

On-the-fly Editing of Emoji Elements for Mobile Messaging

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Introduction

Many emojis have been provided to help users convey subtle expressions. User customization method allows editing detailed parts and adding animation effects to an off-the-shelf emoji for increasing the variety. Moreover, on-the-fly editing methods have been studied to customize the emoji according to the user's emotion when sending a message. However, on-the-fly editing of graphical elements is not considered in conventional methods as follows.

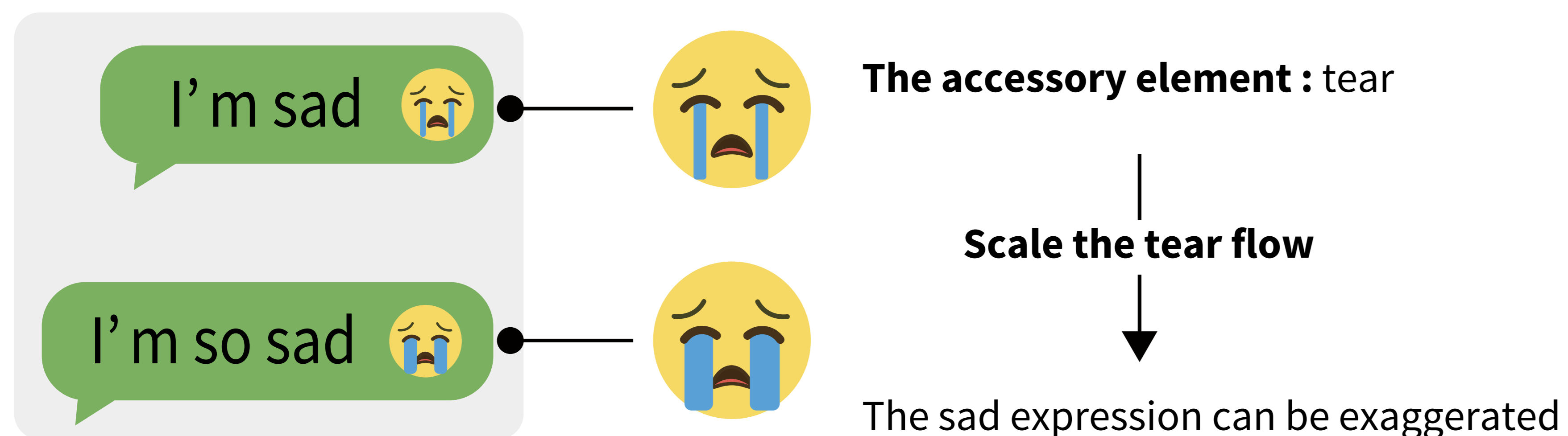
Application	On-the-fly editing	Part-wise editing	# of operations	Animation
Apple Memoji	-	++	n/a	+
Slack	-	-	n/a	+
Google Gboard	++	-	3 steps	+
MojiBord	++	+	1-2 steps	++
VibEmoji	++	-	3-4 steps	++
Our method	++	+	2 steps	-

++ : fully implemented

+ : partially implemented

- : not implemented

Our motivation is **on-the-fly editing of the accessory elements** drawn on the face, such as tears, sweat, hearts, etc., of standard emojis to expand the range of emotional expression when typing messages. Because **accessory elements** play a particularly important role in emotional expression*, we assume that editing the accessory shapes can exaggerate or reduce emotional expression.



*Gaku Kutsuzawa, Hiroyuki Umemura, Koichiro Eto, and Yoshiyuki Kobayash. 2022. Classification of 74 Facial Emoji's Emotional States on the Valence-Arousal Exes. Scientific Reports 12, 1, Article 398 (2022), 10 pages.

Proposed System

Editable accessories

We define different types of a single parameter to change the emotional impression for each emoji to control the number or scale accessory of elements.



Changing the number of sweats and size of the heart



Gesture-based interface

- 1. Flick-based input :** The parameter value is determined according to the flicking velocity. This allows rapid input, but the editing result can only be checked after every operation.
- 2. Swipe-based tweaking :** The shape parameter value is tweaked according to the swipe distance while seeing the deformation result.

Discussion

- ✓ The change in the number of elements : The senders and receivers were easily able to recognize the difference.
- ✗ The differences in element size : the receivers were less aware of relative size differences.
- ✓ Representing the intensity of the sender's emotion. Our approach will contribute to alleviating the increase of the emoji set; a slight emotional difference could be expressed by modifying existing emojis.

Future work

- Simultaneous control of multiple shape features with single control parameter
- On-the-fly animation control to more expressive messaging
- More intuitive and efficient method to edit the emoji with simple operations