

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

**Chenchen (Julio) Song**  
**Zhejiang University**

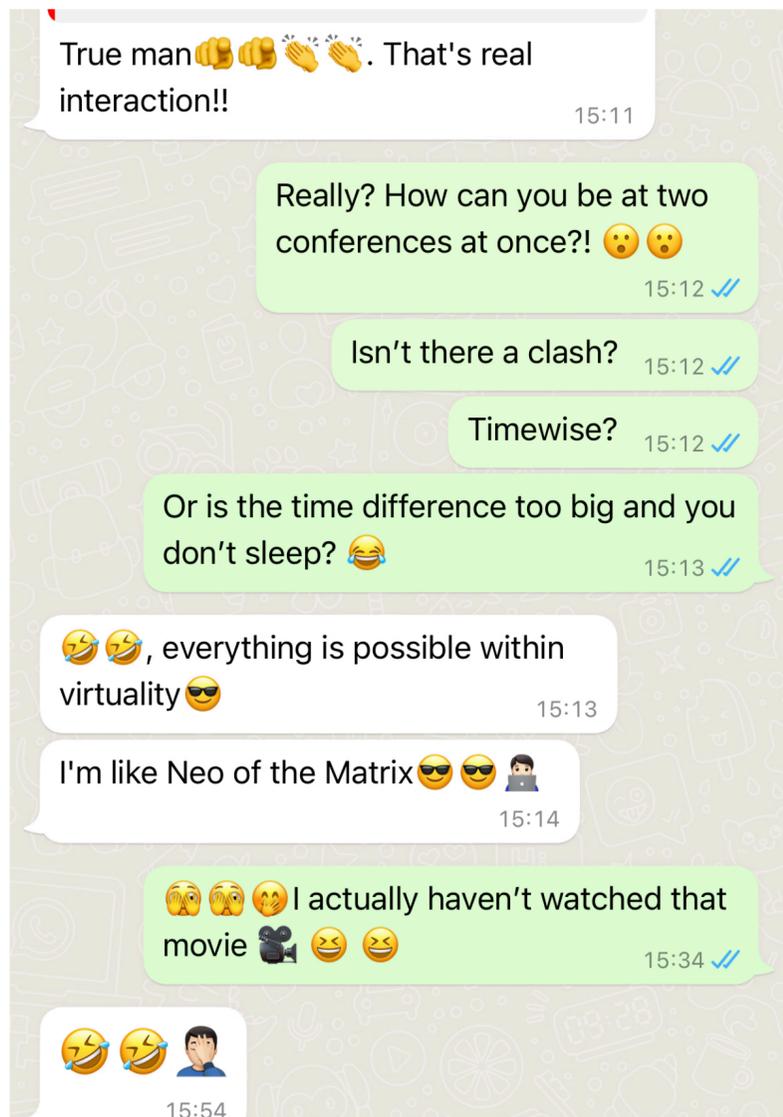
**Cambridge SyntaxLab**  
**June 28, 2022**

# Emojis in CMC (=computer-mediated communication)

## An increasingly important part of life

A recent WhatsApp chat of mine 🙌

(interlocutor consent obtained)



A recent tweet of mine 🙌



Julio Song @JulioSongC · Jun 20

This is such a relatable new song! Totally me 😂😂 The last song I related so strongly to was « je ne veux pas travailler » 😂😂



music.apple.com

A Night Owl by Li Ronghao

Listen to A Night Owl by Li Ronghao on Apple Music. 2022. Duration: 4:03

“92% of the world’s online population use emoji”

— Jennifer Daniel, Unicode Emoji Subcommittee Chair

The top ten emoji used worldwide are 😂❤️😂👍😭🙏💋😍😍😊😊.

— Unicode Consortium (2021)

# Emojis in CMC

## The emotions conveyed by emojis can be highly subtle

I notice myself using the dolphin emoji a lot for no clear reason 🐬

 **Julio Song** @JulioSongC · Jun 15 ...  
I have finally succeeded installing LaTeX on my new office computer after leaving it on for a whole night. Such a "nightmare"! I hope my lecture materials in the next semester will be particularly good after this much hard work! 😂💪📖🐬

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Am attending this year's grapholinguistics conference this week & the slides of the talk right now (by ~~Markus Steinmetz~~) are so awesome that I'm immediately captivated (despite my ignorance in the topic). There must be some magic tricks for creating appealing slides! 🙌🔮🐬

### Don't put on a happy face! Are you using the smiley emoji all wrong?

The classic grinning emoji has once more changed its meaning - at least amongst gen Zers. So what is it communicating now - and what should you be using instead?



*"It's a tool of passive aggression and dismissiveness. A smiley face emoji at the end of a message is a patronising pat on the head from somebody who wishes you nothing but ill fortune."*

— The Guardian (Aug 2021)



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### Confusing emojis according to [mrporter.com](http://mrporter.com):



Excited?  
Awkward?



Delighted?  
Ironic?



Helpful?  
Sassy?



Cutesy?  
World-weary?

*"It's a tool of passive aggression and dismissiveness. A smiley face emoji at the end of a message is a patronising pat on the head from somebody who wishes you nothing but ill fortune."*

— [The Guardian](http://TheGuardian) (Aug 2021)

# Emojis as court evidence?! 😱

“WeChat emojis included in verdicts: Every emoji you send out could become court evidence”

“Since 2018, there have been 158 legal cases nationwide where emojis are used as evidence.”

news of Jun. 27, 2022

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## 微信表情符号写入判决：你发的每个emoji都可能成为呈堂证供

06-27 13:03 阅读 111万+

微信作为常用的通讯工具，已经成为了每个人的日常，熟练运用每一个表情符号，也成为职场人必备技能。但是，你有没有想过，表情符号也有可能成为“呈堂证供”呢？

👍 🙌 😄

## 已被写入判决书

经检索裁判文书网，2018年以来，全国共有158起以表情符号作为证据的案件，其中2018年8件、2019年23件、2020年66件、2021年61件，增幅明显。

# Emojis as court evidence?! 😱

“WeChat emojis included in verdicts: Every emoji you send out could become court evidence”

*Example: a tenancy dispute case where the tenant merely replied a 😊 after being asked repeatedly by the landlord whether they would agree to renew the lease on a higher rent =>*

*The landlord interpreted the emoji as “agreed” and got the court’s support.*

“Since 2018, there have been 158 legal cases nationwide where emojis are used as evidence.”



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# Two main uses of emojis

**Affective vs. nonaffective** 📌 *aka use-conventional vs. truth-conditional, “non-at-issue” vs. “at-issue” (Potts’s 2005 et seq. terminology)*

**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)

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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)

### Anaphora

—I’d give you a 📦 You will like it.

vs

—I’m in 😊 #You will feel it.



# 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*

fall snow PRF SFP

Wow, I'm so excited!

“It’s snowing. (happy tone)” ≈ It’s snowing 😊

b. xià xuě le *a*

fall snow PRF SFP

Oh, I didn’t expect this!

“It’s snowing. (surprised tone)” ≈ It’s snowing 😲

c. xià xuě le *you*

fall snow PRF SFP

You’d better put on some clothes.

“It’s snowing. (kind reminder tone)” ≈ It’s snowing 😊

d. xià xuě le *ha*

fall snow PRF SFP

I didn’t mean to be late but...

“It’s snowing. (softening tone)” ≈ It’s snowing 😊

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?** 🤔

Song (2019): Yes ➡ Song (2022): No

**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 **empirical**
- Formal linguistic tools **can** be used to analyze CMC data **theoretical**

# A bit more on sentence-final particles

They have their own detailed taxonomy

Table 1: Mandarin Chinese SFPs (Paul 2014)

Type I (TA-oriented)	Type II (sentence type)	Type III (attitude)
<i>le</i> 'currently relevant state'	<i>ma</i> 'interrogative'	<i>o</i> 'warning'
<i>láizhe</i> 'recent past'	<i>ba</i> 'imperative'	<i>a/ya</i> 'astonishment'
<i>ne<sub>1</sub></i> 'continued state'	<i>ne<sub>2</sub></i> 'follow-up question'	<i>ne<sub>3</sub></i> 'exaggeration'
...	...	...



➡ We are only concerned with Type III particles, which are “the outermost” in the syntactic 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 😊

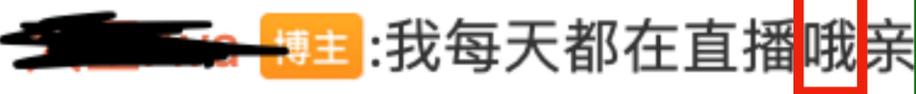
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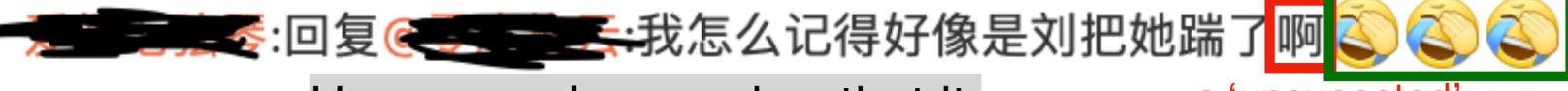
d. xià xuě le ha 😂

fall snow PRF SFP

“It’s snowing. (softening tone)”

 **SFP** **SFE**  
I’m live-streaming every day, dear (teasing tone)  
22-6-6 13:24 来自北京 o ‘cute reminder’

 **SFP** **SFE**  
Your profile name fits you very well (jocularly teasing tone)  
22-6-6 02: o ‘cute reminder’

 **SFP** **SFE**  
How come I remember that it was Liu who had dumped her (jokingly unexpected tone)  
22-6-5 19:27 a ‘unexpected’

 **SFP** **SFE**  
Superstar girl, happy birthday (cute fangirl tone)  
22-6- o ‘cute reminder’

# 1st reason

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

## Elements of the same grammatical category are complementary

### Example:

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

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### Example:

- (5) a. *I have three books.* (numeral & number)  
b. *I will be 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. *ne*<sub>Neg</sub> + *pas*<sub>AdvP</sub>)

# 2nd reason

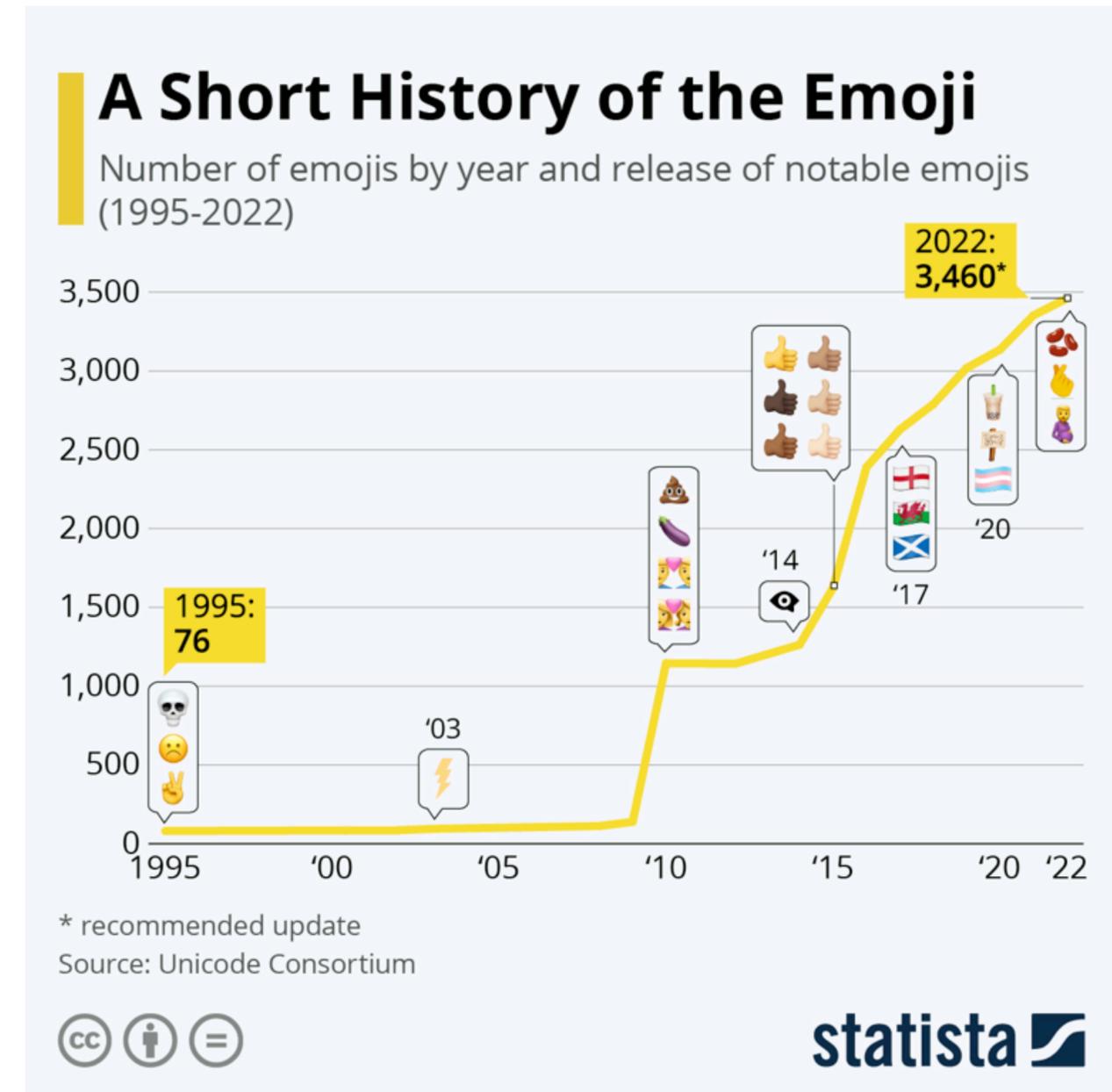
## SFPs are a closed class, while SFEs are an open class

The number of SFPs in Mandarin is generally assumed to be **under 30**:

- Chao (1968) lists **26** (including many borderline cases)
- Li & Thompspon (1981) list **6** (only the most common ones)
- Sun (1999) lists **28** (for all Mandarin varieties throughout the 19th and 20th centuries)

The SFE inventory is much larger and keeps expanding:

- New smileys are created every year (see Emojipedia)
- Many platform-specific ones too (e.g., Twitter, Weibo)
- Many nonsmiley emojis can be used affectively 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

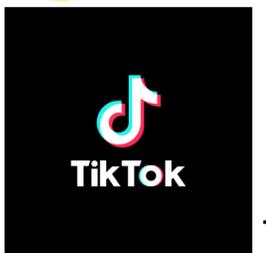
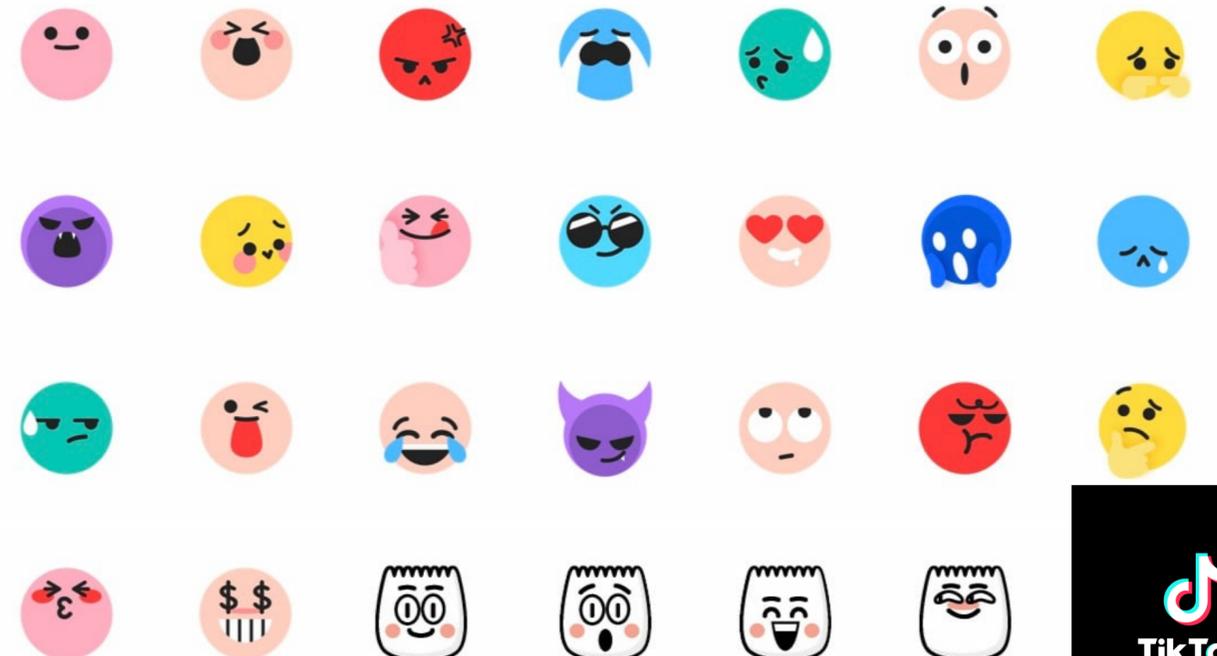
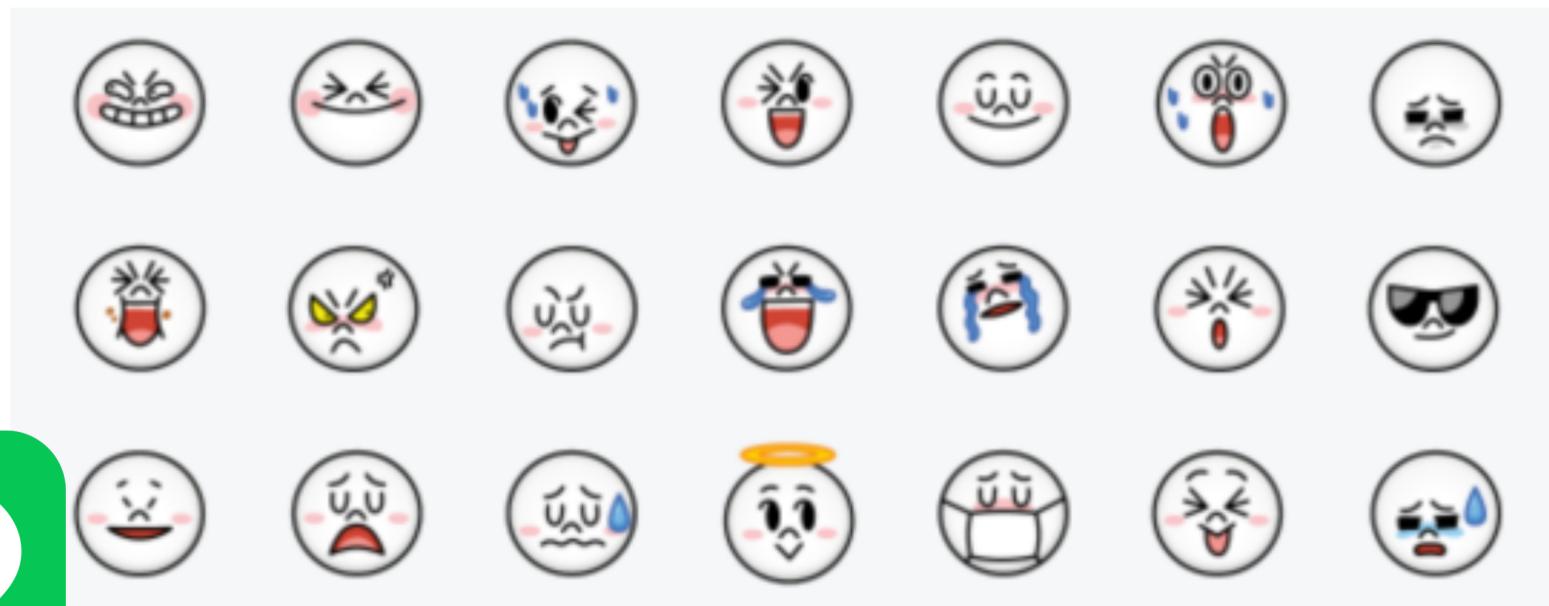
**Weibo**



**WeChat**



(see [emojiall.com](http://emojiall.com) for more)



# Platform-specific emojis

Cross-platform differences may lead to subtle affective differences

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



**Apple**



**Twitter**



**WeChat**



**Weibo**



**QQ**

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

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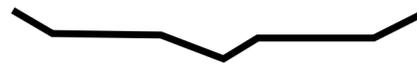
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**QQ**

<b>User 1</b>	"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)
<b>User 2</b>	slightly annoyed	a bit sad	wondering	confused	slightly indifferent or skeptical	slightly naughty	silly
<b>User 3</b>	speechless (negative)	negative attitude	playing innocent, "not me not me"	pretending to be angry	negative attitude	playing innocent, "not me not me"	speechless (negative)
<b>User 4</b>	speechless	speechless & unhappy	"I don't wanna hear"	pretending to be angry	speechless (friendlier)	"I don't wanna hear" (cuter)	totally speechless, "death smile"
<b>User 5</b>	real eye-rolling (highly negative)	≈Weibo	≈QQ1	pretending to be angry	a bit of disdain	a bit shocked	humorously sarcastic
<b>User 6</b>	real eye-rolling	confused	pretending to be confused	arrogant	pondering	pretending to be confused	backhanded compliment

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Compared with the other eye-rolling, this animated one ... adds extra **absurdity** and **humor**. With smiling, there is also a slightly **sarcastic** tone. I think it is a mixture of complex emotions and subtle feelings. Thus, personally, I find it peculiarly **lovely**.

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User 1	User 7: For me, emojis with a nonflat mouth are more negative than those with a flat one, which are in turn more negative than those with an open mouth (so here the 2nd emoji is more negative than the 1st, which is in turn more negative than the 3rd). The last emoji is different from the rest. I tend to express the emotion of <b>sarcasm</b> or <b>fake politeness</b> when using it.			disappointed	disappointed & sad	slightly embarrassed or a bit cheeky	amused (for chaos or minor confusion)
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# 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]

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## 4. Various quasi emojis

*Highly popular and versatile in Asia*

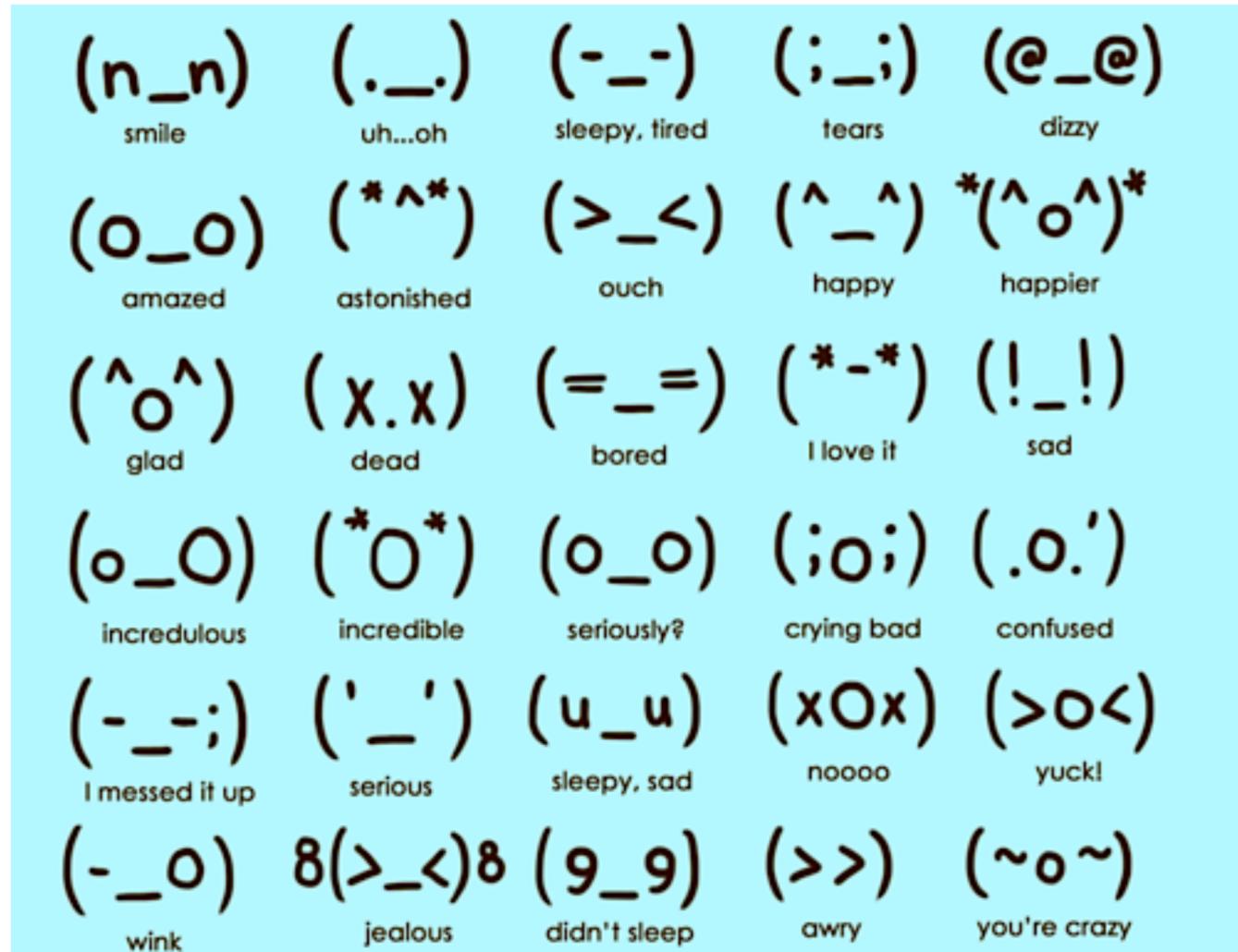
**emoticons** :-) XP ^\_^ (>\_<) (●^o^●) (˘.˘\*) 囧 \ (◎o◎) / !

