

# Expressive Messaging on Mobile Platforms

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## ABSTRACT

We present a design for expressive multimodal messaging on mobile platforms. Strong context, simple text messages, and crude animations combine well to produce surprisingly expressive results.

## Keywords

Expressive messaging, Mobile devices, SMS, Multimodality

## CURRENT PRACTICE IN MOBILE MESSAGING

In certain parts of the world, mobile phones are everywhere and used by everyone. Phones are not only used for synchronous and asynchronous voice communication, but also – increasingly – for written communication. In spite of complex and non-intuitive interfaces, Short Message Service (SMS) messages are sent and received by a huge number of customers, mostly young, in many European countries. In Finland, the mobile phone users sent in total 650 million text messages in 1999 (approximately 100 SMSs/citizen annually) [1].

SMS differs from voice communication in many respects. First, it is not primarily used for serious and task-oriented communication, but for expressive, social and emotional functions, e.g. ‘how are you doing?’ and ‘whazup?’ messages. Humor, flirts, gags and play are central objectives of textual messaging. In spite of the low bandwidth (up to 160 characters, typically in low-resolution monochrome), there is a surprisingly high degree of expressivity in SMS communication, due to the systematic reliance on a rich and shared awareness of situation, preferences, sense of humor, and social context between sender and recipient. SMS messages are typically not sent to strangers, but used in peer-to-peer communication between friends, lovers, or family members. In addition, the composition and reception of SMS messages often take place in a collaborative setting with a group of people gathering around the device [2].

In the *Expressive Messaging* project, we want to maintain

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the special features of SMS messaging, but expand it into other areas of interest. The basic research and design questions are: What is expressivity? How it can be enhanced?

## Avatars

Many collaborative multi-user environments allow people to use an *avatar* – a virtual representation of personal presence and personal characteristics. The way people choose to represent themselves in a virtual world is not always straightforwardly predictable from their physical world appearance and character – the virtual world allows users to play with their identities [3]. Our design project allows users to employ animated characters to enhance expressivity of SMS messaging. However, the *synchronous* nature of most virtual avatars makes fine-grained expressiveness difficult since users will be unable to control the behavior of the avatar online over a simple numeric keyboard. In this project, we explore *asynchronous* avatar usage.

## Emoticons

In this respect, our project draws more from *emoticons* than from avatars. Combining a textual message with a semi-imagery representation of a face adds new layers of meaning (e.g. irony), guides the recipients’ interpretation of the message, and expresses the sender’s emotional state. Creating animated emoticons that move and transform over the temporal flow of the message will merge modalities in similar ways to cartoon and animated film. The efficiency of emoticons also shows that expressivity lies not in the realism of the imagery, but in the combination of modalities, and, again, the rich and shared context of sender and recipient.

## DESIGN CHOICES

### Composing Messages: Moods and Events

The first design issue was how to allow senders to express a basic emotional undertone in the message through the actions of their avatar. Users start composing a message by selecting from a palette of *moods*, e.g., happy, distressed, angry and busy. This makes the avatar perform some action to reflect the mood in a few seconds of animation, which will then be looped during the length of the message. In parallel, the textual message is shown as a cartoon balloon.

In addition to mood animations, avatars should be able to perform simple *events*, e.g. jump, dance, smile, laugh, weep (possibly connected to sound effects). Events can be added at specific points in the message. In preview mode, the animation can be stopped between the looped mood animations and the user can choose between events in a list. Since all mood and event animations start and stop at a neutral position frame, continuity of movement can be ensured without involving the user. When the sender has inserted event(s) and previewed, the package is sent off.

Events need to be paced to match the written message – timing is central in conveying punch lines or other emotional content. To this end, we have sketched a standard for encoding expressively enhanced messages: the Mood Markup Language or *MoodML* (Figure 1).

```
<MoodML skin="88F2A0F" id="janet"
  to="0405047123" mood="happy;8">
  I'm excited to see you!
  <event="jump">
  Be there at ten.
  <event="dance">
</MoodML>
```

Figure 1. MoodML example.

### Quickies and Recycled Messages

In some cases, standard scripted responses to messages can be useful. Our design gives recipients the possibility of saving the script from a received message and recycling it later, using his or her own character skin and rewriting the balloon text.

### Skins

Expressivity lies, however, not only in the temporal composition of text, moods and events, but also in the graphical design of the *skins* and movements. Most users will probably make use of prefabricated skins. Some standard skins may be included in the service package. Others may be produced by professional firms for business marketing: just like product placement in films, users can get professional skins for free, if she allows her mobile avatar to wear a *Budweiser* T-shirt in all her messages.

Some users, however, will want to design their own skins using their own graphical software. To this end, open standards and APIs are absolutely essential. No single organization will have the stamina to produce and uphold the interest of the potential user community: the creativity of the users must be tapped into. Thus, it is important to create a community in which sharing scripts and skins are encouraged and awarded.

However, in order to ensure compatibility between skins, scripts, and users, there have to be some minimal requirements for any given skin. For instance, if you make a

skin publicly available or start using it yourself, it has to perform a minimum list of mood and events.

Some users will want to switch between different skins depending on context, e.g., messaging with buddies, colleagues, relatives, and partners. The system provides easy configuration possibilities for this.

### Configuration

Configuring the interface and the characteristics of the skin, archiving message scripts, sharing scripts and skins, community building and other administrative aspects of the system are accessed by the user from a Web interface rather than over the mobile device: the mobile device is used solely for composing, transmission and receipt of messages. We expect most users will not be concerned with the niceties of configuration; but we do expect some users to be very interested.



Figure 2. Example screen.

### IMPLICATIONS FOR HCI

Composing a message on a mobile device is different than doing it on a stationary terminal: using "dead" time on buses, in bars, and on school hour breaks will give ample time to compose and perfect avatar-based messages. Such non-work related usage of information technology has been an underdeveloped area of research in HCI.

Future research directions include exploring the tradeoff between reality and real-time concerns – familiar from virtual reality and natural language processing projects – and the exploration of autonomous or semi-autonomous character agents with scripts to constrain their behavior.

### REFERENCES

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