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Contents, Forms and Functions
of Interpersonal Pictorial
Messages in Online
and Mobile Communication

The question this paper deals with is what contents, forms and functions pictorial messages take in online communication (e-mails with image attachments) on the one hand and in mobile communication (MMS messages) on the other. For the empirical investigation of this question the most recently received and sent e-mails containing image attachments and MMS messages of 112 German-speaking respondents aged 14 to 51 (52% female, 48% male) were recorded. 603 e-mails with image attachments and 342 MMS messages served as the data basis for further analysis. The messages were categorized on the basis of a content analysis. In accordance with previous MMS studies from Scandinavia and Japan, this study confirms that MMS messages fulfil an affective function within close social relationships (seven subcategories: [1] Greetings, [2] Gift Giving, [3] Relationship Maintenance, [4] Teasing, [5] Joking, [6] Storytelling, [7] Mutual Experience). Additionally, although to a lesser extent, instrumental MMS messages were identified (four subcategories: [1] Information Exchange, [2] Appointments, [3] News, [4] Tasks). 11% of the analyzed e-mails with image attachments and 19% of the MMS messages contained only imagery and no text, whereas the other messages contained combinations of imagery and text.

Introduction

Both written (e.g. letters, e-mails, SMS) and oral language (e.g. conventional phone calls, mobile phone calls) have long dominated mediated interpersonal communication. But, more recently, pictorial communication – among other things using digital photography – has become more and more important. In 2005 there are 20 million digital cameras being used in Germany (a country with roughly 80 million inhabitants), and one out of four mobile phones is equipped with a camera – a trend that is expected to continue.

Digital cameras – especially those integrated in mobile phones – have

contributed to a substantial reduction of costs and effort for day-to-day photography while at the same time increasing the options for taking photographs, governing and distributing the data independently of time and space. The interpersonal exchange of digital photographs and other digital imagery may occur via e-mail with an attachment or via mobile short messaging (MMS: multimedia messaging service). A development towards the visualization or the “photographization” of both online and mobile communication is evident.

Previous Studies

Previous studies concerning the usage of mobile phone cameras have shown that many photographs taken with mobile phones are either simply saved on the mobile device, shown to other people in face-to-face situations or uploaded to a personal computer, without ever being sent via MMS messaging.¹

If MMS messages are exchanged at all, this usually occurs – similar to SMS messaging – within a circle of close friends. The average number of people a person exchanges MMS messages with is estimated to be 2 to 5, usually including his or her partner and close friends.² This at the same time implies that MMS messages require the communication partners to share a high degree of contextual knowledge and are often incomprehensible to outsiders.³

MMS partners who know each other well from their shared day-to-day life most commonly exchange MMS messages that are intended to fulfil affective functions, like sustaining couple relationships⁴ or boosting the sense of community in groups of friends.⁵ This often occurs within the framework of a “leisure conversation”⁶, in which both humour and teas-

¹ E.g. by T. Kindberg, M. Spasojevic, R. Fleck and A. Sellen, *How and Why People Use Camera Phones*, HP Laboratories Technical Report HPL-2004-216, 2004.

² D. Okabe, “Emergent Social Practices, Situations and Relations through Everyday Camera Phone Use”, paper presented at *Mobile Communication and Social Change*, the 2004 International Conference on Mobile Communication in Seoul, Korea, October 18–19, 2004.

³ T.-K. Lehtonen, I. Koskinen and E. Kurvinen, “Mobile Digital Pictures – the Future of the Postcard? Findings from an Experimental Field Study”, in V. Laakso and J. Östman (eds.), *Postcard in the Social Context*, Hämeenlinna: Korttien talo, 2002, pp. 71–98.

⁴ A. Mäkelä, V. Giller, M. Tscheligi and R. Sefelin, “Joking, Storytelling, Artsharing, Expressing Affection: A Field Trial of How Children and Their Social Network Communicate with Digital Images in Leisure Time”, *Proc. CHI 2000, CHI Letters 2* (1), 2004.