**punctuation marks** The tilde ~ is frequently used as a tone-softening mark in Chinese

Typing three Chinese-style periods 。 。 。 has a similar tone-softening effect

~ is cuter, 。 。 。 is more like “you know” ㄋ ( ㄗ ∇ ㄣ ) ㄋ

# Kaomojis (popular in Asia)



<https://pin.it/pZZtx4t>

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<https://pin.it/pZZtx4t>

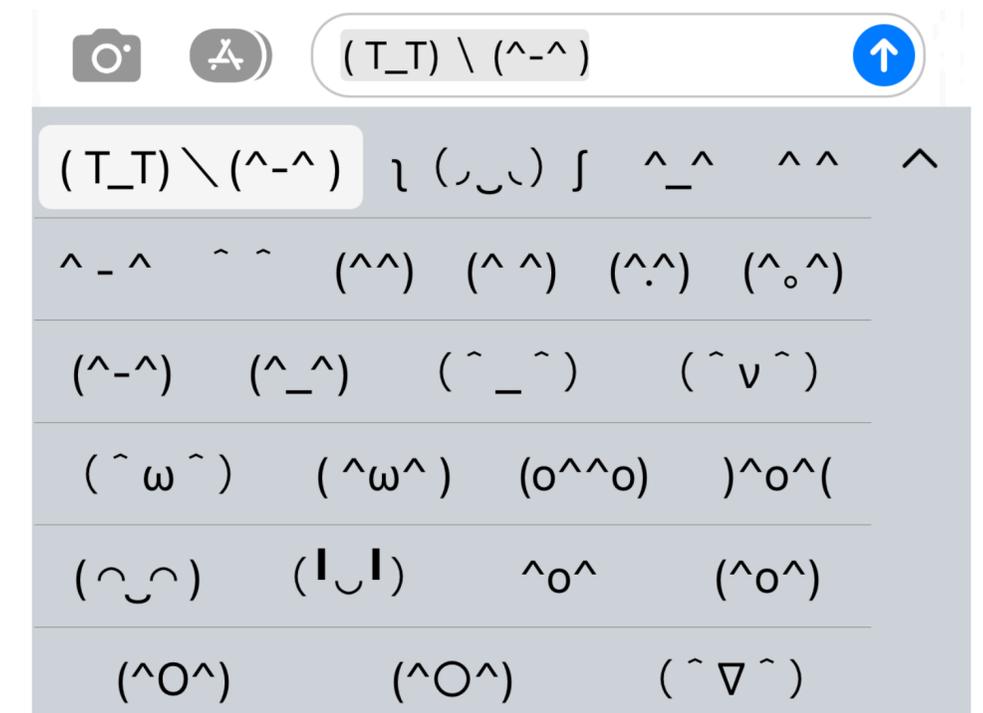
## How to input (on iOS)?

Step 1: Add Japanese keyboard.

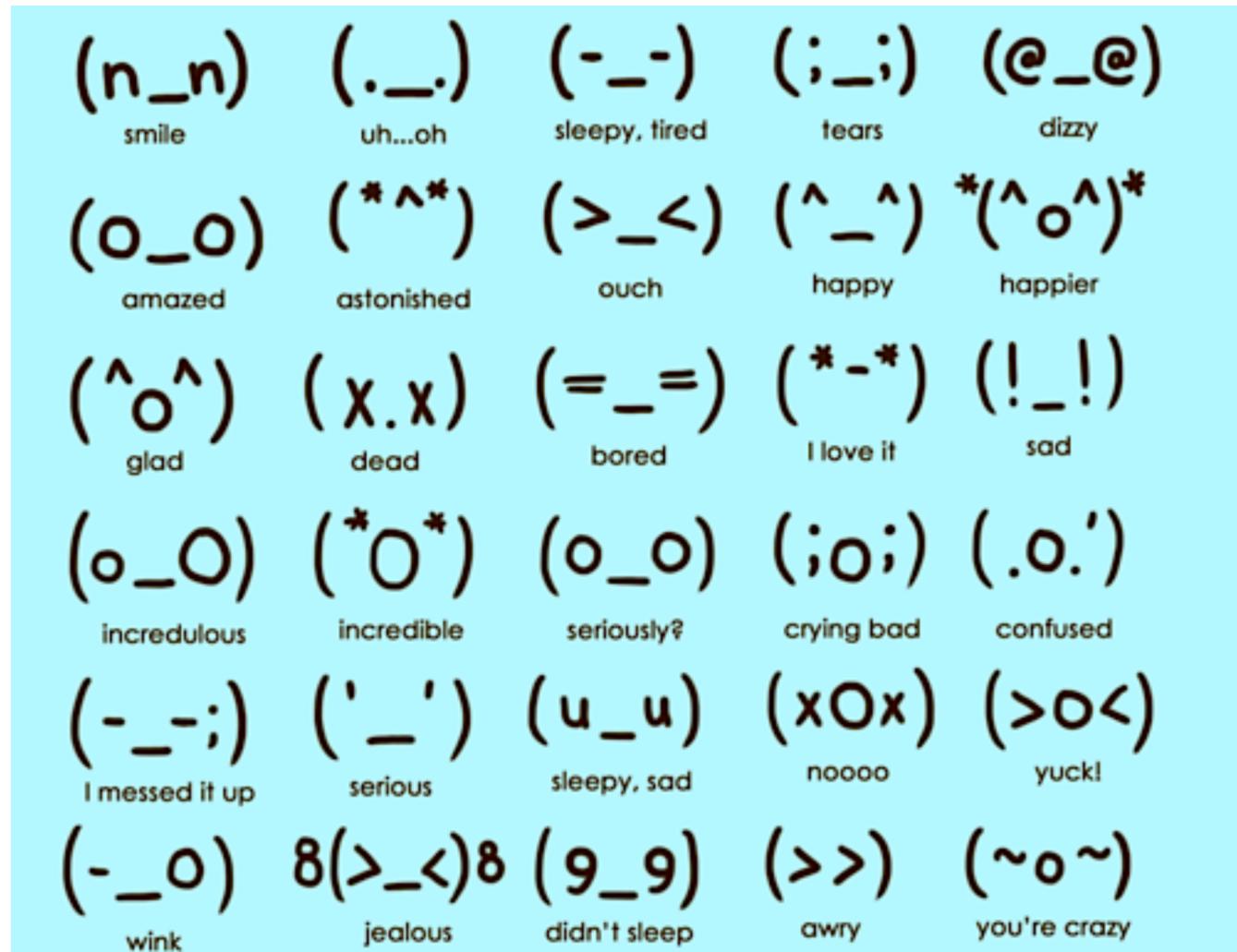
Step 2: Press the “^\_^” key.



Step 3: Voilà!

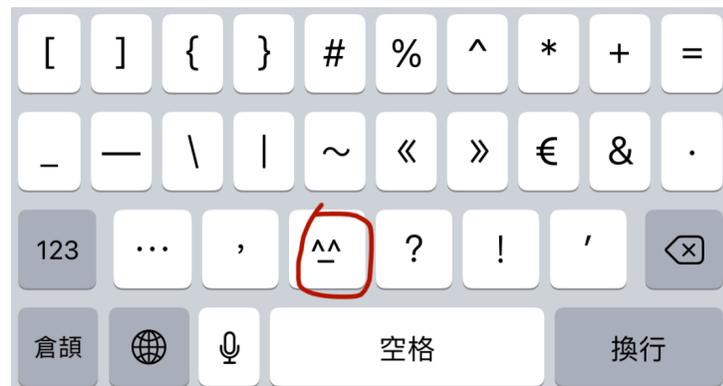


# Kaomojis (popular in Asia)



<https://pin.it/pZZtx4t>

**Apparently also works with Chinese keyboards! 🙏**



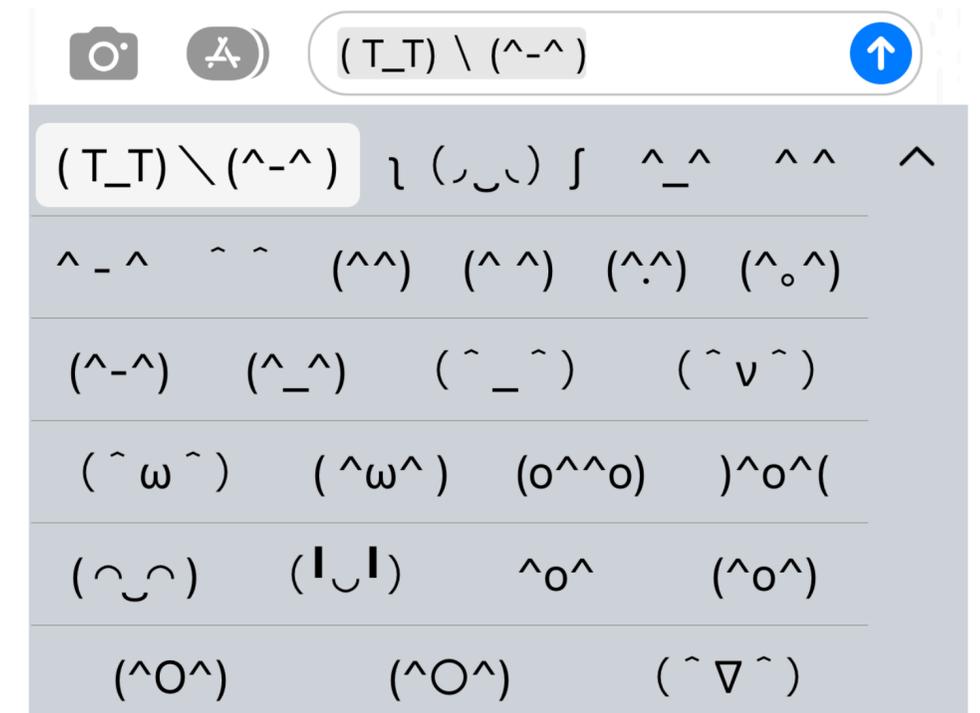
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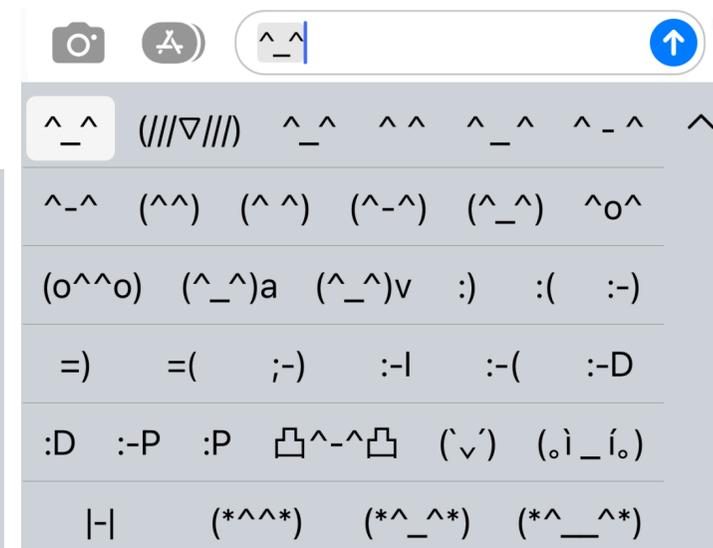


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**Apparently also works with Chinese keyboards! 🙏**



👉 **but doesn't work on Korean keyboard**



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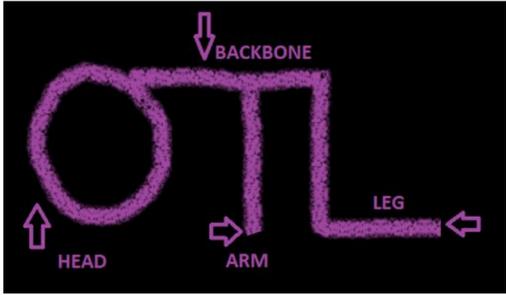
Step 2: Press the “^\_^” key.



Step 3: Voilà!



# Hangul-based emoticons (popular in Korea)

- 😭 ㅍㅍ tears streaming down (variations: ㅍ.ㅍ/ㅍ\_ㅍ)
- ㅠㅠ tears streaming down x2 (variations: ㅠ.ㅠ/ㅠ\_ㅠ)
- ㅇㅈㄴ person crying on the ground (variations: OTL/ORZ)
- ㅇㅈㄴ diagram:  <https://qr.ae/pvoqLT>
- ㅇㅈㄴ person vomiting on the ground
- 😱 ㅇㅁㅇ shocked (variations: ㅇㅁㅇ/ㅁㅁㅇ/ㅇㅁㅁ)
- ㅋㅋㅋ LOL (variation: ㅎㅎㅎ)
- ㄴ sticking up the middle finger (variation: ㄴㄴ)
- ㅎ\_ㅎ cute face (variation: ㅋㅋㅋ)



korean texting slang		
ㅋㅋ *laughing*	ㅠㅠ *crying*	ㅎㅎ [하하] haha.
ㅇㅇ [응] yes.	ㅈㅈ tsk tsk.	ㅇㅋ [오케이] okay.
ㄱㅅ [감사] thank you.	축ㅋ [축하] congratulations.	ㄴㄴ [노노] no.
ㅈㅅ [죄송] sorry.	ㄱㄷ [기다려] wait.	ㄱㄱ [고고] gogo.
ㅂㅂ [바이바이] bye bye.	ㄷㄷ [덜덜] *shivers*	ㅅㄱ [수고] good job.



# The tone-softening ~ and ◦ ◦ ◦

## Example:

(7) a. *bāng wǒ mǎi dōngxi* ~~~

[Mandarin]

help me buy stuff 😊

“Help me buy something (cute tone; without the tildes this sounds impolite)”

b. *zhēnde ma* ◦ ◦ ◦

real Q ㄣ ( ㄨ ㄨ ㄣ ) ㄣ

“Really? (tone: alright, mkay, whatever)”

c. *gǔn* ◦ ◦ ◦ ◦ ◦ ◦

roll ㄣ ( ㄨ ㄨ ㄣ ) ㄣ ㄣ ( ㄨ ㄨ ㄣ ) ㄣ

“Get lost... (tone: but don’t really go away — I don’t “hate” you that much)”

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roll ㄋ (ㄹ ▽ ㄣ) ㄹ ㄋ (ㄹ ▽ ㄣ) ㄹ

“Get lost... (tone: but don't really go away — I don't “hate” you that much)”

*The cutesy tilde ~ is apparently popular throughout East Asia...*

The screenshot shows a Quora search interface. At the top is the Quora logo and a search bar with the text 'Search for questions, people, and topics'. Below the search bar is a question: 'Why do Korean people use ~~ in texting?'. Underneath the question, it says 'All related (40)' and 'Sort Recommended'. The first answer is from 'Eunjeong Kim', who lives in Busan, South Korea and has been active for 3 years. The answer text is 'I use it to soften the sentence.'

<https://www.quora.com/Why-do-Korean-people-use-in-texting/answer/Eunjeong-Kim-7>

# The tone-softening ~ and ◦ ◦ ◦

## Example:

(7) a. *bāng*

help

“Help

b. *zhēn*

real

“Real

c. *gǔn*

roll

“Get

**Wave dash** [edit]

Main article on the Japanese Wikipedia: [波ダッシュ](#)

Symbol	Unicode	JIS X 0213	Encoding
～	U+301C	1-1-33	&#12316;

The **wave dash** ～ (波ダッシュ, *nami dasshu*, wave dash) resembles a lengthened **tilde** (FULLWIDTH TILDE), which does not exist in JIS X 0208.

Uses in Japanese include:

- To indicate ranges (5時～6時, from 5 o'clock to 6 o'clock; 東京～大阪 *Tokyo* to *Osaka*). In such cases it may be read as *...kara...made* (...から...まで)
- To separate a title from a subtitle on the same line; in English a **colon** is used for this purpose.
- To mark subtitles: ～概要～
- In pairs, in place of dashes or brackets: ～～答え～～
- To indicate origin: フランス～ (from France)
- To indicate a long or drawn-out vowel (ですよ～ or あ～～), usually for comic or **cute** effect
- To indicate or suggest that music is playing: ♪ ～
- To suggest a ruled line: ～～～～ or ～・～・～

[https://en.wikipedia.org/wiki/Japanese\\_punctuation#Wave\\_dash](https://en.wikipedia.org/wiki/Japanese_punctuation#Wave_dash)

- 3 spaces before the
- 1 space between the space below.
- Each new paragraph
- Subheadings have 1 spaces above.
- Punctuation marks no when they occur at the a square with the last ch

ndarin]

te)”

h)”

The cutesy tilde ~ is apparently popular throughout East Asia...

## Quora

Search for questions, people, and topics

### Why do Korean people use ~~ in texting?

All related (40) ▾

Sort Recommended ▾



**Eunjeong Kim**

Lives in Busan, South Korea · 3y

I use it to soften the sentence.

<https://www.quora.com/Why-do-Korean-people-use-in-texting/answer/Eunjeong-Kim-7>

# 2nd reason (repeated)

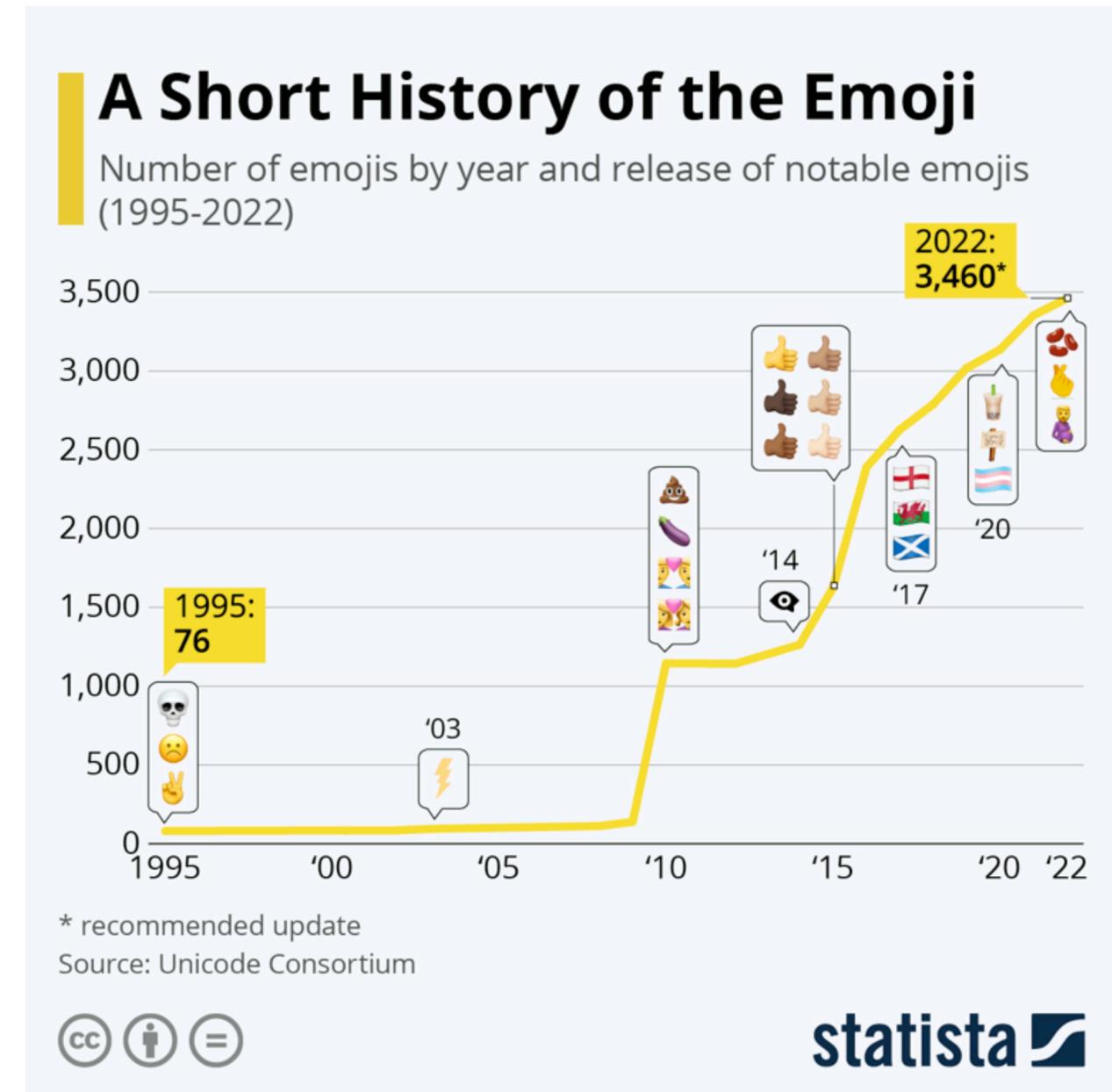
## SFPs are a closed class, while SFEs are an open class

The number of SFPs in Mandarin is generally assumed to be **under 30**:

- Chao (1968) lists **26** (including many borderline cases)
- Li & Thompspon (1981) list **6** (only the most common ones)
- Sun (1999) lists **28** (for all Mandarin varieties throughout the 19th and 20th centuries)

The SFE inventory is much larger and keeps expanding:

- New smileys are created every year (see Emojipedia)
- Many platform-specific ones too (e.g., Twitter, Weibo)
- Many nonsmiley emojis can be used affectively too
- Various quasi emojis (e.g., emoticons, special punctuation marks)



# 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 uninflected 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)*

### Example

*halt, nun, einmal*

*ja*

*mal*

*doch*

### Connotation

some unpleasant fact must be accepted

reminder to the listener

a casual, less blunt tone

emphasis, urgency, impatience, etc. (highly versatile)

# 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).”

(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!*

# 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**

<https://chatterbug.com/grammar/german/modal-particles-modalpartikeln>



🏠 German Grammar Explained / Modal particles

Share this article with others: [🐦](#) [f](#) [in](#)

**Modal particles** or *Modalpartikeln* as they are known in German; a dry sounding term for something that brings a lot of color and life to the German language!

