

6. The predominantly sentence-final position of affective emojis is probably due to:
   (i) content-before-emotion communicative habit
   (ii) left-to-right typing
Predictions of the theory

1. An infinite number of imagery roots, be they intrinsically affective or not, may be recycled as affective emojis.
   👏🤝👍💅🙏☕️🚬🎉💣❤️❤️🩹🌹…

2. The emotions in emojis are not always predictable based on their appearances (💅🧶🙇) and often vary across languages/cultures/generations (🙂🤡💊🕯).

3. Since E is outside of the linguistic Sentence, SFEs and SFPs can co-occur.

4. Since we are merely borrowing the symbolic syntax of linguistics but not also its domain-specific assumptions, the EP structure need NOT be subject to natural language-like linearization rules:
   (i) The position of the emoji is not affected by the cross-linguistic word order variation within the Sentence.
   (ii) Given the 2D nature of the computer screen, the positional relation between Sentence and E need not be strictly linear but could also be, say, overlapping (as in memes) or even temporal (as in GIFs).

5. However, since E is outside of Sentence, the affective emoji can only be sentence-peripheral (be it initial or final) but NOT sentence-middle (that is, if the ordering is linear, as in most text messages and social media posts).

6. The predominantly sentence-final position of affective emojis is probably due to:
   (i) content-before-emotion communicative habit
   (ii) left-to-right typing

NB this predicts that in languages with a right-to-left script, affective emojis would regularly show up to the left of the sentence.
Predictions of the theory

1. An infinite number of imagery roots, be they intrinsically affective or not, may be recycled as affective emojis.

2. The emotions in emojis are not always predictable based on their appearances and often vary across languages/cultures/generations.

3. Since E is outside of the linguistic sentence, SFEs and SFPs can co-occur.

4. Since we are merely borrowing the symbolic syntax of linguistics but not also its domain-specific assumptions, the EP structure need NOT be subject to natural language-like linearization rules:
   (i) The position of the emoji is not affected by the cross-linguistic word order variation within the sentence.
   (ii) Given the 2D nature of the computer screen, the positional relation between sentence and E need not be strictly linear but could also be, say, overlapping (as in memes) or even temporal (as in GIFs).

5. However, since E is outside of sentence, the affective emoji can only be sentence-peripheral (be it initial or final) but NOT sentence-middle (that is, if the ordering is linear, as in most text messages and social media posts).

6. The predominantly sentence-final position of affective emojis is probably due to:
   (i) content-before-emotion communicative habit
   (ii) left-to-right typing

NB this predicts that in languages with a right-to-left script, affective emojis would regularly show up to the left of the sentence.
1. We can no longer simply assume a Derivation→Interface model in our analyses => because CMC is likely to involve more than the (Chomskyan) language faculty => it is truly cross-modality

2. We need to further tease apart domain-general tools and domain-specific ones
   => Domain-general: Merge in its set-theoretic sense, symbolic logic, “3rd factor,” etc.
   => Domain-specific: Move, Phase Theory, Labeling Theory, etc.
   (basically anything motivated by the linguistic “interfaces”)
Consequences of CMC for Theoretical Linguistics

1. We can no longer simply assume a Derivation→Interface model in our analyses
   => because CMC is likely to involve more than the (Chomskyan) language faculty
   => it is truly cross-modality

2. We need to further tease apart domain-general tools and domain-specific ones
   => Domain-general: Merge in its set-theoretic sense, symbolic logic, “3rd factor,” etc.
   => Domain-specific: Move, Phase Theory, Labeling Theory, etc.
      (basically anything motivated by the linguistic “interfaces”)

In a word, CMC forces us to think outside the conventional linguistics box!
THANK YOU!
Selected references