⁵ Lehtonen et. al., *op. cit.*

⁶ Mäkelä et al., *op. cit.*

ing⁷ as well as storytelling⁸ (short anecdotes) are very important. But MMS messages may also be used as postcards⁹ or serve as little presents.¹⁰ In all these types of MMS messages, positive feelings such as trust, joy and fun prevail. Moreover, images are used in order to increase social or visual presence: mutually shared events may be captured,¹¹ and visual participation in friends' activities may be made possible.¹² Scenes from day-to-day life the sender renders "noteworthy" – such as a child's first attempts to ride a tricycle or impressions from a party – may be captured, too.¹³

Apart from affective functions, MMS messages may also fulfil instrumental purposes.¹⁴ In the data recorded here, work groups were using MMS messages in order to document the implementation status of a project they were working on. Moreover, it is to be expected that instrumental functions currently associated with SMS messages – such as coordinating dates and appointments – will utilize to MMS communication in the future.¹⁵

Taking into account current MMS studies, primarily from Scandinavia and Japan, this study explores the contents, forms and functions of MMS messages in Germany. Whereas in previous studies often only a small number of pre-selected respondents were equipped with mobile-phone cameras, the current study takes a larger collective of MMS-users into account. Additionally, the MMS messages are compared with another

⁷ E. Kurvinen, "Only When Miss Universe Snatches Me: Teasing in MMS Messaging", paper presented at DPPI 2003, June 23–26, Pittsburgh, PA, 2003.

⁸ R. Ling and T. Julsrud, "Grounded Genres in Multimedia Messaging", in Kristóf Nyíri (ed.), *A Sense of Place: The Global and the Local in Mobile Communication*, Vienna: Passagen Verlag, 2005, pp. 329–338.

⁹ Lehtonen et al., *op. cit.*; A. Taylor and R. Harper, "Age-Old Practices in the 'New World': A Study of Gift-Giving between Teenage Mobile Phone Users", *CHI 2002*, Minneapolis: ACM Press.

¹⁰ Kindberg et al., *op. cit.*

¹¹ S. Counts and E. Fellheimer, "Supporting Social Presence through Lightweight Photo Sharing On and Off the Desktop", *Proc. CHI 2004*, ACM Press, 2004; Okabe, *op. cit.*

¹² Mizuko Ito, Daisuke Okabe and Misa Matsuda (eds.), *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life*, Cambridge, MA: The MIT Press, 2005; Kindberg et al., *op. cit.*; Okabe, *op. cit.*

¹³ Kindberg et al., *op. cit.*; Ilpo Koskinen, "Seeing with Mobile Images: Towards Perpetual Visual Contact", in Kristóf Nyíri (ed.), *A Sense of Place*, pp. 339–347.

¹⁴ Ling and Julsrud, *op. cit.*; Kindberg et al., *op. cit.*

¹⁵ N. Döring, "'1x Brot, Wurst, 5 Sack Äpfel I.L.D.' – Kommunikative Funktionen von Kurzmitteilungen (SMS)", *Zeitschrift für Medienpsychologie*, 14/3 (2002), pp. 118–128.

er highly established form of interpersonal pictorial communication that has so far hardly been considered in communication research: e-mails with image attachments.

Methodology

Instrument

A protocol questionnaire was developed, in order to enable the systematic recording of the usage of imagery in interpersonal online and mobile communication. Respondents documented e-mails with image attachments and MMS messages they received and sent using this questionnaire. The documentation included the precise text and image content, information concerning the communicational framework (time, respondent or sender, etc.) and a subjective interpretation of the messages.

Sample

A total of 112 German-speaking participants aged 14 to 51 ($M=24.43$ years, $SD=5.10$) took part in the study (52% female, 48% male), which was carried out in the winter of 2004/2005. The majority of the participants (63%) were still students (school, university or professional training), a minority (22%) were employed. The respondents supplied detailed information concerning 603 e-mails with image attachments and 342 MMS messages. In addition to the pictorial messages the respondents sent e-mails only containing text and SMS messages several times per week.

Data Analysis

Taking previous research on MMS messaging into account, the recorded messages were categorized on the basis of a content analysis. While analyzing the messages, categories taken from previous studies were developed utilizing an inductive approach.

Results

In accordance with previous MMS studies the messages were categorized according to their primary function as being either affective or instrumental messages,¹⁶ with affective MMS messages quantitatively dom-

¹⁶ E.g. by Ling and Julsrud, *op. cit.*; Kindberg et al., *op. cit.*

inating the sample. Both main categories were then divided into subcategories. Affective MMS messages were divided into seven subcategories (Table 1), instrumental MMS messages were divided into four subcategories (Table 2). The majority of MMS messages could be categorized unambiguously. In some cases (25% of the messages) more than one communicative function was found within one message, therefore these messages were categorized under more than one category. MMS messages sent to the respondents by their service or network providers were excluded from the analysis (7%). Thus, 317 out of the original 342 messages are listed in Tables 1 and 2.