Modal particles are little words that express connotations such as **feelings** or **moods**. Because of this, they are also sometimes referred to as “filler words”. Basically, they amount to verbal emojis :D

*Some online sources mention that German modal particles are like “verbal emojis”*

# 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**

http



soupsticle · 7 mo. ago · edited 7 mo. ago

Native

IMO the most important thing to understand about modal particles is that they change mood, not meaning.

They are effectively "verbal emojis".

for example "halt".

halt = 🤷 (shrug)

[https://www.reddit.com/r/German/comments/qmit3d/comment/hj9t3f1/?utm\\_source=share&utm\\_medium=web2x&context=3](https://www.reddit.com/r/German/comments/qmit3d/comment/hj9t3f1/?utm_source=share&utm_medium=web2x&context=3)

Das ist halt so.

= That's how it is. 🤷 / That's just how it is.

Dann hat er halt eine große Nase. = So he has a big nose, then. so what? 🤷

If you look just as the word translations ("just" vs "so what") it doesn't make much sense. But as soon as you understand that the word is used to convey an emotion/feeling, it becomes much clearer and easier to grasp.

↑ 139 ↓ Reply Share Report Save Follow

*Some online sources mention that German modal particles are like “verbal emojis”*

# Positioning of affective emojis

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

Language	Family	Type	Basic word order	Place of affective emoji
<b>Mandarin</b>	Sinitic	isolating	SVO	sentence-final
<b>Japanese</b>	Japonic	agglutinative	SOV	sentence-final
<b>Korean</b>	Koreanic	agglutinative	SOV	sentence-final
<b>English</b>	Germanic	analytic	SVO	sentence-final
<b>German</b>	Germanic	fusional	SOV (V2 in matrix)	sentence-final
<b>French</b>	Romance	fusional	SVO	sentence-final
<b>Irish</b>	Celtic	fusional	VSO	sentence-final
<b>Basque</b>	Language isolate	agglutinative/ fusional	SOV	sentence-final
<b>Hungarian</b>	Finno-Ugric	agglutinative	relatively free	sentence-final

# 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”* 🙌 [French]  
“The fathers, they have the right to whisky and other alcohols of ‘fellow.’”
- b. *Ich dachte immer, dass hier alles anonym ist* 🙌😊 [German]  
“I always thought that everything was anonymous here.”
- c. *gozenchū no ame wa dokoni ittandesu ka* 🤔 [Japanese]  
“Where did the rain in the morning go?”
- d. *Membeo-deul-i ‘hat-gyu’-rago bureum* 😏 [Korean]  
“The members calling him ‘hot-gyu’”
- e. *RT agus fág trácht le bheith san áireamh!!* 😍 [Irish]  
“RT and leave a comment to be included!!”
- f. *Bilera eta ekitaldi nagusiak bueltan dira Euskaldunan* 😊 [Basque]  
“Meetings and big events are back in Basque.”
- g. *Legyetek a barátaim, ugyanígy doraszell a nevem* 😊 [Hungarian]  
“Be my friends (on BeReal). My name is just doraszell.”

# 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* 😊 [Basque]  
*Los grandes eventos y las reuniones están de vuelta en Euskalduna* 🎉 [Spanish]  
“Meetings and big events are back in Basque.”
- b. *Bizkaiak egunero zaintzen ditu mendetasun-egoeran dauden adineko milaka pertsona* 👵👴💕 [Basque]  
*Bizkaia cuida cada día de miles de personas mayores en situación de dependencia* 👵👴💕 [Spanish]  
“Every day, Bizkaia cares for thousands of elderly people in a situation of dependency.”

# Interim 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 (not counterexamples)

### I. Responses to earlier messages (a bit like interjections)

#### Example:

- (12) —How is she 10 years older than him? She looks 10 years younger 😂.  
—😂😂 From which angle does she look younger than him? (YouTube)

### II. Deictic road signs or creative bullet list icons

#### Example:

- (13) 📅 17 *Gaur, #Urretxu-ko biztanleek haien kezkek eta proposamenak partekatzeko aukera izango dute 19:00ak arte.* [Basque]  
👉 *Nola imajinatzen duzue Gipuzkoa 2040an Urretxuko biztanleek? 👤* *NB the text-accompanying affective emoji is still sentence-final*  
“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?”

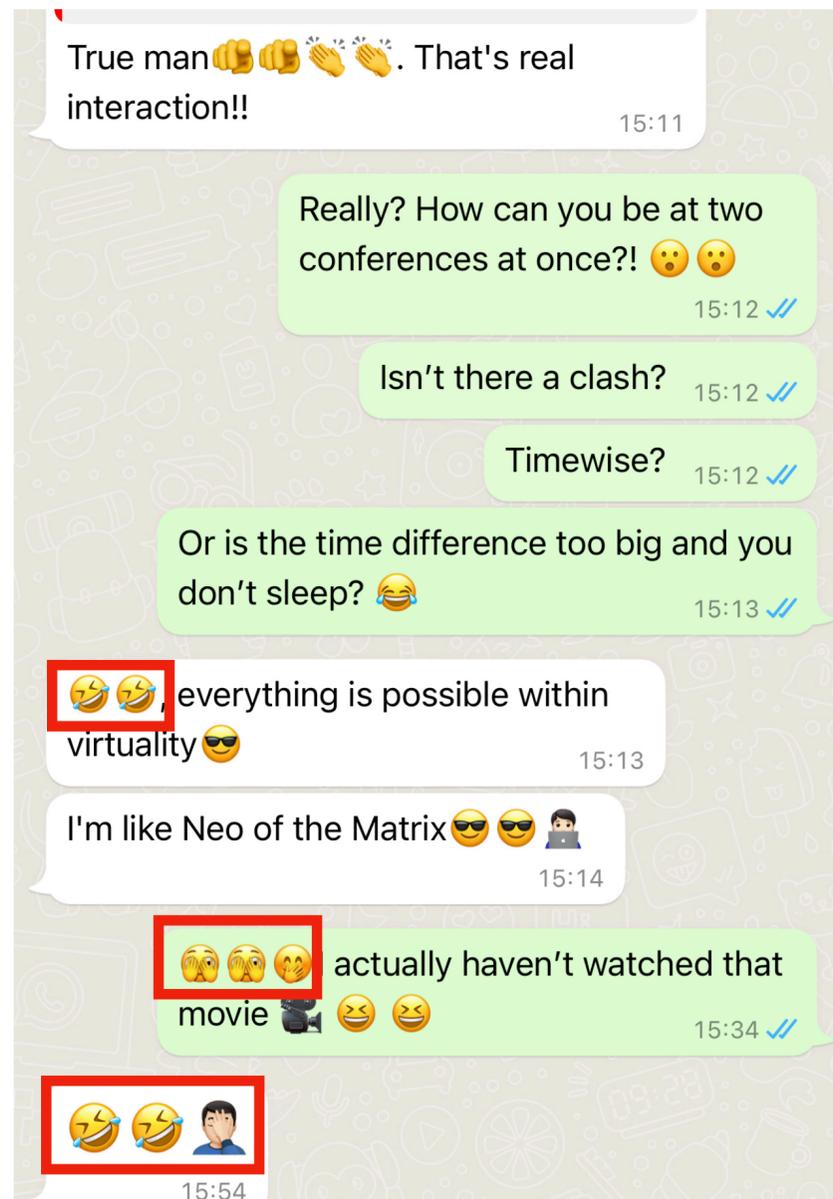
### III. Decorations

#### Example:

- (14) 🌿🌹🌿 *Szép napot kívánok mindenkinek!* 🌿🌹🌿 [Hungarian]  
“Wish everyone a beautiful day!”

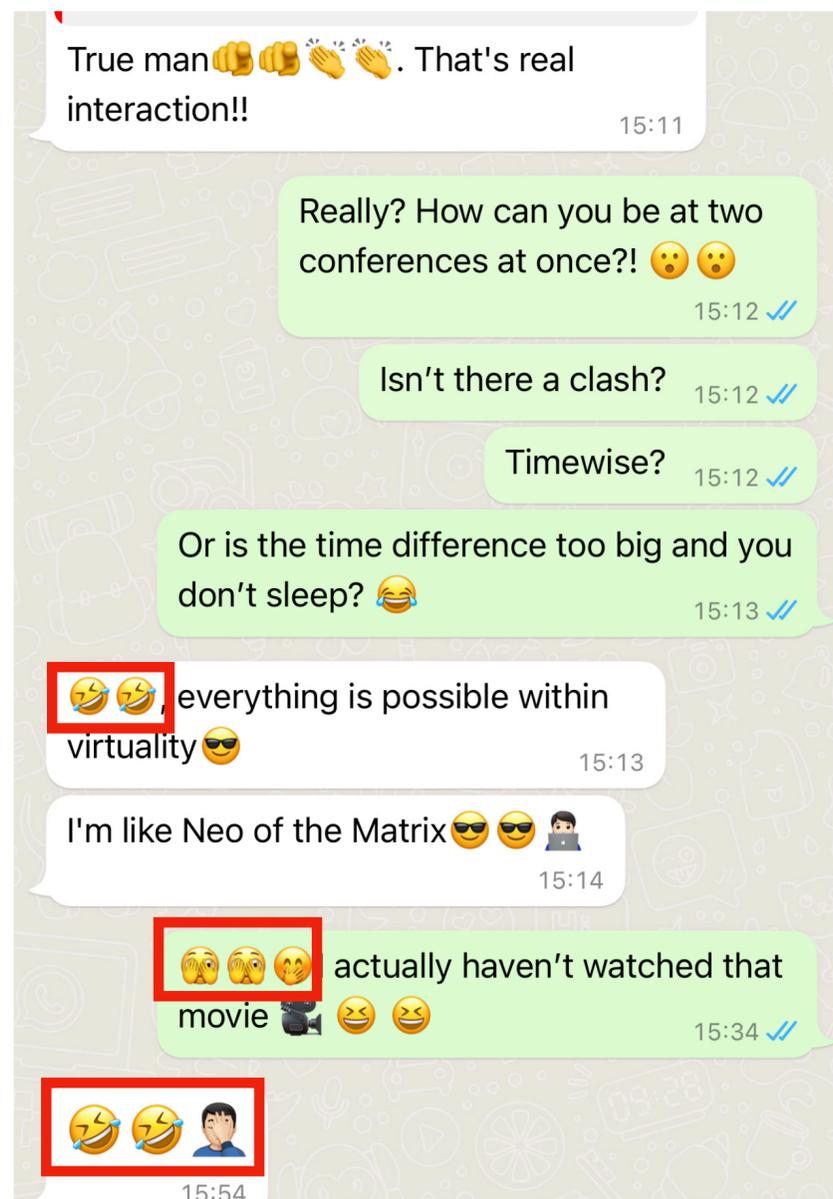
# Responses to previous messages/posts

*A recent WhatsApp chat of mine 📌*



# Responses to previous messages/posts

## A recent WhatsApp chat of mine 📌



## Comments under BTS's Instagram post 📌



# Creative bullet list icons / road signs



~~XXXXXXXXXX~~ 1h

- ☀ someday when i comeback to korea, i shall upload many soundclouds
- ☀ but is there a spare time between comeback preparation and **concert**
- ☀ ah
- ☀ comeback cancel



~~XXXXXXXXXX~~ 21h

🚩 Ants club Giveaway 🚩

- 1 0.5 EglD
- 2 0.35 EglD
- 3 0.15 EglD

To participate:

- Retweet
- Follow @ElrondAntsclub
- Tag 10 Friends
- Join the discord

🕒 72h

🔔 Result : [discord.gg/H6npG38puZ](https://discord.gg/H6npG38puZ)



~~XXXXXXXXXX~~ 1h

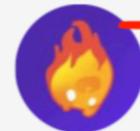
HUGE WL GIVEAWAY COLLAB 🎉🏆

- 📄 2 WL spots for @GGiraffesNFT
- 📄 2 WL spots for @ShisokaNFT
- 📄 2 WL spots for @ZUKUVERSE
- 📄 2 WL spots for @2105\_NFT

1 Follow 4 Projects above.

2 Tag 3 Friends, RT & Like.

Good Luck, GG! 🦒🍀



~~XXXXXXXXXX~~ 16h

🎁 #GIVEAWAY 1 Random DIAMOND Steam Key 🎁

How to enter:

- ✅ Follow
- 🔄 Retweet
- ❤ Like

🕒 Ends 27/06/22

🔥 Good luck everyone

**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. 🦸🏻‍♀️ 📱 🤖 🕶️ 🍷 ㄴ 눈\_눈

## What we don't know

1. What's the grammatical category of SFEs?
2. How does that category interact with the linguistic content?

# A formal linguistic 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 images into affective “visual particles”

## Bonus

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)

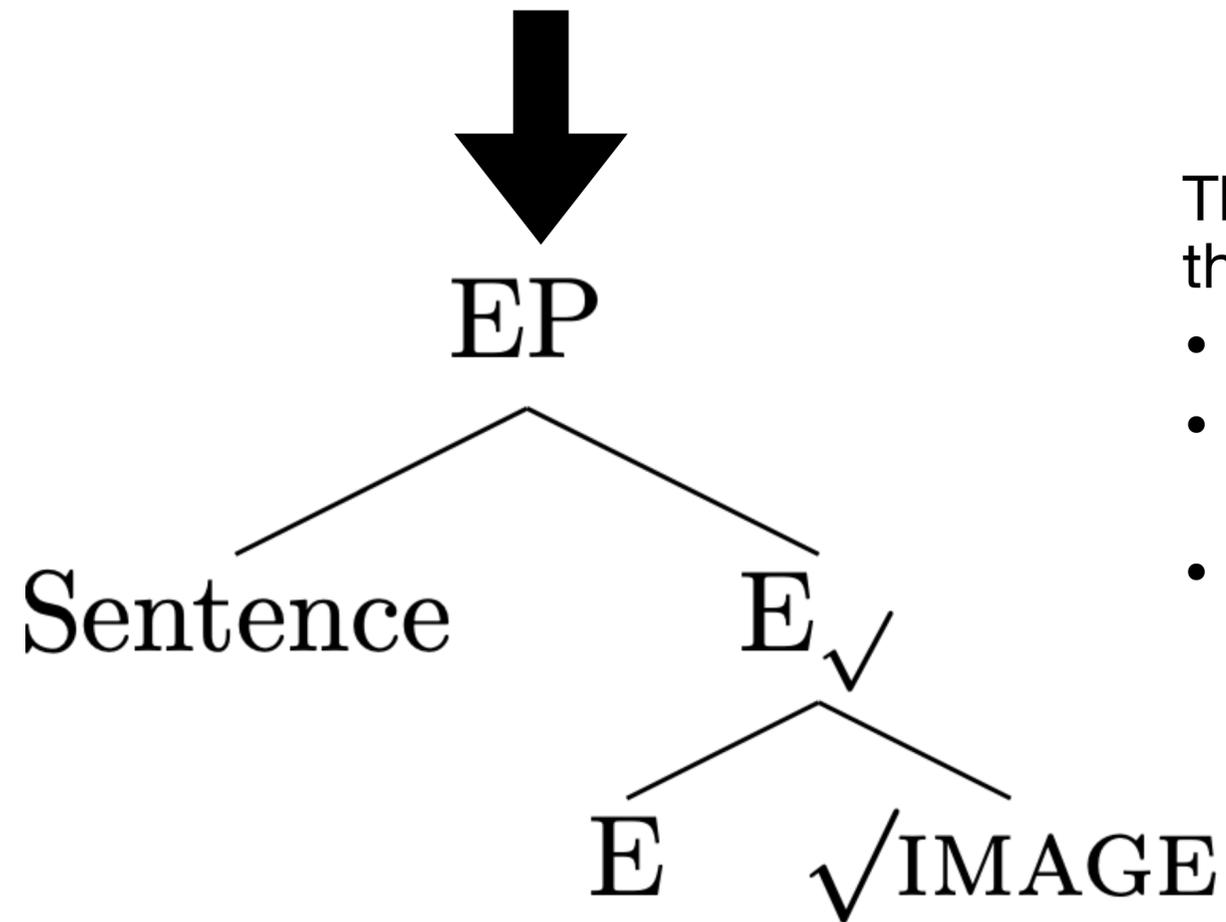
CMC data are strings of symbols. Ergo, they are amenable to symbolic analysis.

## 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

[<sub>EP</sub> Sentence [<sub>E</sub> E √IMAGE ] ] (an updated version of Song 2019)

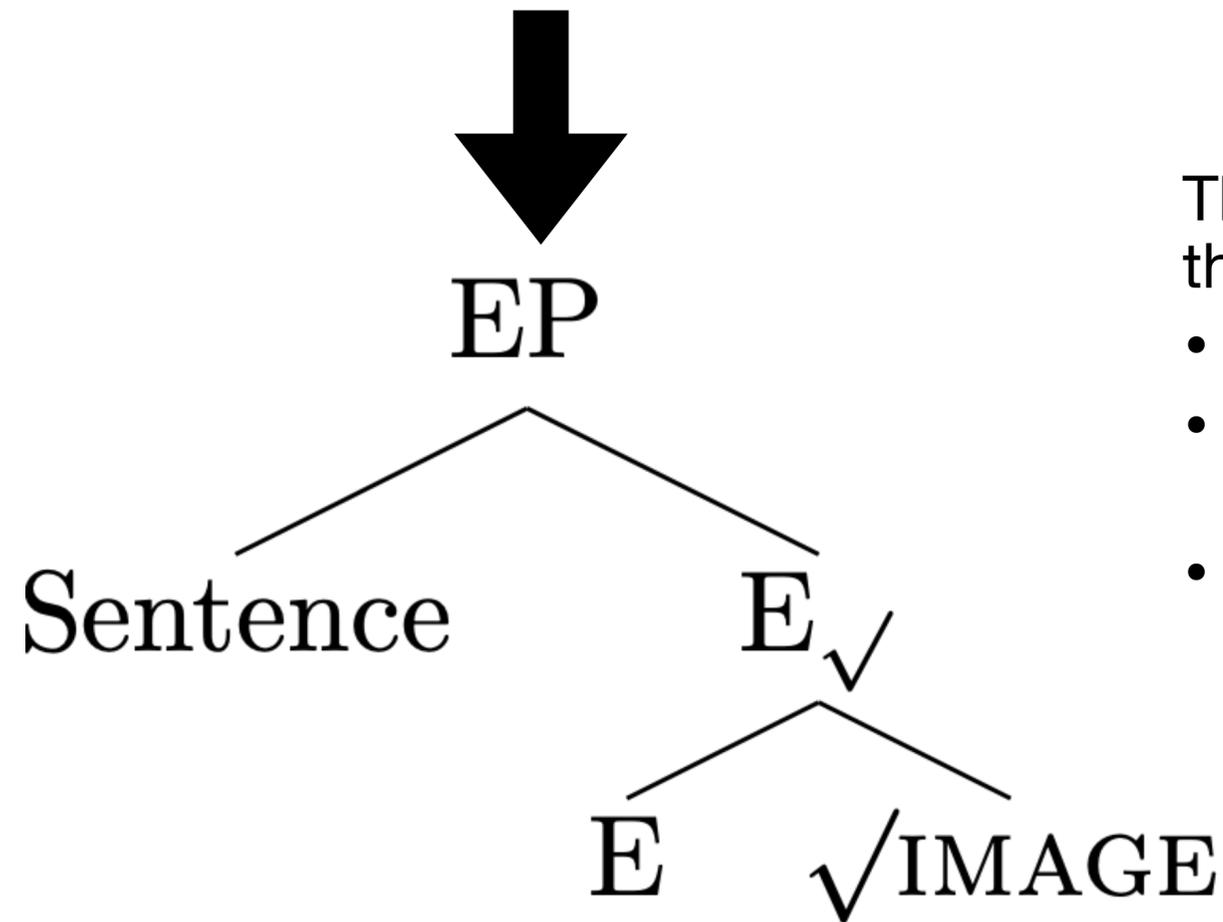


The root categorization technique is borrowed from Root Syntax theory (Halle & Marantz 1993 et seq., Borer 2013):

- 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

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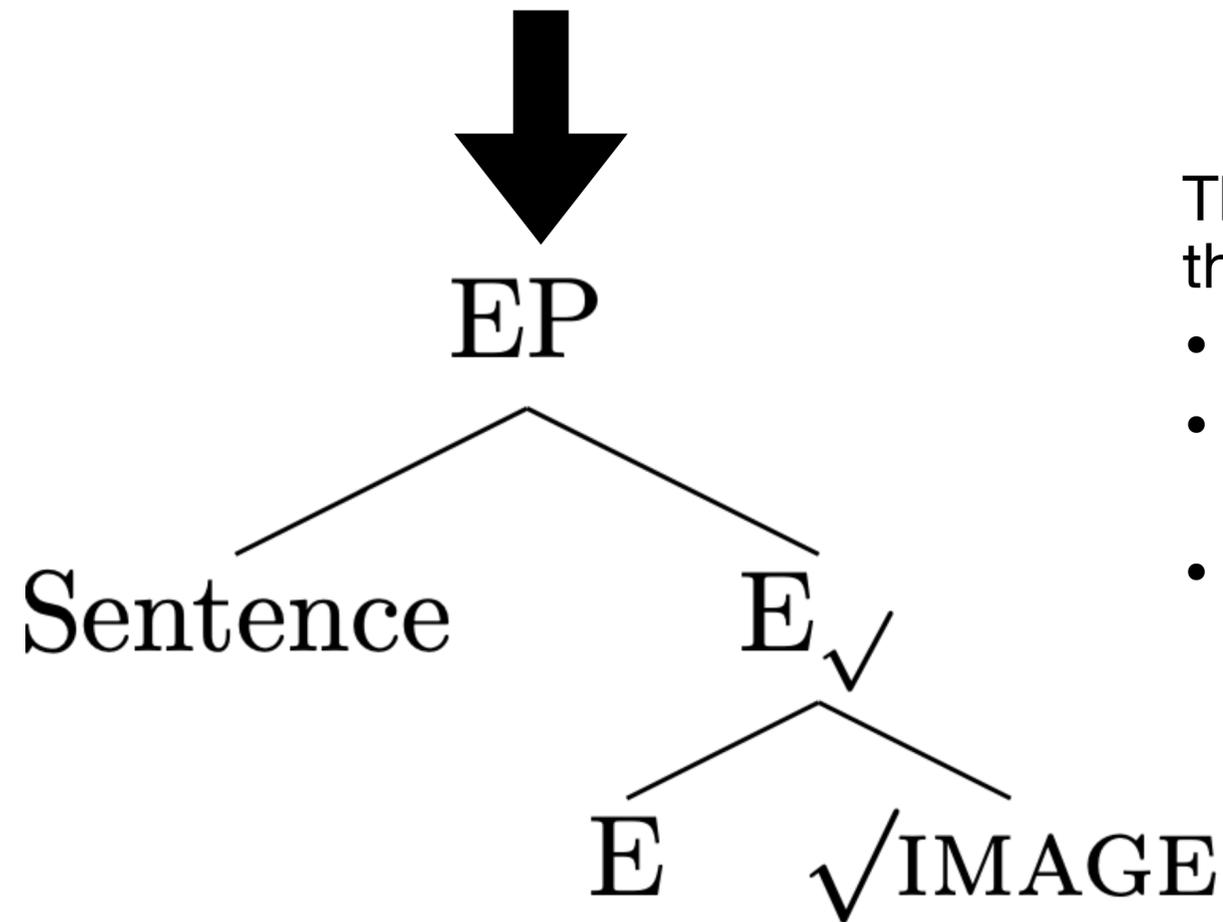
**The grammatical category E functions like an emotional wrapper for the linguistic sentence.**

**As per Root Syntax, the specific emotion conveyed by an emoji comes from neither E nor √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.**

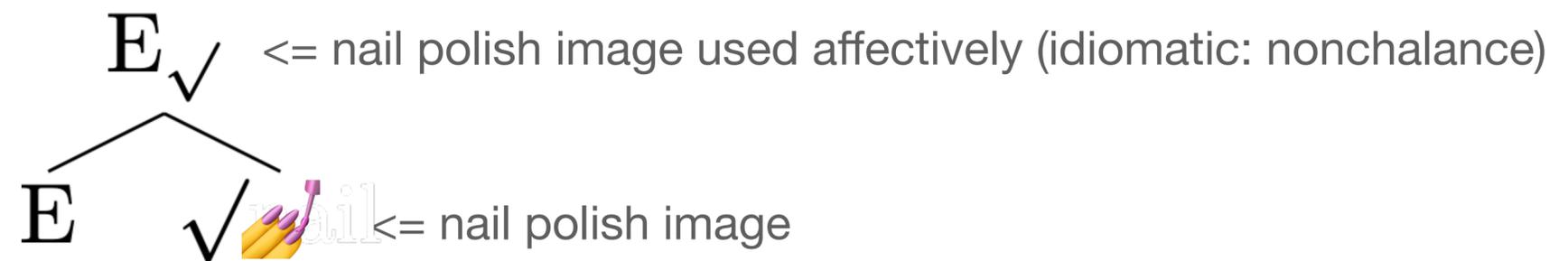
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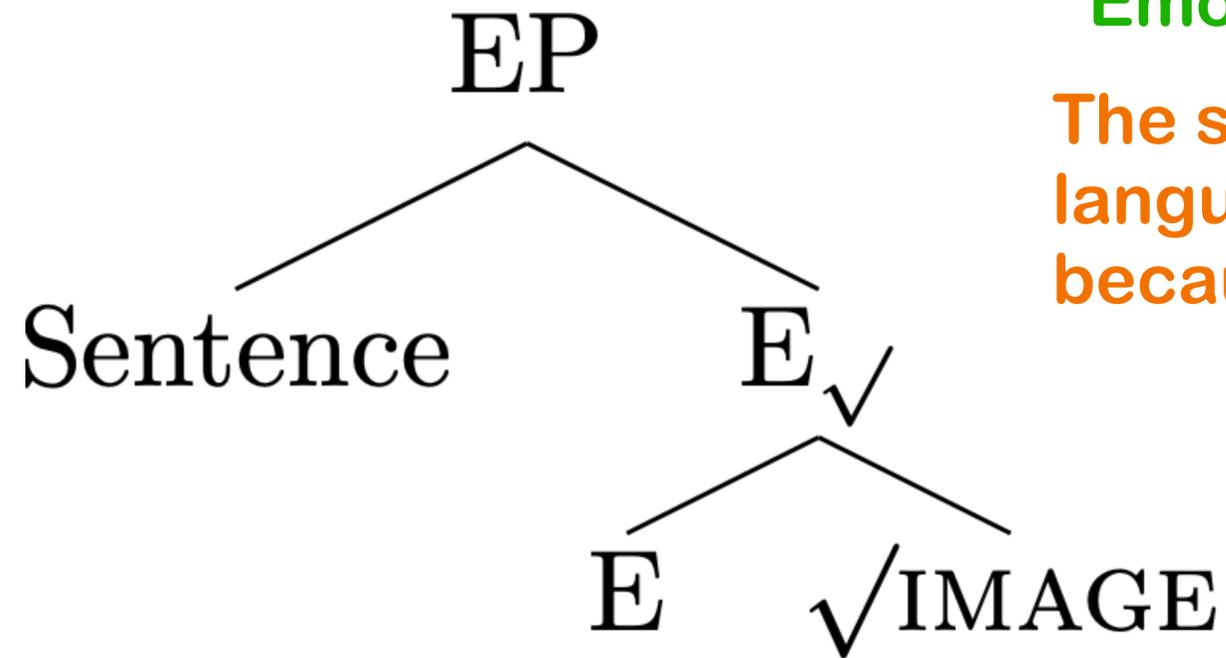
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# Prediction 1: Cross-language/culture/generation variation

Emojis are NOT a universal language!

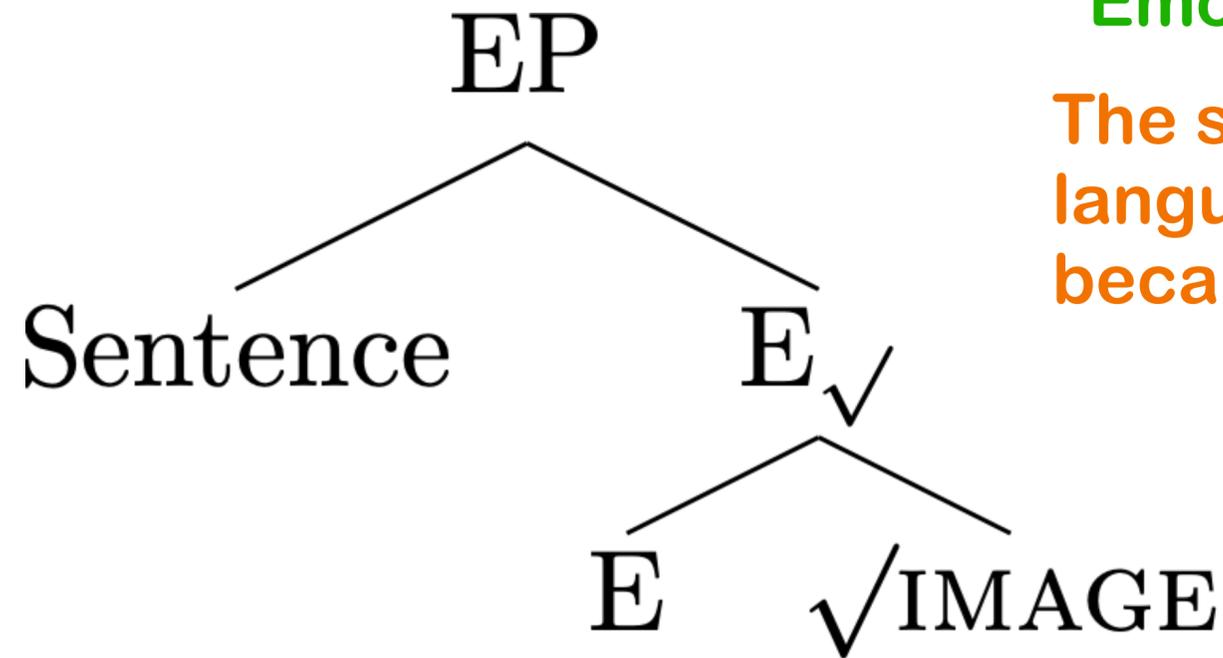
The same emoji may have different meanings in different languages/cultures or for people of different generations — because the emoji meaning is a matter of “lexicalization.”



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**Don't put on a happy face! Are you using the smiley emoji all wrong?**

The classic grinning emoji has once more changed its meaning - at least amongst gen Zers. So what is it communicating now - and what should you be using instead?

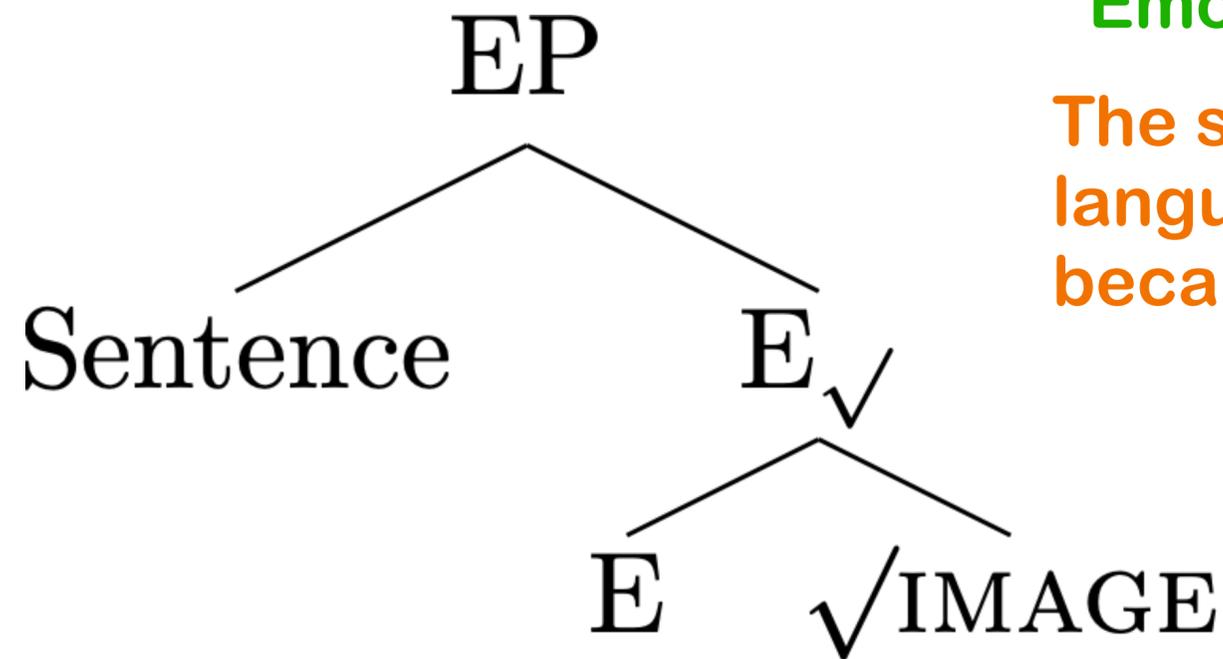
The Guardian



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The Guardian



## Some Chinese-specific affective emojis:



‘doomed’ (the Chinese word for ‘pill’ sounds like ‘doomed’)



‘pathetic, miserable’ (due to a trendy phrase ‘finally realizing I AM the clown [i.e., the joke is on me]’)



‘onlooker attitude’ (i.e., it is none of my biz; I am just rubbernecking, and I brought my own snack)



# The “doge” emojis (popular in China)



**TikTok**



**WeChat**



**Weibo**

The screenshot shows a Vice article header with the title "China's Beloved Doge Emojis Don't Mean What They Seem". Below the title is the text "Doge is serious business." and the author "By Viola Zhou". The URL is "https://www.vice.com/en/article/93y588/china-doge-emoji-dogecoin-memes". At the bottom of the screenshot, it says "April 21, 2021, 8:16pm" and includes social media share icons for Facebook, Twitter, and Snapchat.

*“Major social media platforms including WeChat, Weibo, and TikTok-like Douyin all have their own version of the doge. More often than not, the doge is used for **sarcasm**... These Chinese doge emojis are sometimes put at the end of a sentence to show **the commenter does not actually mean what they are saying**.” — vice.com*

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TikTok



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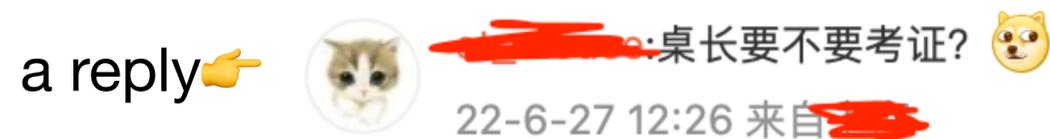
## Example:

1 Context: someone posted on Weibo that they had brought a lot of food to the quarantine hotel



a reply ➡️ “Why didn’t you bring an air fryer too? [sarcastic tone]”

2 Context: there’s a new policy in Shanghai where restaurants are encouraged to assign each table a “superintendent”



a reply ➡️ “Does one need to take an exam and get a certificate to become a table superintendent? [sarcastic tone]”



## China’s Beloved Doge Emojis Don’t Mean What They Seem

Doge is serious business.

By Viola Zhou

<https://www.vice.com/en/article/93y588/china-doge-emoji-dogecoin-memes>

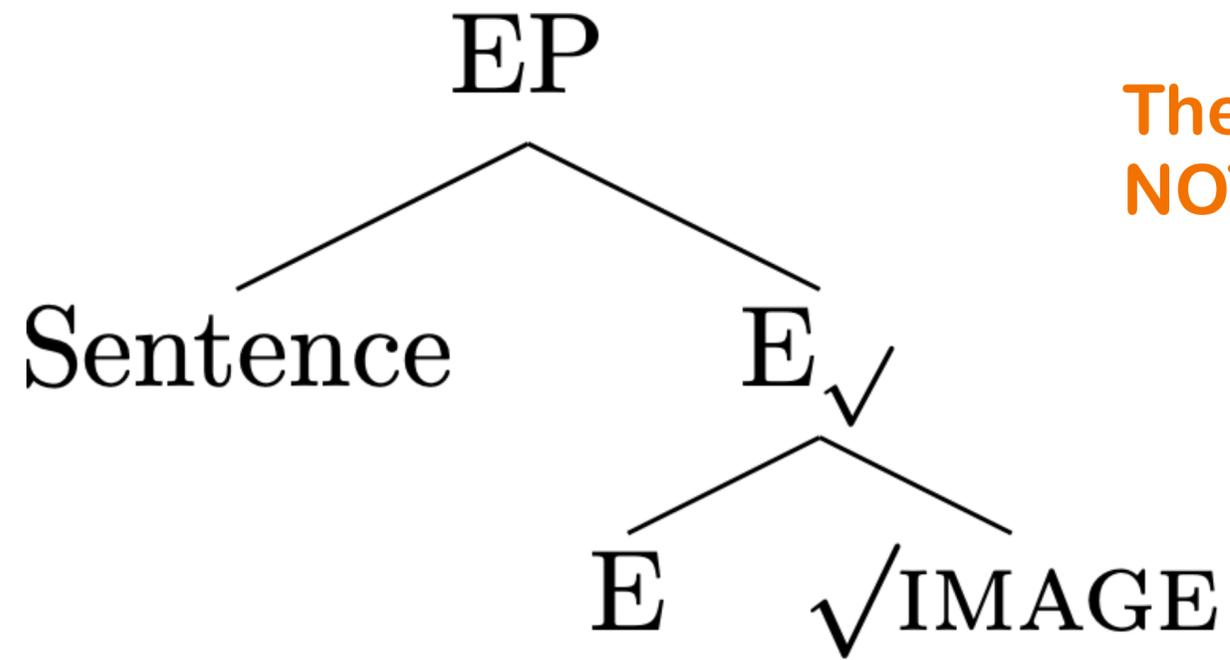
April 21, 2021, 8:16pm Share Tweet Snap

“Major social media platforms including WeChat, Weibo, and TikTok-like Douyin all have their own version of the doge. More often than not, the doge is used for **sarcasm**... These Chinese doge emojis are sometimes put at the end of a sentence to show **the commenter does not actually mean what they are saying**.” — vice.com



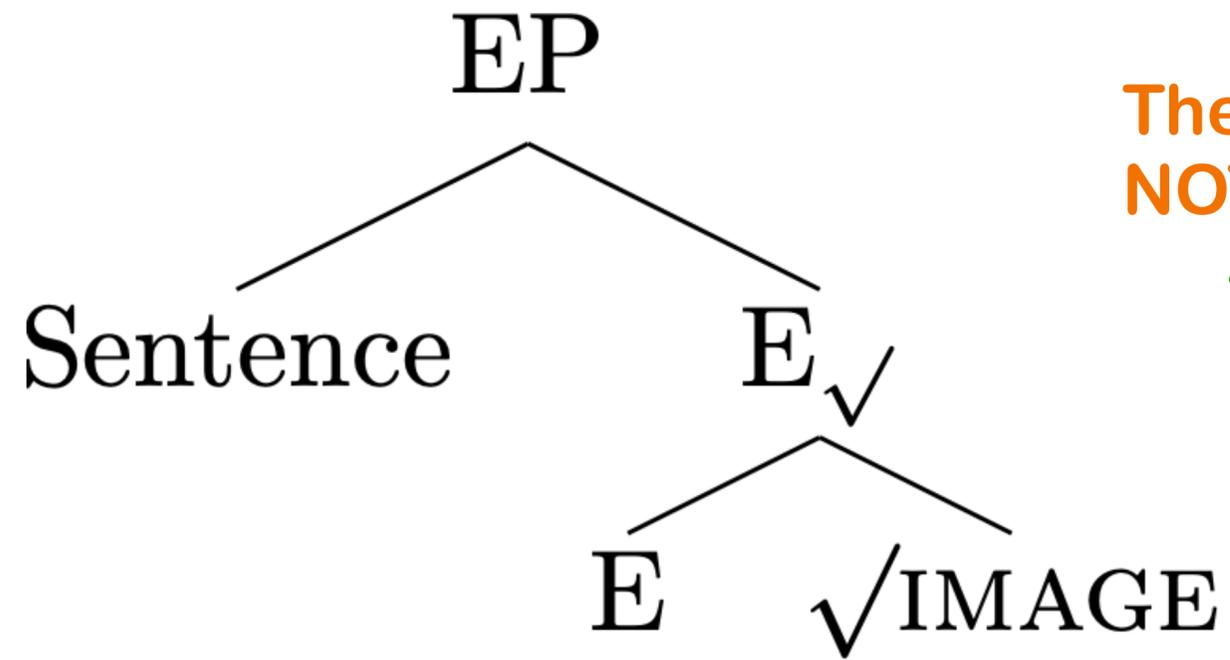
another reply ➡️ “We must also have toilet superintendents. [sarcastic tone]”

# Prediction 2: Affective emojis are peripheral



They could be either sentence-initial or sentence-final but NOT sentence-middle.

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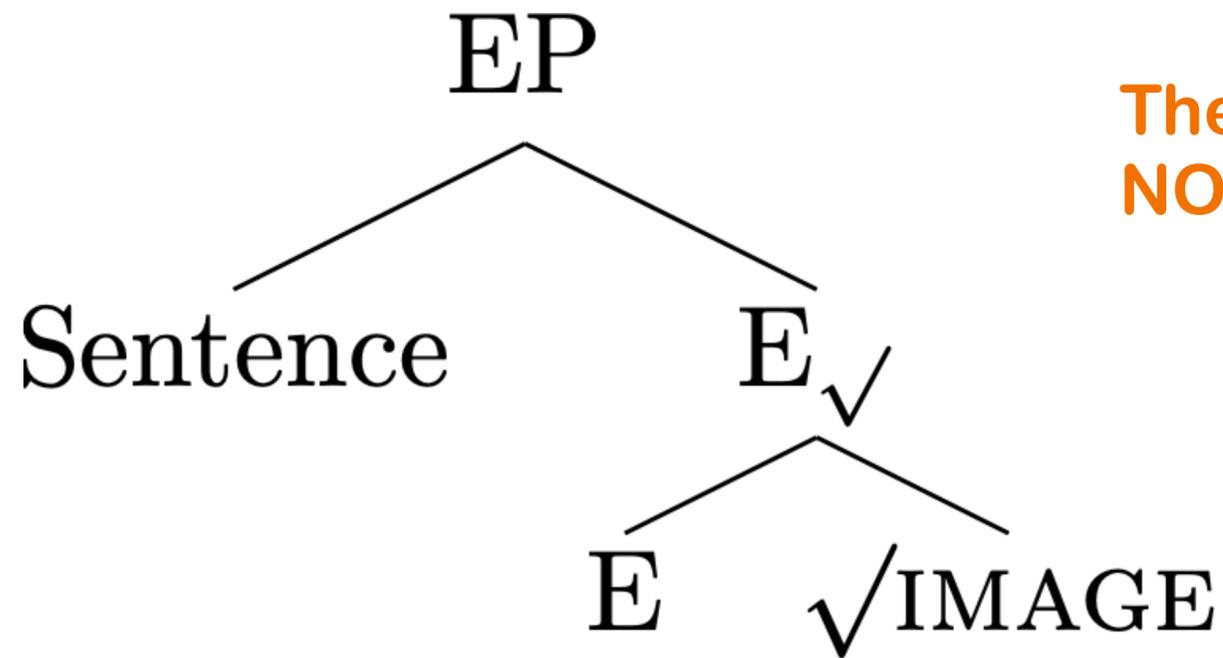


They could be either sentence-initial or sentence-final but NOT sentence-middle.

That they are predominantly sentence-final might be due to:

- content-before-emotion communicative habit (similar to the situation of affective punctuation marks)
- left-to-right typing

# Prediction 2: Affective emojis are peripheral



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- left-to-right typing

In languages with right-to-left writing systems, emojis appear on the left:

שלום, שמי ארי, אני מארגנטינה, עכשיו אני גר בתל אביב (ברמת אביב 📍) אני לומד עברית (וגם רוסית) באולפן, אני תלמיד טוב.

Translated from Hebrew by Google

Hello, my name is Ari, I'm from Argentina, now I live in Tel Aviv (Ramat Aviv 📍) I study Hebrew (and also Russian) in the studio, I am a good student.

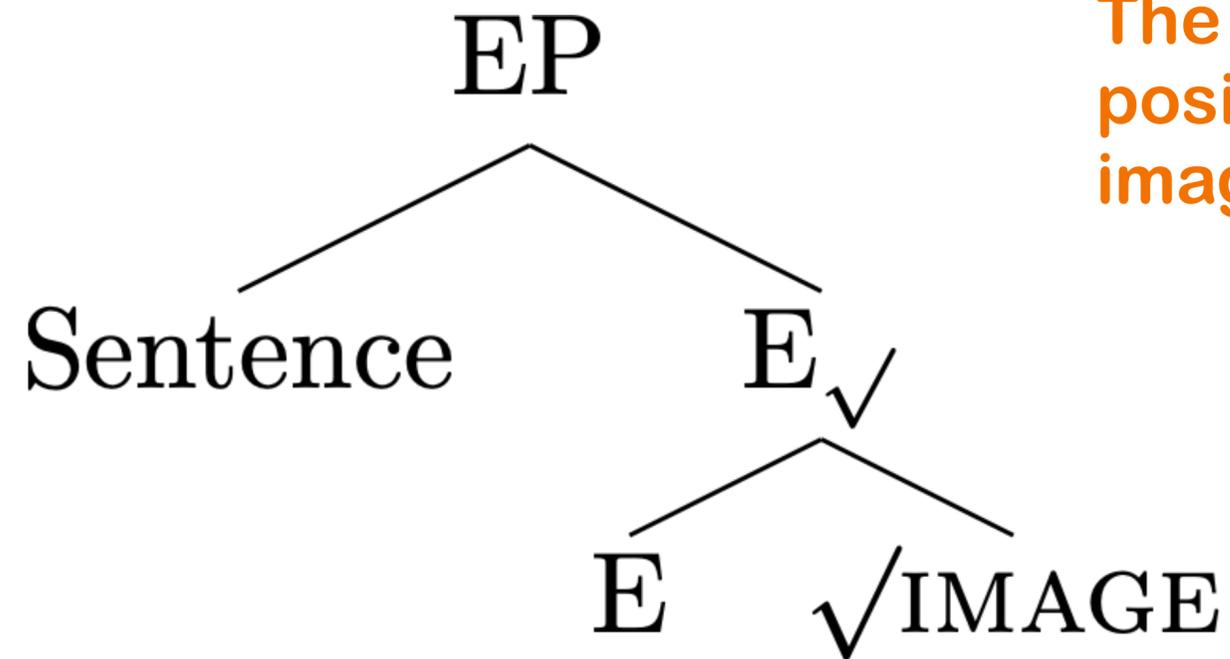
7:59 PM · Nov 30, 2020 · Twitter for Android

אוהב אתכם שבת שלום ומבורך 🇮🇱 😊 🙏

Translated from Hebrew by Google

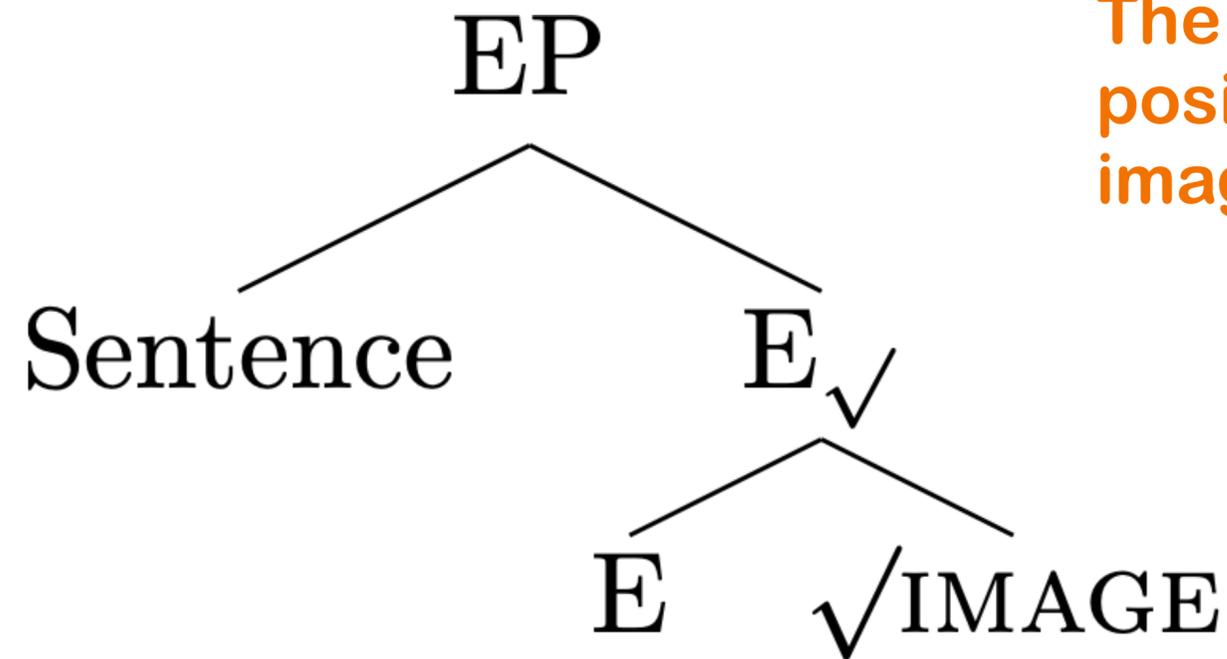
Love you ❤️ Shabbat Shalom VeMevorach 🙏 😊 🇮🇱

# Prediction 3: Further linearization options



The computer/phone screen is visual & 2D, so the positioning of the emoji (or other affectively recycled images) is quite free (depending on the image type).