Affective MMS		
<i>Category</i>	<i>N</i>	<i>%</i>
1. Greetings	71	21
2. Gift Giving	60	18
3. Relationship Maintenance	57	17
4. Teasing	35	10
5. Joking	32	10
6. Storytelling	18	5
7. Mutual Experience	7	2
Total	280	83

Table 1
Affective MMS messages

Instrumental MMS		
<i>Category</i>	<i>N</i>	<i>%</i>
1. Information Exchange	45	13
2. Appointments	33	10
3. News	29	9
4. Tasks	20	6
Total	127	38

Table 2
Instrumental MMS messages


In the following section, one example for each of the most frequently assigned subcategories within the two main categories will be presented in more detail. The MMS images will be reconstructed according to the recorded descriptions.

Affective MMS Messages

Affective MMS messages serve to exchange feelings, strengthen social relationships or boost the sense of belonging.

GREETINGS


The affective subcategory *Greetings* comprises messages that do in fact replace snail-mail postcards. Additionally, MMS messages are included that are primarily intended to send greetings. Comprising 21% of all messages, this is the largest subcategory. The example shows an MMS message sent from one friend (male buddy) who is on holiday in Sweden to another friend (female buddy) back home. Both the image and the text highlight the fact that the sender is currently abroad and has experienced a lot of interesting things so far. The fact that the recipient interprets the MMS image in her own words, using the category’s actual title, “postcard-like greetings”, is interesting, too.

Affective MMS – Greetings	
Sender/Recipient	From one friend (male buddy) to another friend (female buddy)
Respondent’s description of the image	Postcard-like greetings from abroad
MMS image, reconstructed in accordance with the respondent’s description	
MMS text	<i>Heja Sverige! There’s a lot to tell, but the picture is marvellous, isn’t it?</i>

GIFT GIVING


Compared with *Greetings*, the *Gift Giving* category (18% of all MMS messages) is even more affective and designed in a much more personal man-

ner, making the message a kind of present for the recipient. The following example is a declaration of love, in which the image decoratively underlines the highly emotional content of the text. The female recipient interpreted the message as a symbol of “eternal love”.

Affective MMS – Gift Giving	
Sender/Recipient	From male partner to female partner
Respondent’s description of the image	A heart in flames
MMS image, reconstructed in accordance with the respondent’s description	
MMS text	<i>Hi my shooting star, you’ve started a fire in my heart that can never die. I’ll love you forever more myn!</i>


TEASING

As in the *Humour/Joking* subcategory, messages in the *Teasing* category convey jokes and humour. Yet, additionally, they include a personal element. In most cases the message is meant to tease the recipient. Contextual knowledge possibly only shared between sender and recipient is particularly important in this subcategory – the messages here include allusions that can hardly be understood by outsiders. The following example contains a neologism combined with an image that seems surreal. Nevertheless, the female recipient was able to give an appropriate interpretation. Shortly before she received the message, she had recommended a department store to one of her friends, the sender of the message. In her opinion he sent the message as an ironic statement concerning her recommendation and the things he bought at the store.

Affective MMS – Teasing	
Sender/Recipient	From one friend (male buddy) to another friend (female buddy)
Respondent's description of the image	A pack of 3 men's underpants displayed on a park bench
MMS image, reconstructed in accordance with the respondent's description	
MMS text	<i>Sexyfitschihexy</i>

JOKING

Messages in the subcategory *Joking* are intended to make the recipient laugh or feel better. In many cases, comic strips downloaded from the internet or purchased from certain providers via the mobile phone may be used as a part of the messages. As in the majority of the humorous messages the example in this category includes a comic strip. In this particular case it is only in combination with the sender's text that the actual joke becomes clear. The text denies the existence of Santa Claus while the image seemingly proves the contrary. The respondent, who received this message from a friend, interpreted the MMS message as being "fun".