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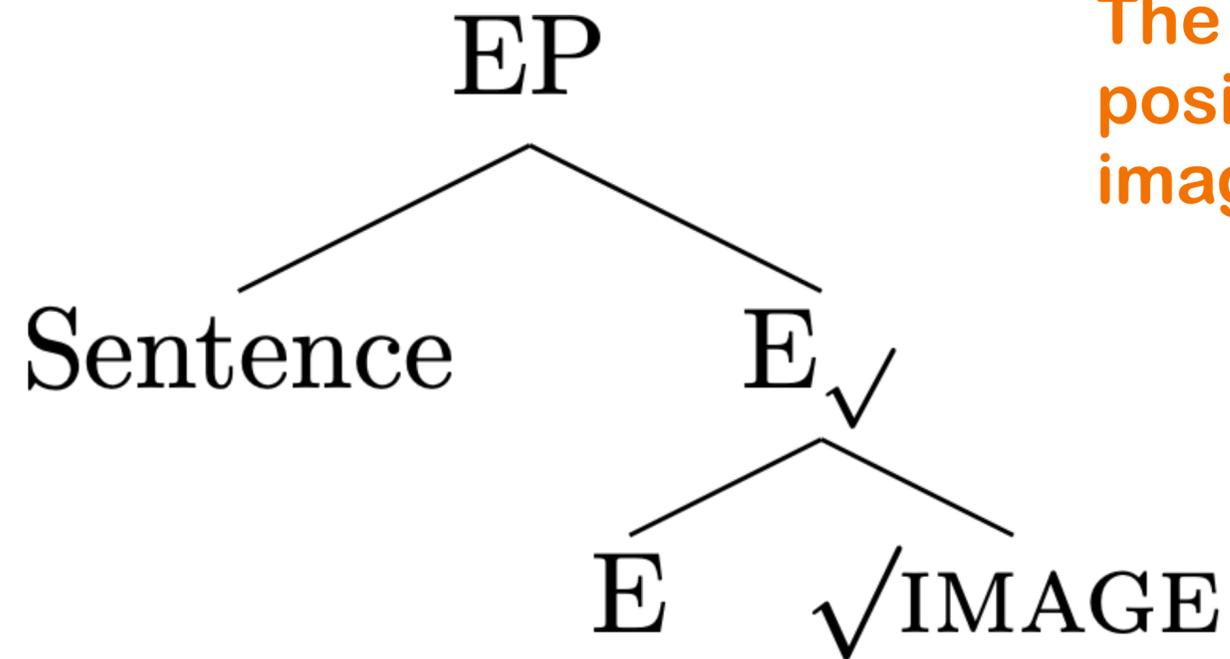
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is for me?



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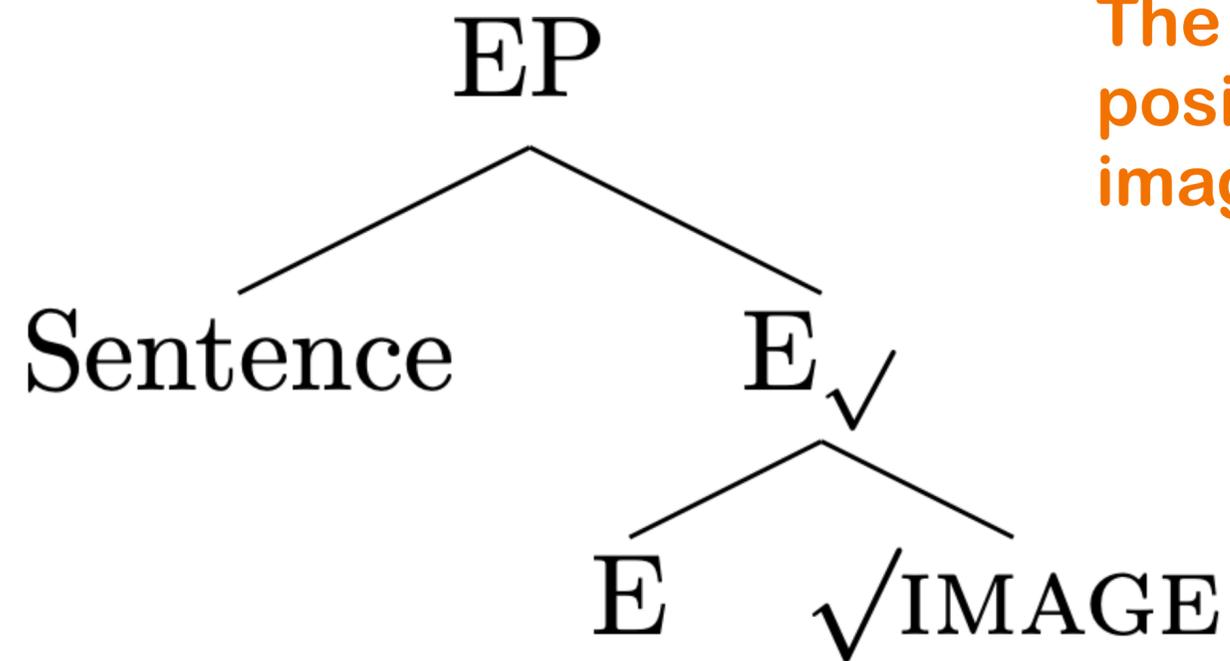


**is for me?**



The linearization may even be animated:

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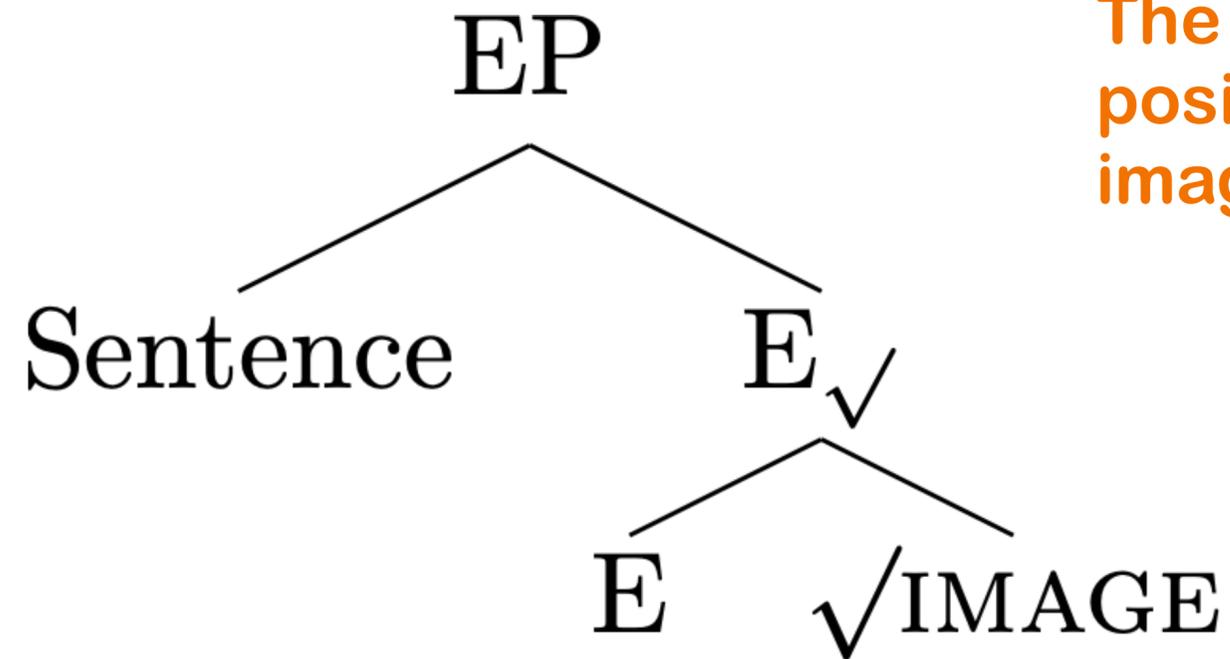
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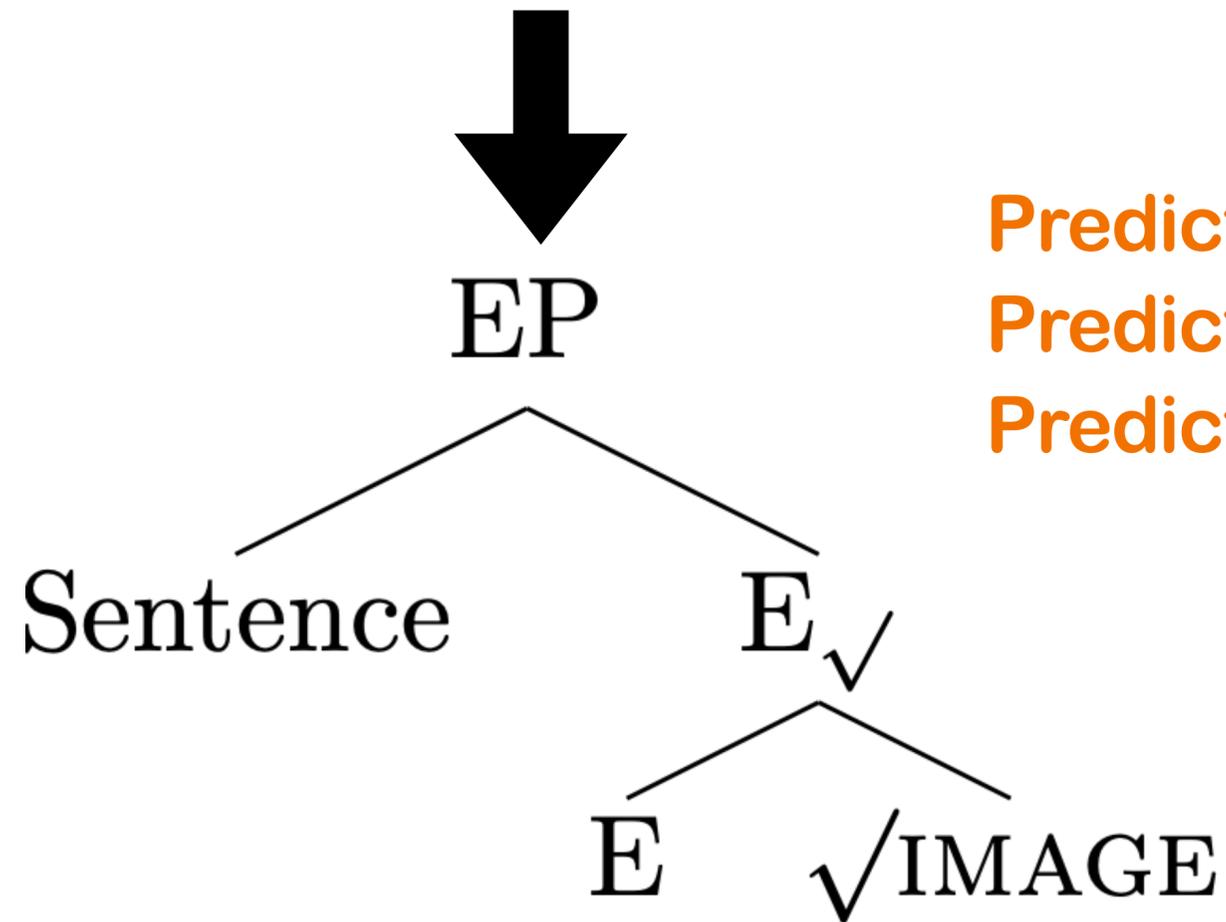
The linearization may even be animated:



Both the Sentence and the E part may be internally complex, but their complexities are separate.

# The “emotional wrapper” category E

[<sub>EP</sub> Sentence [<sub>E</sub> E √IMAGE ] ] (an updated version of Song 2019)



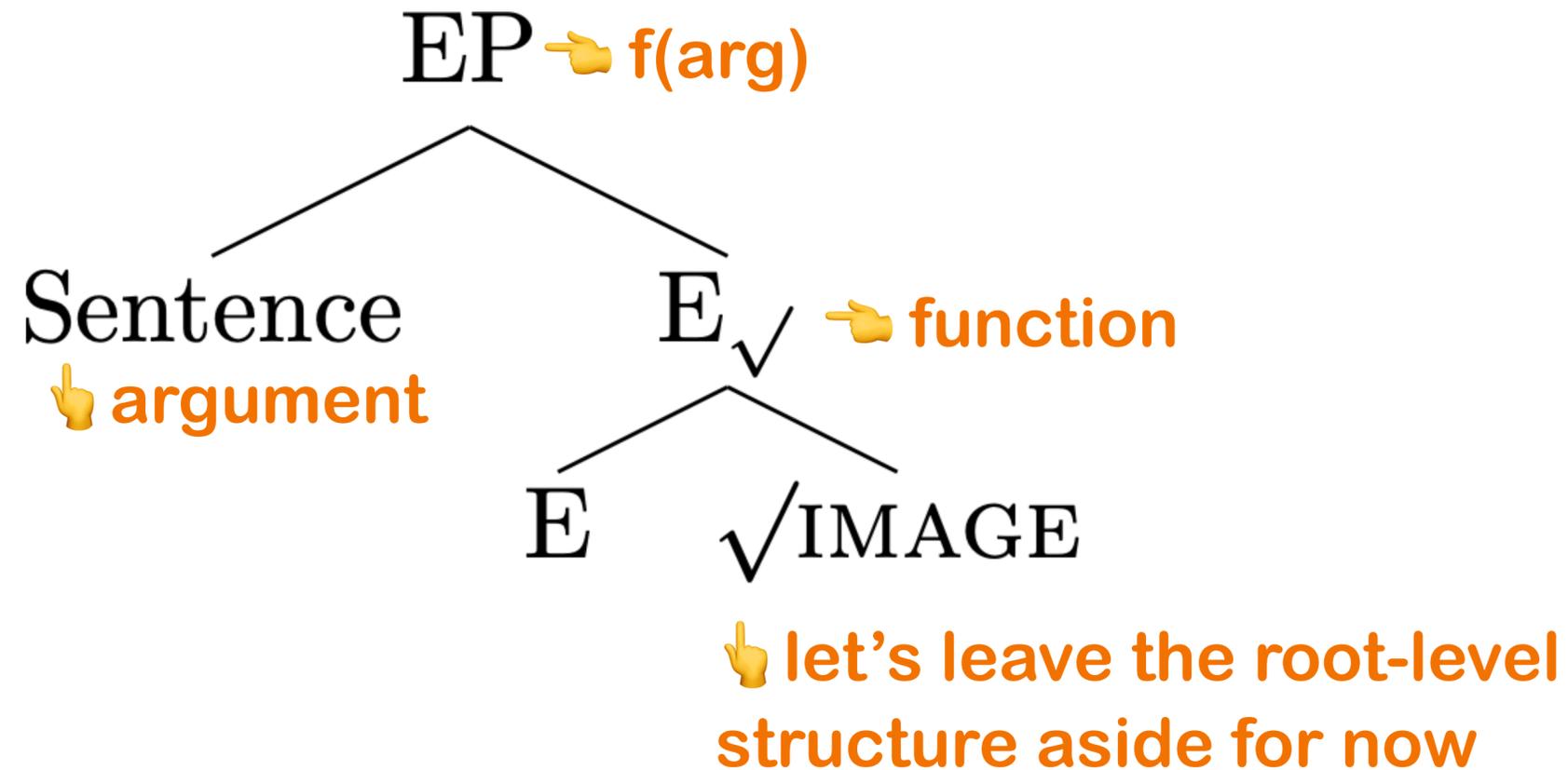
Prediction 1: Cross-language/culture/generation variation

Prediction 2: Affective emojis are peripheral

Prediction 3: Further linearization options

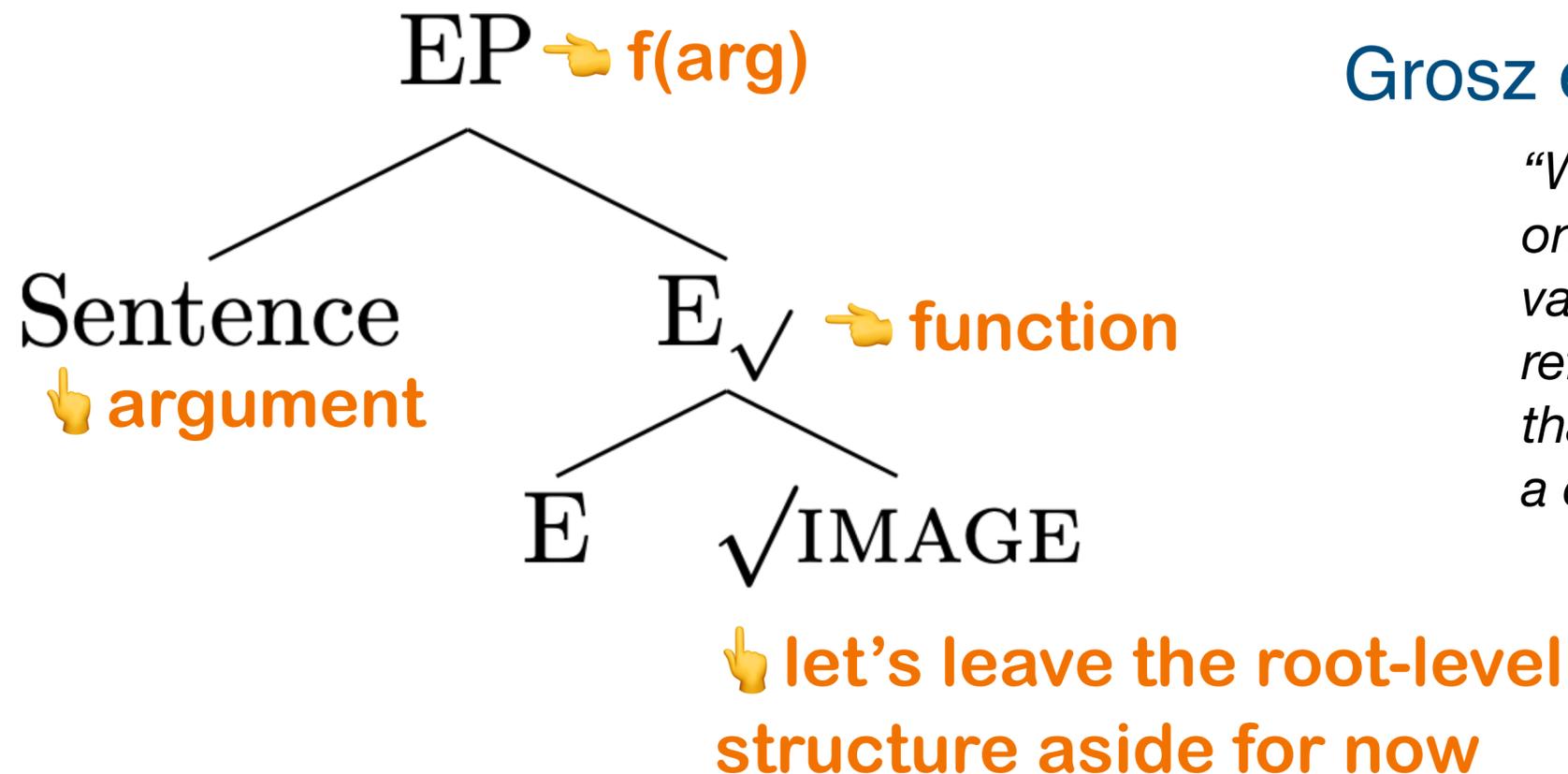
# Semantics

The EP structure can be given a straightforward semantics



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Grosz et al. (2021) have a proposal along this line.

*“We propose that emoji **comment on** a target **proposition**, but only do so in light of the way that proposition bears on a salient value, priority, or goal held by the author of the message. We refer to the author’s **salient value** (i.e. a possible state of affairs that the author desires, aspires to, wishes for, or hopes for) as a discourse value.” (Grosz et al. 2021:6)*

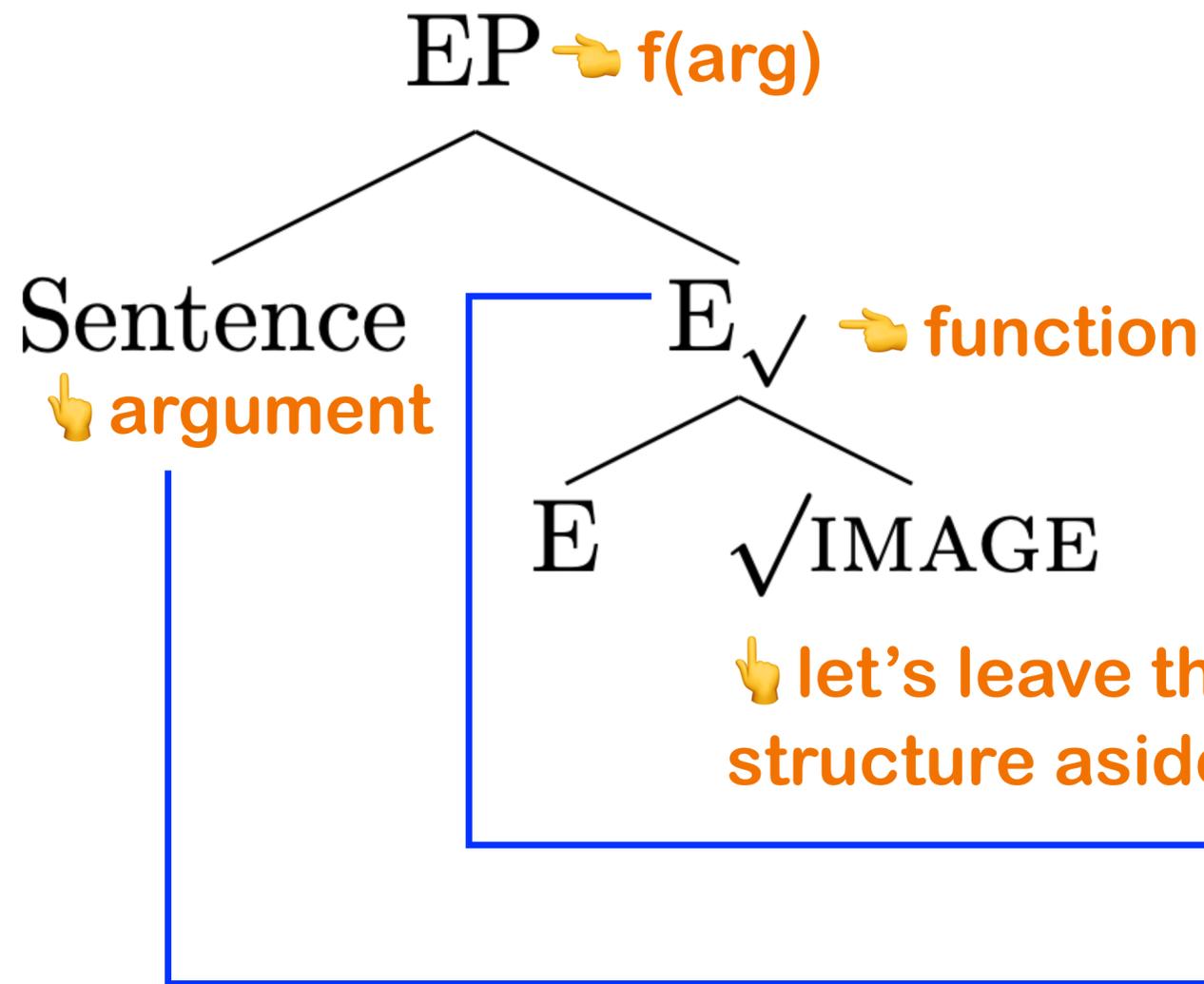
$\llbracket \text{😊} \rrbracket = \lambda x \lambda p \lambda v . \{w \mid \text{happy}(x, p, v) \text{ at } w\}$

$\llbracket \text{😞} \rrbracket = \lambda x \lambda p \lambda v . \{w \mid \text{unhappy}(x, p, v) \text{ at } w\}$

*x is (un)happy about how p bears on v at w*

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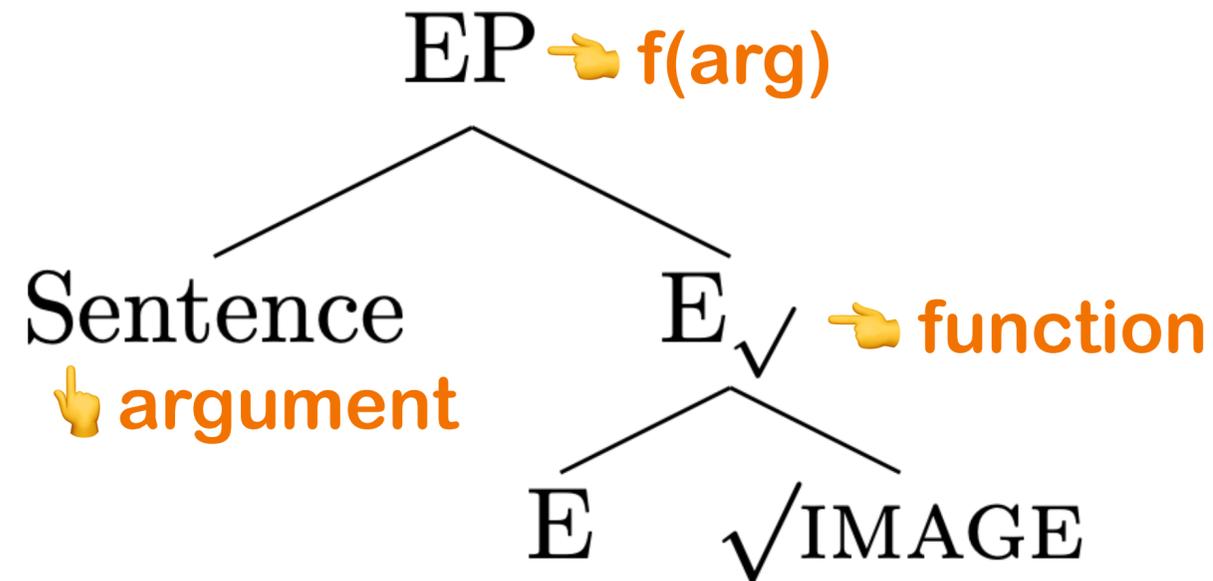
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$x$  is (un)happy about how  $p$  bears on  $v$  at  $w$

discourse

# Semantics

Grosz et al.'s proposal works but has limitations 🙌



🙌 let's leave the root-level structure aside for now

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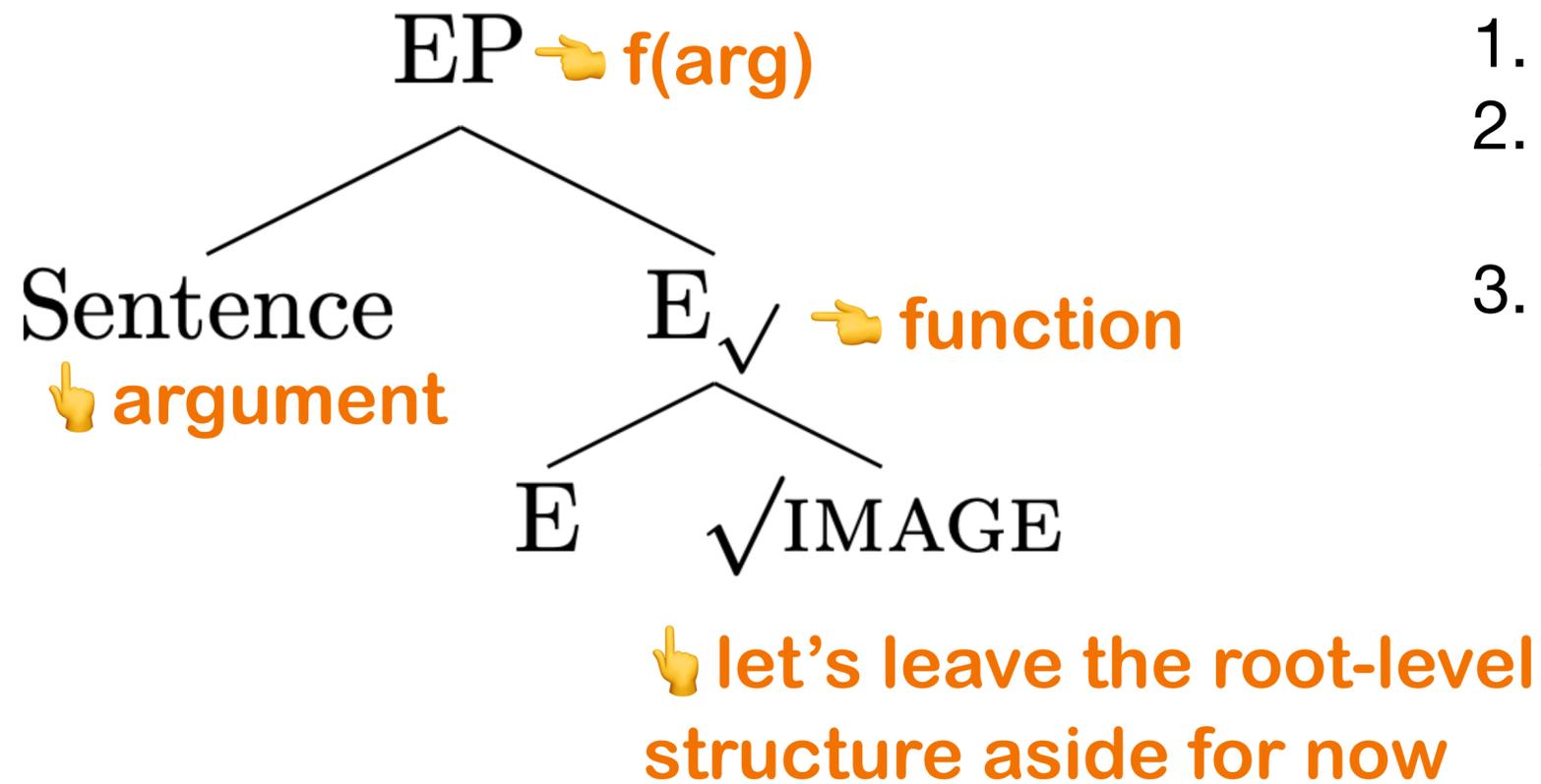
$[[\text{😞}]] = \lambda x \lambda p \lambda v . \{w \mid \text{unhappy}(x, p, v) \text{ at } w\}$

1. It limits the linguistic content to propositions.
2. It limits the affective contribution of the emoji to the positive-negative scale.
3. It limits the interaction of the emoji and the linguistic content to be “commenting on.”

*This approach essentially picks out a set of possible worlds  $\{w\}$  where the speaker/author holds a certain positive/negative attitude toward the contribution of a proposition to their own expectation.*

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These limitations are undesirable because:

- Emojis can accompany various sentence types.
- Many emojis convey emotions beyond the simple positive/negative scale.
- Affective emojis do not necessarily “comment on” the linguistic content.

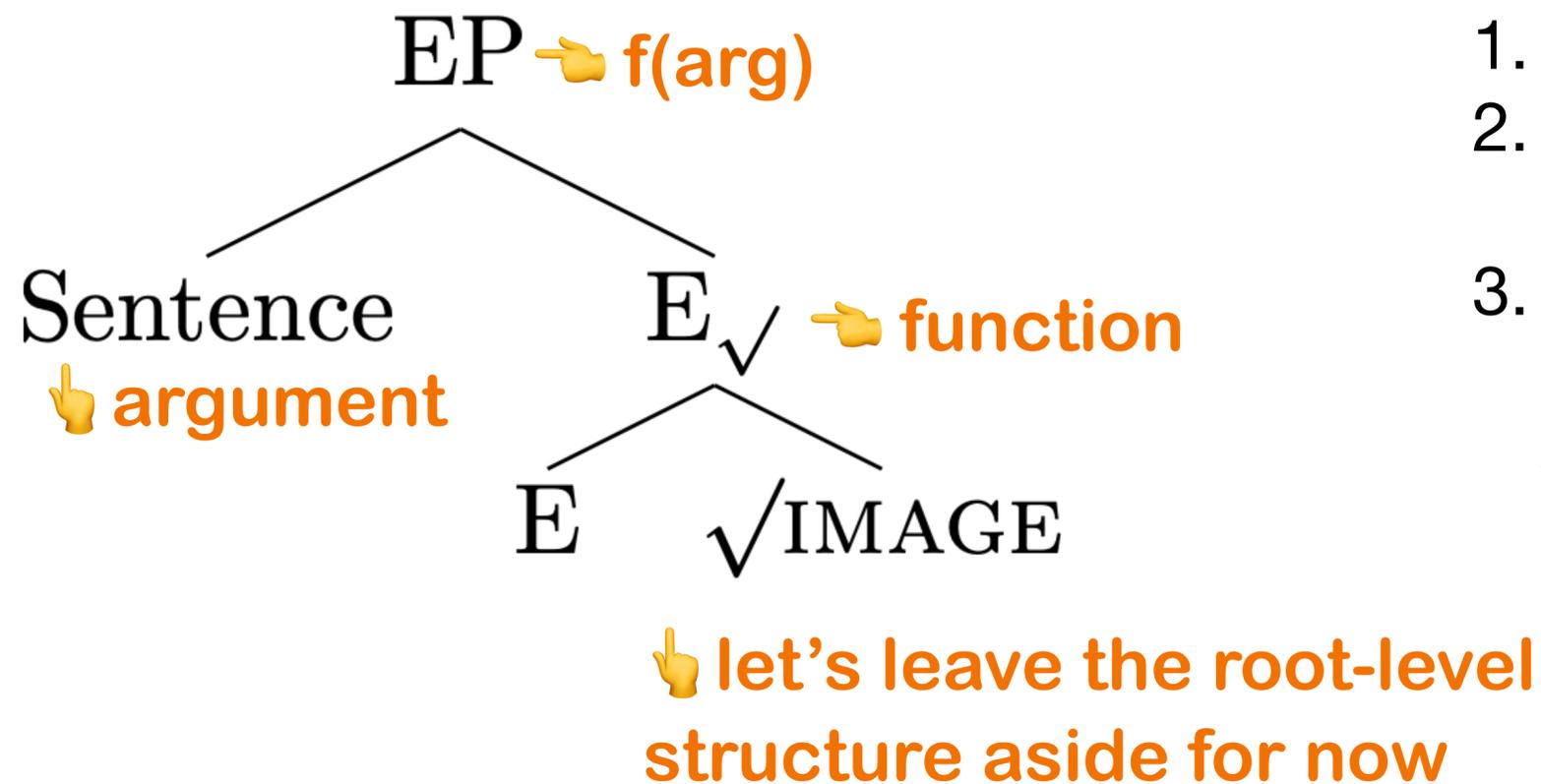
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**Example: (a/c are translated from Mandarin)**

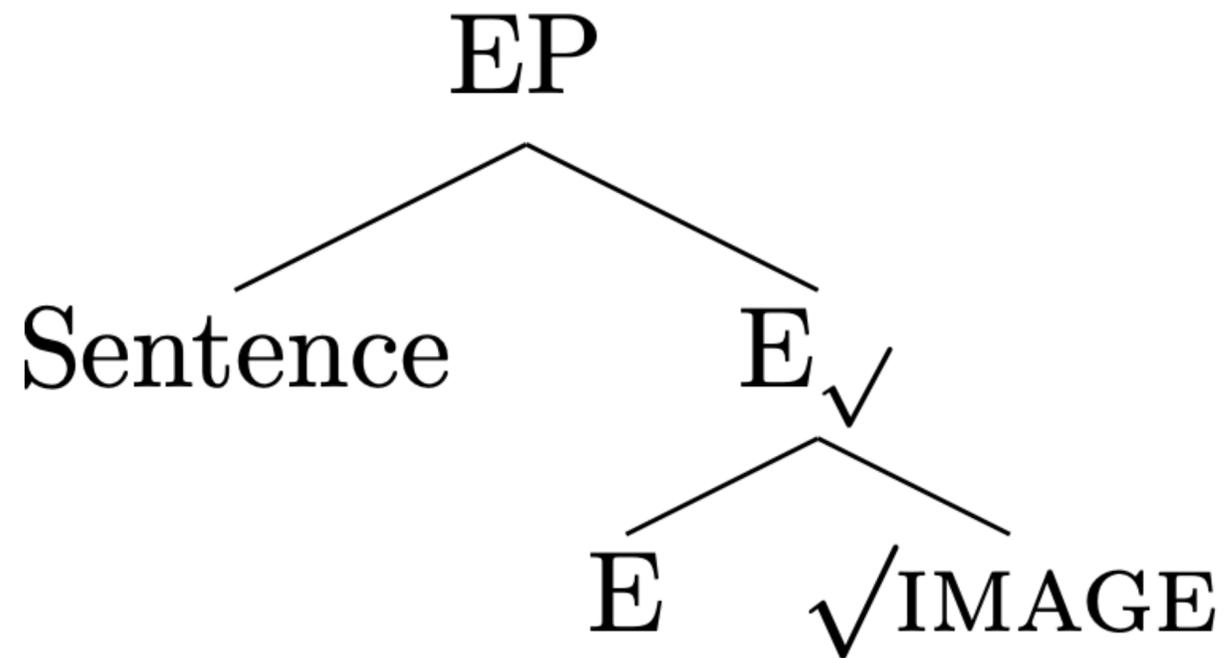
(15) a. How can I apply? 🤔

b. Sorry to say, but that's the fact. 🙅

c. Just found out that Wahaha had changed their endorser from Leehom Wang to Greg Han. 🤔 🐱

# Semantics

## An alternative proposal



### Desirable semantics of EP 📌

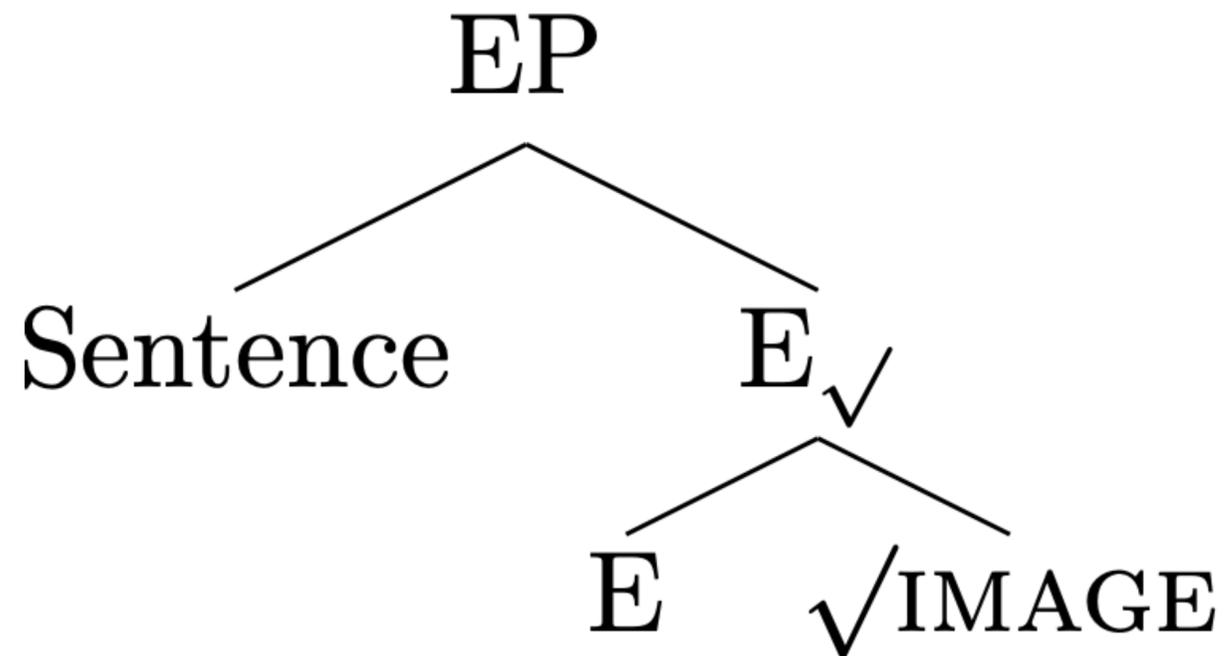
$[[EP]] = \langle [[Sentence]], emotion \rangle$

### Recap:

1. Affective emojis encode miscellaneous **tones** (not limited to the positive/negative scale).
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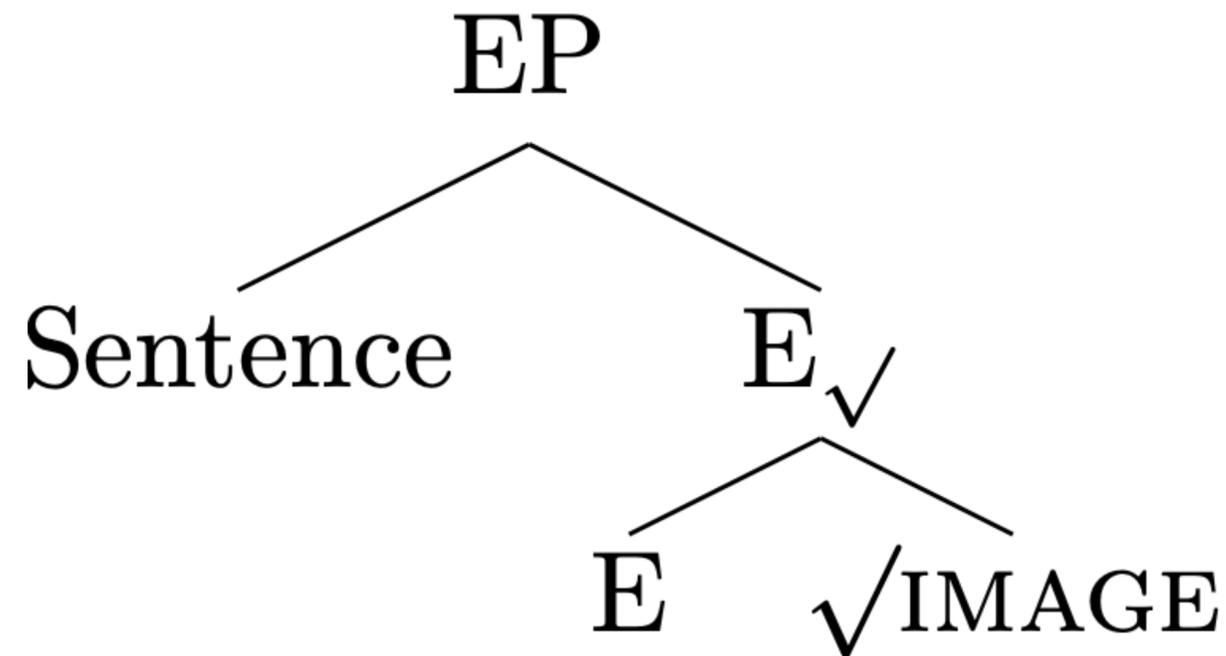
Essentially, what we want is a separation of “at-issue” and “non-at-issue” stuff, to borrow Potts’s (2005 et seq.) terminology.

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Monadic composition gives us exactly this type of semantic value.

# Some background

## Modes of composition

1. Function application => most often used  
input:  $f, x$ ; output:  $f(x)$
2. Conjunction => used for “predicate modification” and event semantics  
input:  $f, g$ ; output:  $f\&g$
3. Monadic binding => used for “nonpure” computations with “side effects”  
input:  $f^*, x^*$ ; output:  $f(x)^{**}$  [I use the superscript  $*$  to indicate side effect]  
pure computation:  $f(x)$ ; nonpure/side effects:  $**$

1 and 2 are already available in Heim & Kratzer (1998)

3 originates in mathematical category theory and functional programming but has been introduced to linguists too (Shan 2002; Asudeh & Giorgolo 2020; Song 2021, 2022)

# “At-issue” vs. “non-at-issue”

## Case 1: conventional implicature (Asudeh & Giorgolo 2020)

### Example:

(16) a. Donald is a **Yank**.

b. This **cur** bit me. (Asudeh & Giorgolo 2020:13)

**Words like “Yank” and “cur” carry speaker attitudes besides their basic meanings. A&G view these as conventional, non-truth-conditional.**

[[Yank]] = ⟨American, {negative speaker attitude}⟩

[[cur]] = ⟨dog, {negative speaker attitude}⟩

# “At-issue” vs. “non-at-issue”

## Case 2: semantics for root syntax (Song 2021, 2022)

The core idea of root syntax is separating formal-computational and idiosyncratic-encyclopedic information. Monadic composition does exactly that in semantics.