Affective MMS – Joking	
Sender/Recipient	From one friend (male buddy) to another friend (female buddy)
Respondent's description of the image	Santa Claus tobogganing down a snowy slope
MMS image, reconstructed in accordance with the respondent's description	
MMS text	<i>I know you will be hurt by what I have to tell you! It will be very painful! But, before anyone else tells you: Santa Claus does not exist!!</i>

Instrumental MMS Messages

Instrumental MMS messages fulfil functions going beyond socializing and the expression of feelings. They deal with important conditions or events in the material world, such as dates and appointments, professional tasks etc.

NEWS


This instrumental subcategory describes MMS messages that are sent in order to exchange topical information absolutely new to the recipient. In most cases a topical event is the reason for sending the MMS message. The News subcategory comprises 9% of all MMS messages recorded and represents the third largest category. The example shows an MMS message without any text. Nevertheless, the recipient, a student, understood the message to show a picture of the coffee machine his roommate had just bought – a piece of topical news with very practical implications for their shared life.

Instrumental MMS – News	
Sender/Recipient	From student to fellow student (or from roommate to roommate)
Respondent's description of the image	Picture of the newly bought coffee machine set up and working (coloured lights)
MMS image, reconstructed in accordance with the respondent's description	
MMS text	

APPOINTMENTS

The MMS messages in the *Appointments* subcategory (10%) deal with organizing and coordinating appointments, invitations, but also with calling off face-to-face meetings. In the following example the image supports the written invitation to a cup of tea. The recipient, a 29-year-old employee, interprets the pictorial message as an “eye-catcher”, something that is nice to look at or even a lure. Other MMS messages within

this category contain real still-lives (e.g. popcorn on a table accompanying an invitation to watch videos).

Instrumental MMS – Appointments	
Sender/Recipient	From one female colleague to another female colleague
Respondent's description of the image	In the picture you can see cake on a plate and tea being served from a pot
MMS image, reconstructed in accordance with the respondent's description	
MMS text	<i>When are you going to come over for some cake?</i>

MMS Messages versus E-Mails with Image Attachments

Compared with MMS messages e-mails with image attachments often had several functions, contained significantly more text and were less often sent without any text (11% of all e-mails versus 19% of all MMS messages were sent without text). The variety of images used was a lot greater for the e-mails with image attachments (e.g. the senders' photographs, other people's photographs, clip art graphics, screenshots, etc.) than for the MMS messages.

Further differences can be found when the communicators in MMS and e-mail communication are compared: friends are the most common communicators in interpersonal communication both in MMS messaging (38%) and in e-mail messaging (51%). Next in MMS messaging are partners. Images and texts are used here for emotional communication. E-mails with image attachments, on the other hand, are a lot less frequently sent to partners (5%), but they are, however, very often sent to fellow colleagues and students (20%; MMS messages: 6%).

Discussion

Anyone using e-mail as an online text medium will tend to send e-mails with image attachments as well. Anyone using SMS as a mobile text medium, however, will not necessarily and automatically be a user of MMS messaging. In the current stage it is not the new medium's lack

of social functionality, but in particular high costs and technical complications that prevent more frequent MMS usage. The study has shown that the spectrum of potential interpersonal MMS usage is large. MMS messages (in the same way as SMS messages) are primarily used in order to support close social relationships: messages sent to one's partner are of high importance and often express love – explicitly, by using humour or by teasing.

The fact that images (especially photographs) are a lot harder to render anonymous than text and the fact that the disclosure of images is regarded as a severe infringement of respondents' privacy, both represent methodological problems for the research into interpersonal communication using imagery. This is why the messages and images in the *Erotic and Sexual Content* subcategory could not be examined more closely in this report, although the category comprised a number of messages probably worth mentioning. Beyond the findings mentioned here, though, the investigation provides a series of further interesting results still to be published – for example concerning gender differences or the connection between the usage of e-mails with image attachments and MMS messages on the one hand and other forms of pictorial communication (e.g. conventional postcards, online photo albums) on the other.

In interpersonal communication images have much more than a merely decorative function, they frequently represent essential information. In combinations of text and images, it is often the text that conveys the central message. The message may be supported by the image.¹⁷ Nevertheless, a large amount of the pictorial messages sent via e-mail or MMS messaging today does not contain any text at all – an indication of our skills in visual communication.

¹⁷ Mäkelä et al., *op. cit.*; Kurvinen, *op. cit.*; Koskinen, *op. cit.*