**Example: (a => content words, b/c => semigrammatical words)**

(17) a. dog := [<sub>N</sub> *n* √DOG], walk := [<sub>V</sub> *v* √WALK]

b. *yī wèi/míng lǎoshī* ‘one CL<sub>respectful/official</sub> teacher’ [Mandarin classifiers]

c. *không*<sub>default</sub>/*chẳng*<sub>emphatic</sub>/*đéo*<sub>vulgar</sub>/... [Vietnamese negation particles]

$[[\text{dog}]] = \langle [[n]], \{n \text{ is supported by } \sqrt{\text{DOG}}\} \rangle$

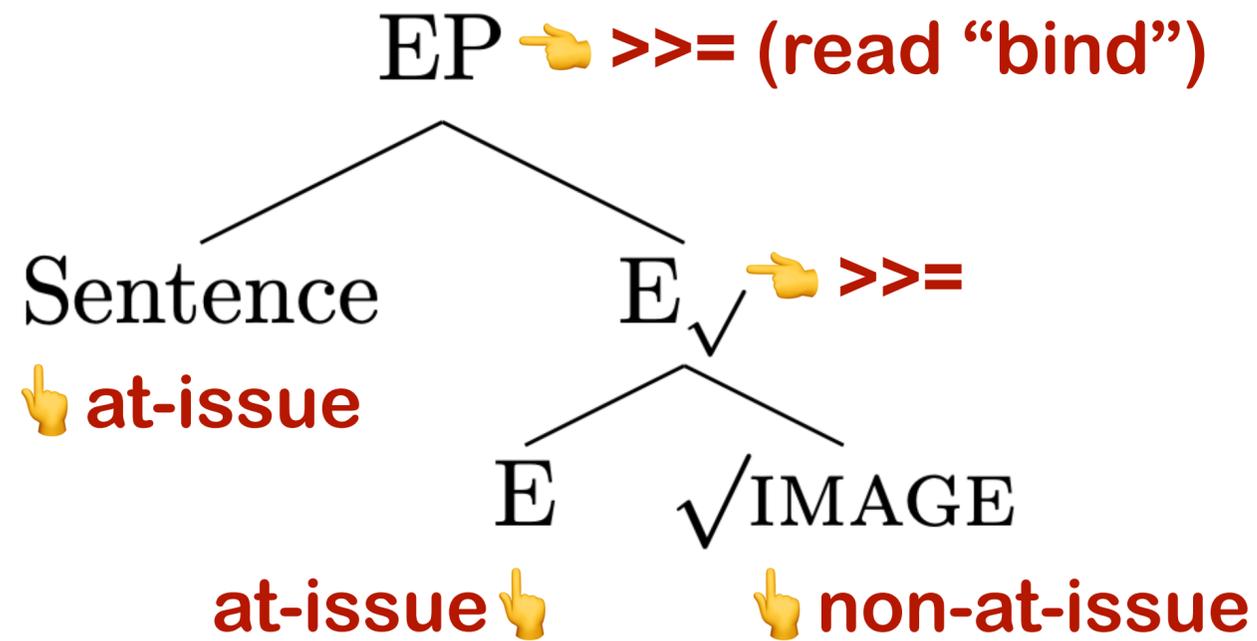
$[[\text{wèi}]] = \langle [[\text{Cl}]], \{\text{Cl is supported by } \sqrt{\text{WÈI}}\} \rangle$

$[[\text{đéo}]] = \langle [[\text{Neg}]], \{\text{Neg is supported by } \sqrt{\text{ĐÉO}}\} \rangle$

# Semantics

Monad is a concept from mathematical category theory.  
The writer monad is from functional programming.

## Emotional wrapping via the writer monad



$$\llbracket EP \rrbracket = \dots = \langle \llbracket [E \text{ Sentence}] \rrbracket, \text{emotion} \rangle$$



$$\dots = \text{write}(\llbracket E \sqrt{\phantom{x}} \rrbracket) \gg \lambda y. \eta(\llbracket \text{Sentence} \rrbracket)$$

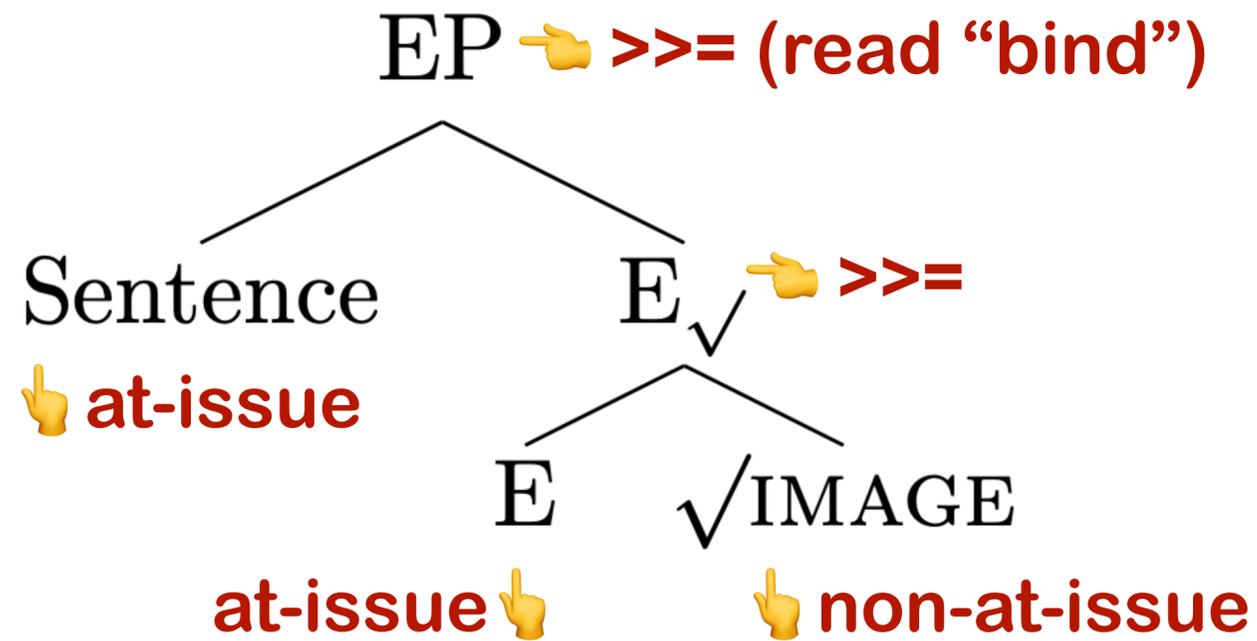
Abstracting away from technical details, the monadic composition template is

$$\text{write}(\text{"non-at-issue"}) \gg \lambda y. \eta(\text{"at-issue"})$$

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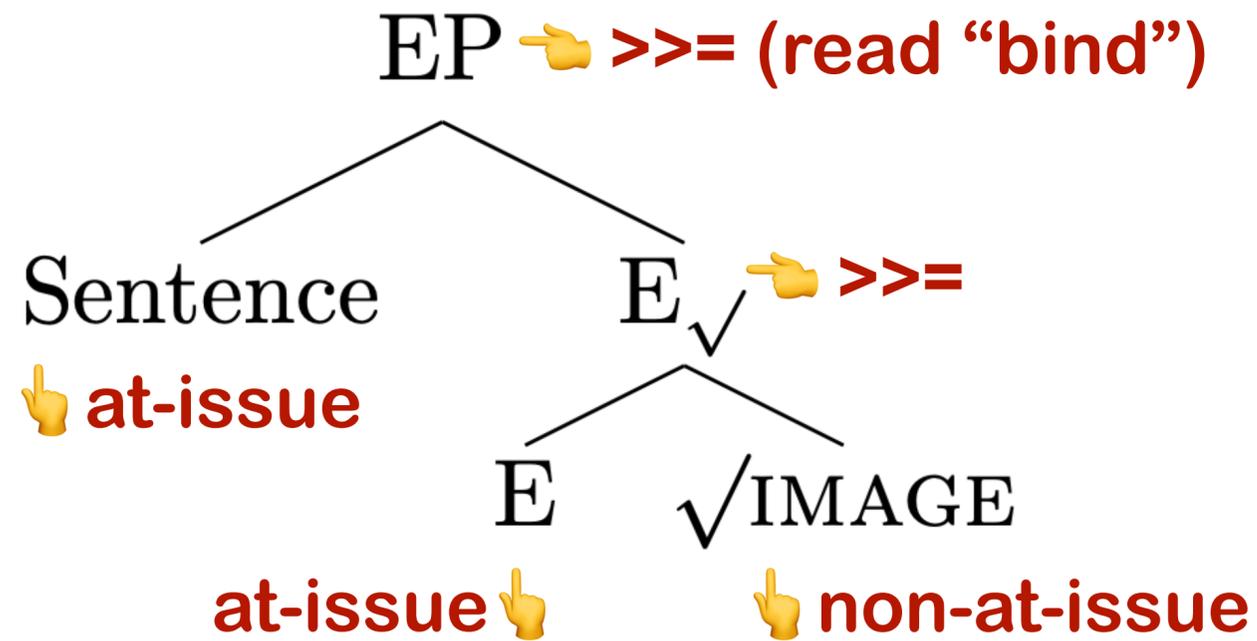
This is compatible with a root-syntactic approach to emojis.

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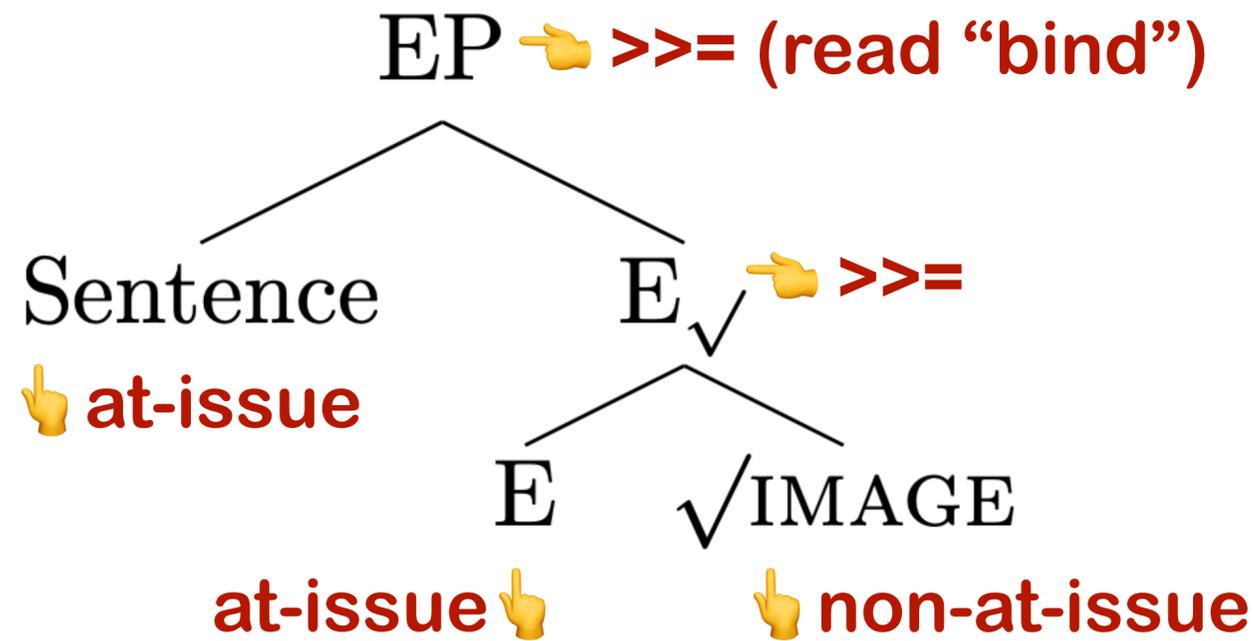
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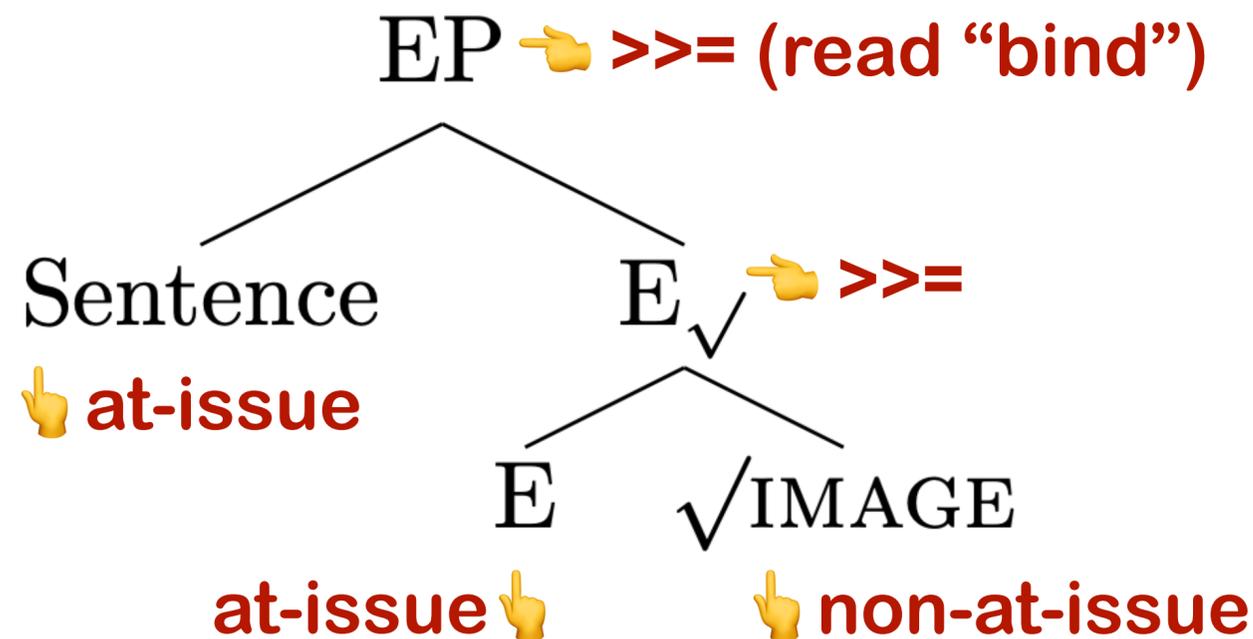
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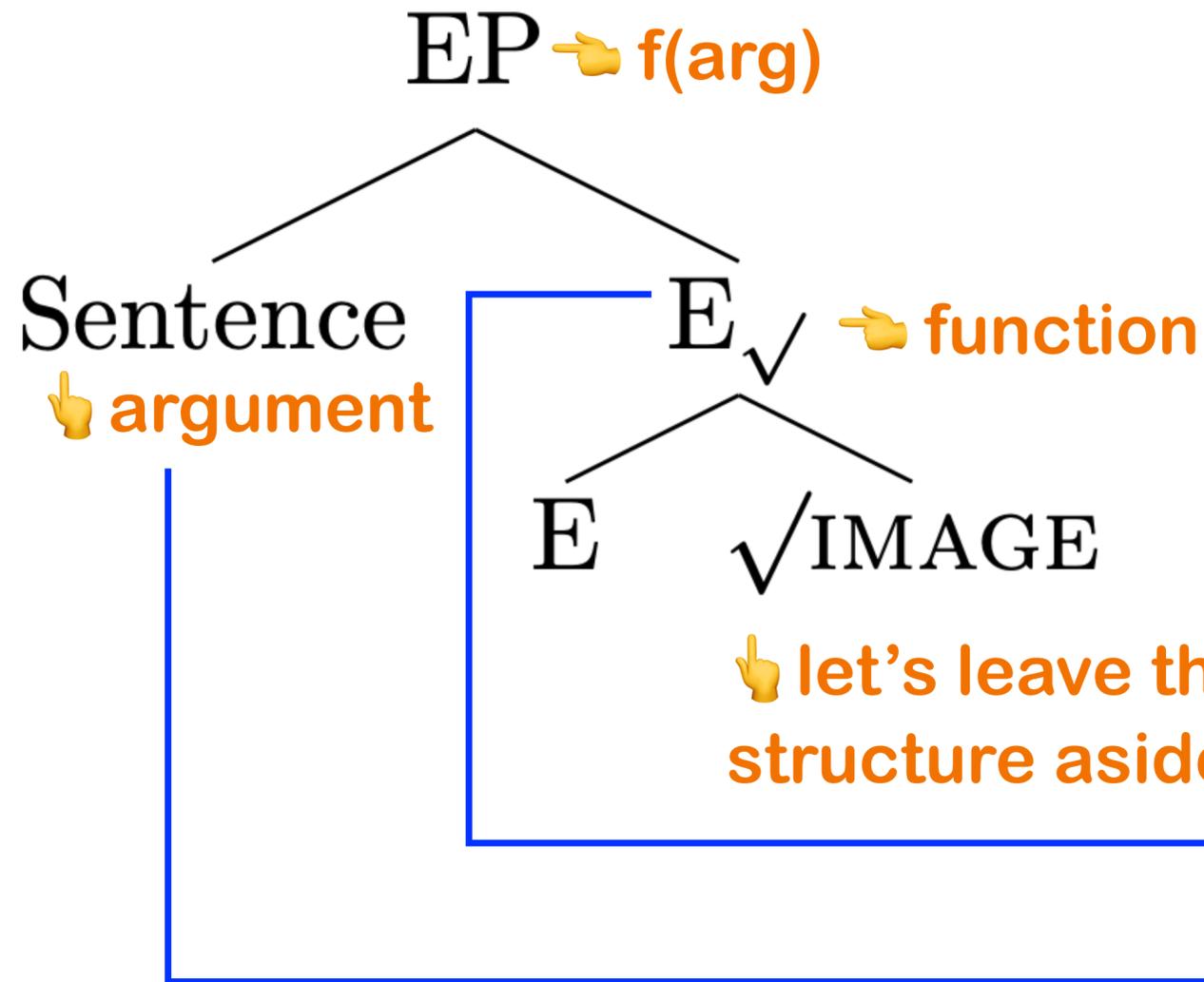
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The remaining task is to figure out how the two "at-issue" parts compose. Let's adapt Grosz et al.'s (2021) proposal!

# Semantics (repeated)

The EP structure can be given a straightforward semantics



Grosz et al. (2021) have a proposal along this line.

*“We propose that emoji **comment on** a target **proposition**, but only do so in light of the way that proposition bears on a salient value, priority, or goal held by the author of the message. We refer to the author’s **salient value** (i.e. a possible state of affairs that the author desires, aspires to, wishes for, or hopes for) as a discourse value.” (Grosz et al. 2021:6)*

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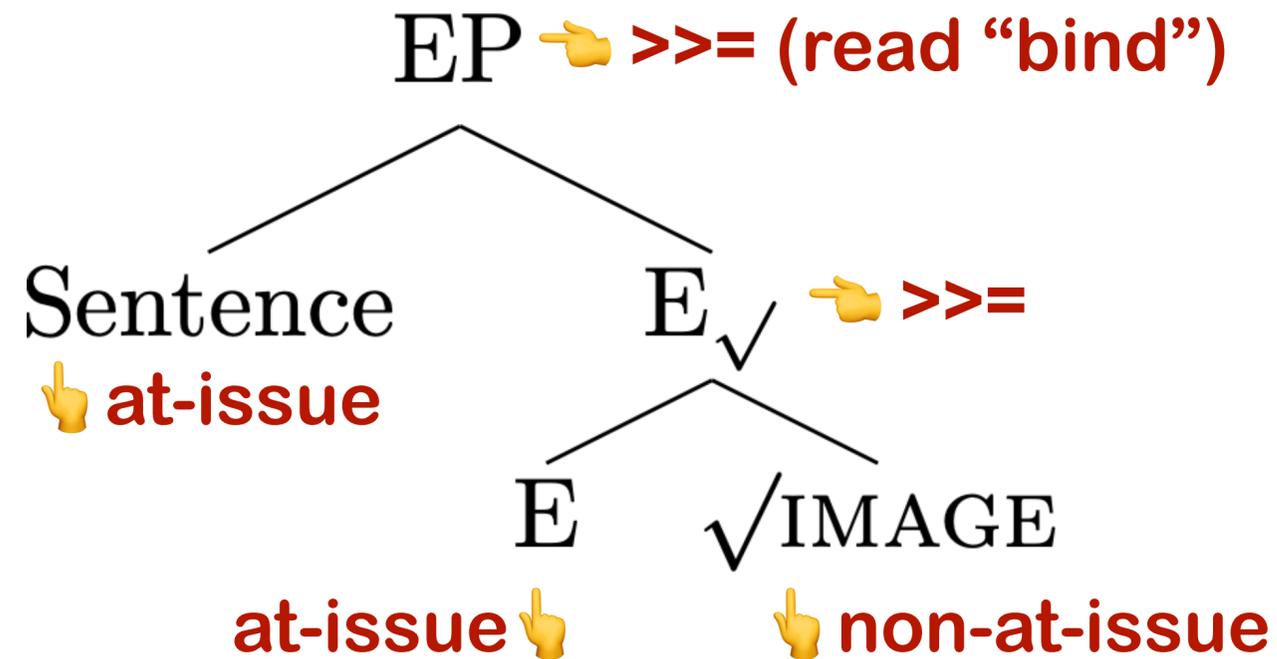
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*x is (un)happy about how p bears on v at w*

discourse

# Semantics

## The functional “skeleton” of emotional wrapping



Grosz et al.’s (2021) proposal adapted:

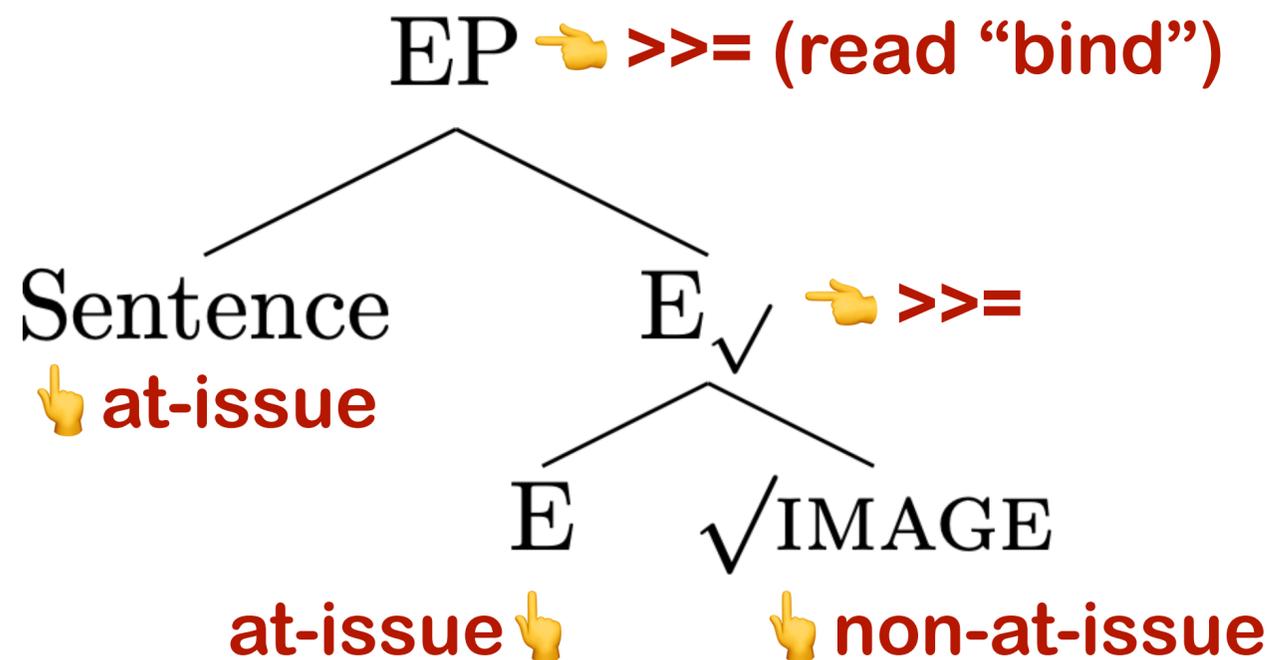
*An affective emoji adds a particular tone to a target linguistic utterance (or utterance group).*

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🙌  
*x affectively performs the speech act of u at w*

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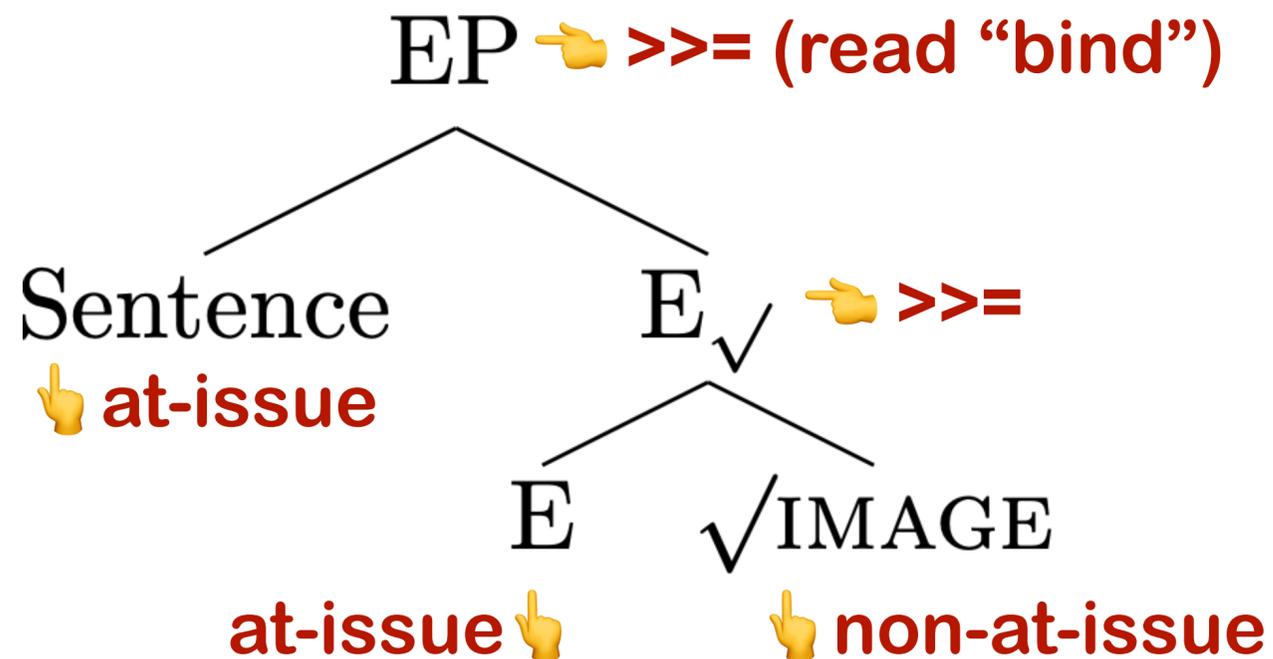
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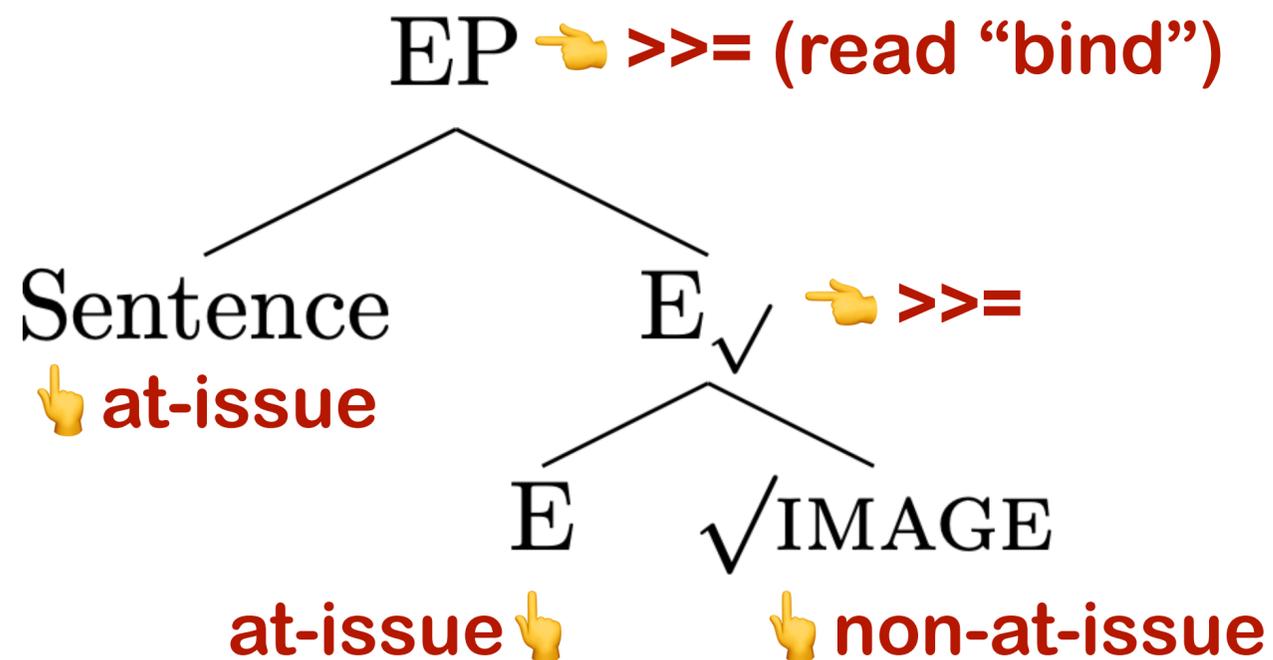
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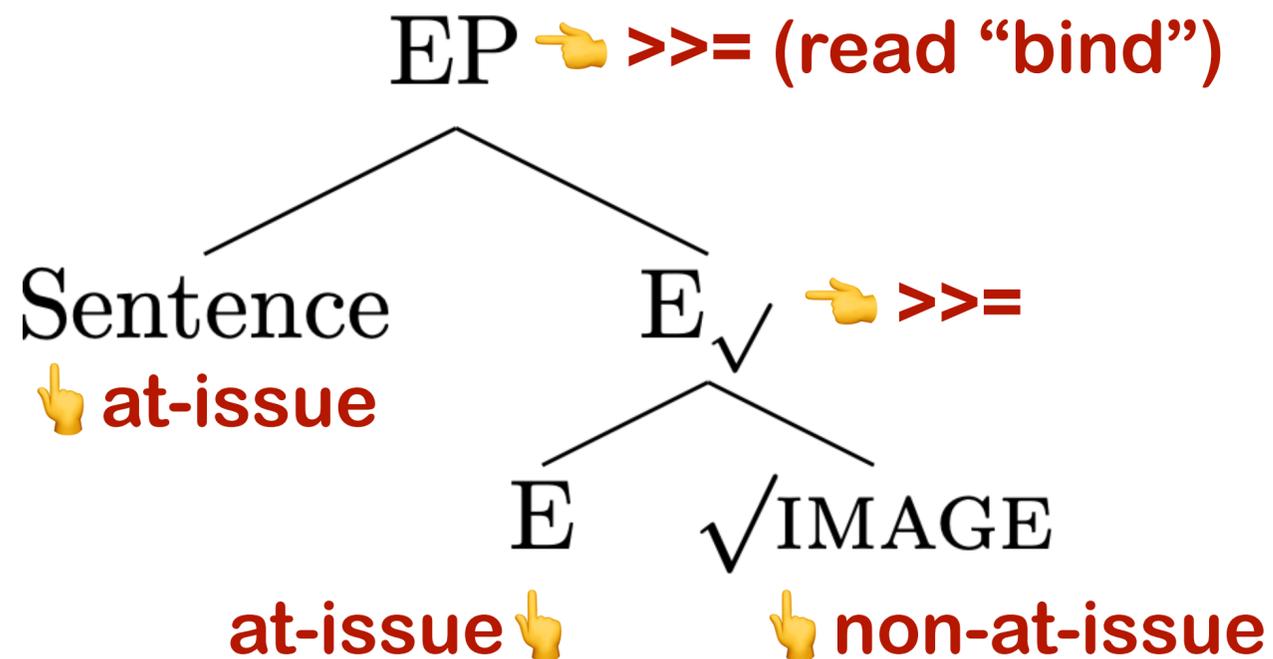
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# Semantics

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The Sentence part is in fact not entirely at-issue (as it contains roots too), but here we abstract away from that routine detail.

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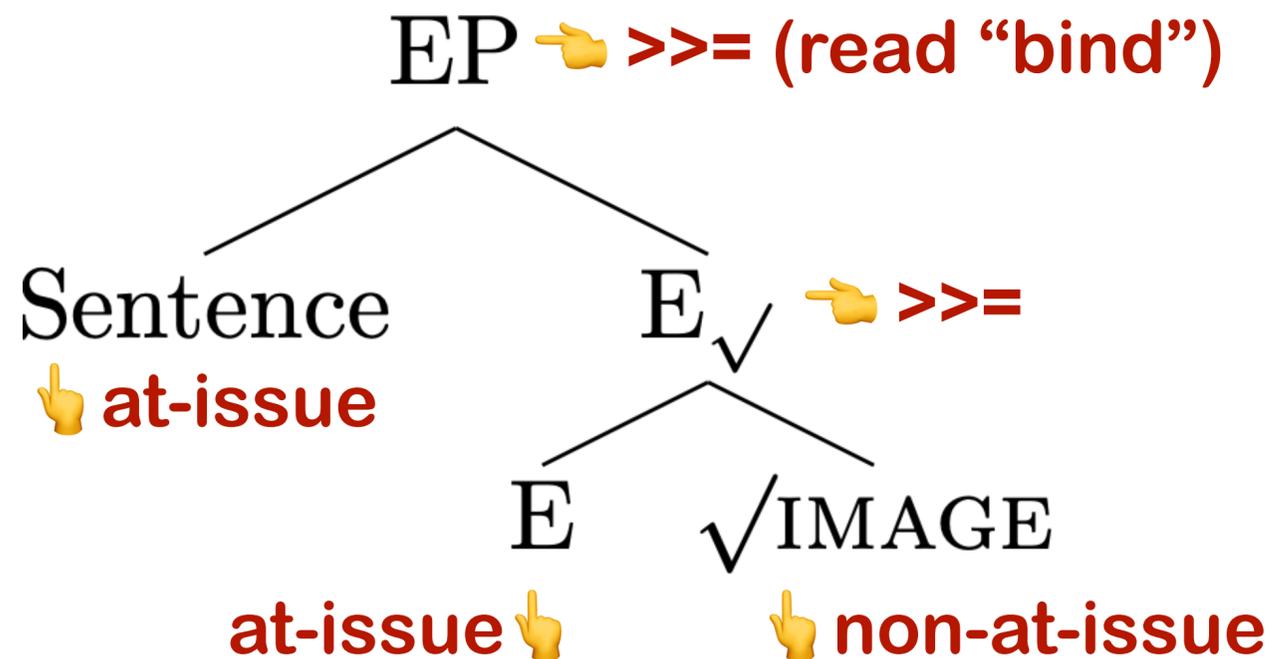
*x affectively performs the speech act of u at w*

The abstract category E merely adds the affective wrapper. The concrete affect comes from the supporting image “root.”

$$[[E_{\sqrt{}}]] = [[[E \ E \ \sqrt{IMAGE}]]] = \dots = \langle [[E]], \{E \text{ is supported by } \sqrt{IMAGE}\} \rangle$$

# Semantics

## The functional “skeleton” of emotional wrapping



The Sentence part is in fact not entirely at-issue (as it contains roots too), but here we abstract away from that routine detail.

Grosz et al.’s (2021) proposal adapted:

*An affective emoji adds a particular tone to a target linguistic utterance (or utterance group).*

$$[[E]] = \lambda x \lambda u . \{w \mid \text{AFFECT}(x, u) \text{ at } w\}$$

🖐️  
*x affectively performs the speech act of u at w*

The abstract category E merely adds the affective wrapper. The concrete affect comes from the supporting image “root.”

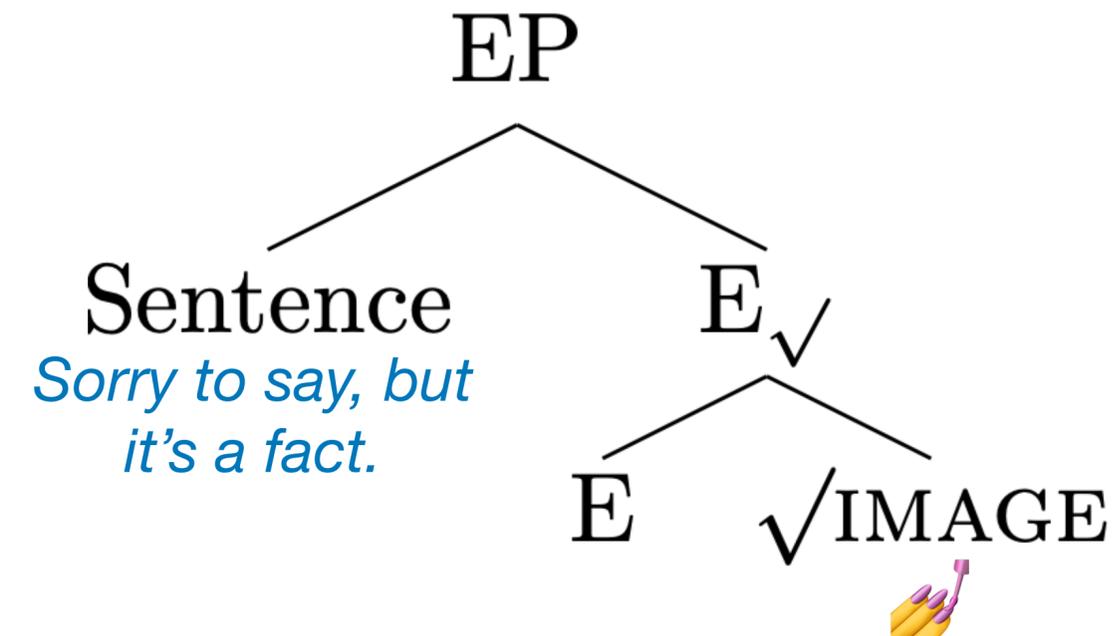
$$[[E_{\sqrt{}}]] = [[[E \ E \ \sqrt{\text{IMAGE}}]]] = \dots = \langle [[E]], \{E \text{ is supported by } \sqrt{\text{IMAGE}}\} \rangle$$

If we do root-based lexical decomposition seriously, monadic composition is EVERYWHERE!

# Putting everything together

Example 1: Sorry to say, but it's a fact. 🙌

The speaker (S) performs a declarative speech act in a tone conventionalized by the affective recycling of this image: 🙌.



$\llbracket EP \rrbracket = \text{write}(\llbracket E_{\checkmark} \rrbracket) \gg = \lambda y. \eta(\llbracket \text{Sorry to say, but it's a fact.} \rrbracket)$

= ...

=  $\langle (\lambda u . \{w \mid \text{AFFECT}(S, u) \text{ at } w\})(\llbracket \text{Sorry....} \rrbracket), \{E \text{ is supported by } \text{🙌}\} \rangle$

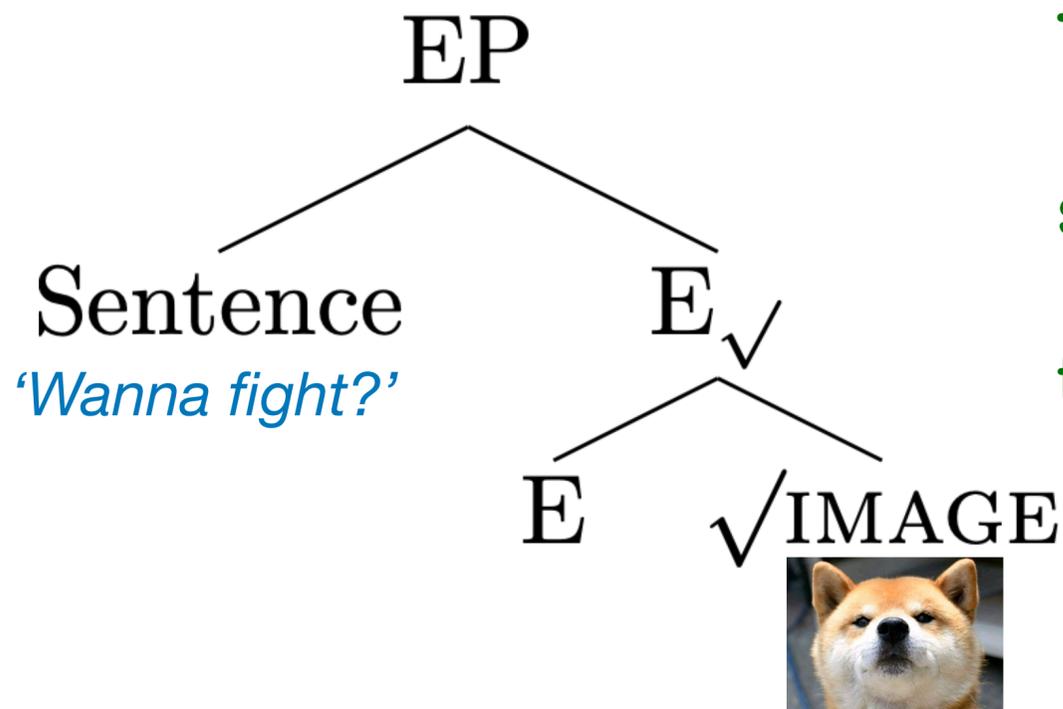
=  $\langle \{w \mid \text{AFFECT}(S, \llbracket \text{Sorry....} \rrbracket) \text{ at } w\}, \{\text{nonchalant tone}\} \rangle$

🙌 **at-issue**

🙌 **non-at-issue**

# Putting everything together

## Example 2



The speaker (S) performs an interrogative speech act in a tone conventionalized by the affective recycling of this image:



$\llbracket EP \rrbracket = \text{write}(\llbracket E_{\checkmark} \rrbracket) \gg = \lambda y. \eta(\llbracket \text{'Wanna fight?'} \rrbracket)$

= ...

=  $\langle (\lambda u . \{w \mid \text{AFFECT}(S, u) \text{ at } w\}) (\llbracket \text{'Wanna fight?'} \rrbracket), \{E \text{ is supported by } \langle \text{Shiba Inu dog} \rangle\} \rangle$

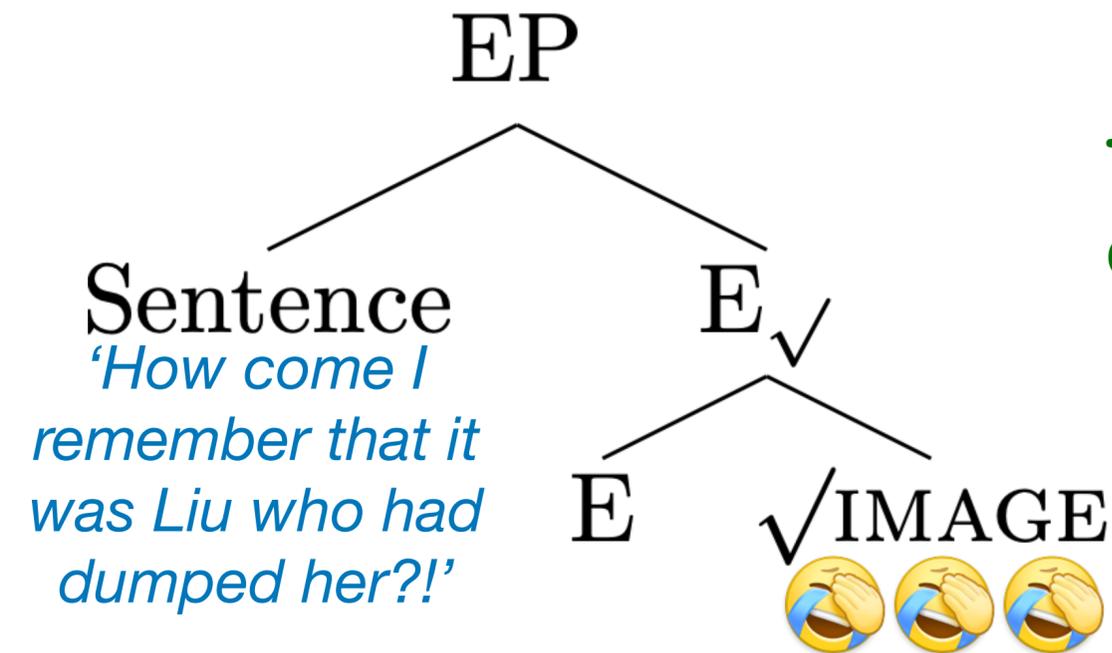
=  $\langle \{w \mid \text{AFFECT}(S, \llbracket \text{'Wanna fight?'} \rrbracket) \text{ at } w\}, \{\text{jocularly menacing tone}\} \rangle$

👉 at-issue

👉 non-at-issue

# Putting everything together

Example 3: 'How come I remember it was Liu who had dumped her?!' 🤔🤔🤔



The speaker (S) performs a rhetorical question speech act in a 🤔🤔🤔 tone.

$\llbracket EP \rrbracket = \text{write}(\llbracket E_{\checkmark} \rrbracket) \gg = \lambda y. \eta(\llbracket \text{'How come...?!'} \rrbracket)$   
 $= \dots$

$= \langle (\lambda u . \{w \mid \text{AFFECT}(S, u) \text{ at } w\})(\llbracket \text{'How come...?!'} \rrbracket), \{E \text{ is supported by } \text{🤔🤔🤔}\} \rangle$

$= \langle \{w \mid \text{AFFECT}(S, \llbracket \text{'How come...?!'} \rrbracket) \text{ at } w\}, \{\text{strongly amused tone}\} \rangle$

👉 **at-issue**

👉 **non-at-issue**

# CMC grammar

# A formal linguistic theory (repeated)

**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 images into affective “visual particles”

## Bonus

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.

# Big picture questions

## 1. What is the cognitive nature of CMC data?

Are affective emojis (or emoticons, memes, gifs, etc.) a product of the language faculty?  
Or does CMC involve the joint effort of different cognitive faculties?

A related question: Is written language (solely) a product of the language faculty?

**If not, then what does a formal syntactic/semantic analysis even mean?**

It means we are applying formal linguistic tools to not-entirely-linguistic data.

This is fine as long as the tools are sufficiently domain-general!

(Remember that many formal linguistic tools themselves are borrowed from other disciplines.)

# Big picture questions

## 2. What formal linguistic tools are applicable to CMC data?

In this study, I have been quite conservative and only used:

- **Merge** basic combinatorial operation set formation
- **Categorization** recycling existing material for new purpose MMM (Biberauer 2017)
- **Model-theoretic semantics** not limited to natural languages

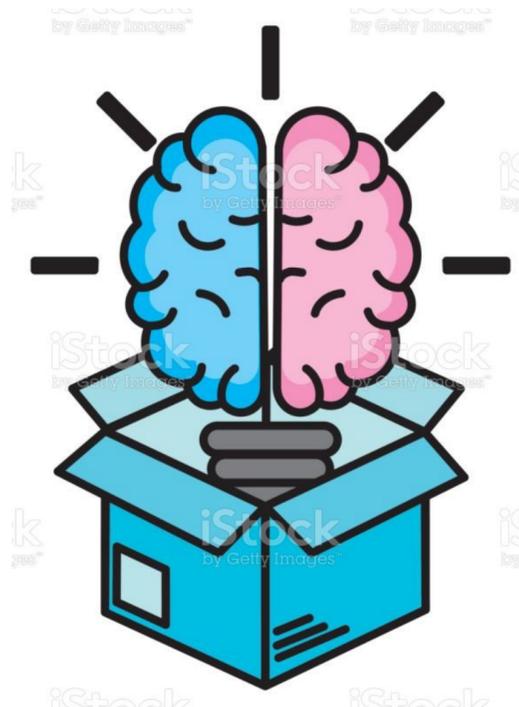
**These are all highly general tools/ideas.**

I refrained from using other familiar Minimalist tools such as Agree, Move, Phases...

Basically, anything motivated by “interface conditions” risks being domain-specific.

**In a word, research on CMC grammar is closely associated with the “third factor” (Chomsky 2005)**

# CMC forces us to think outside the conventional linguistics box!







# Selected references

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