Exploring the missing wink: emoticons in cyberspace

Daantje Derks

;-)

Exploring the Missing Wink: Emoticons in Cyberspace

The research reported in this dissertation was carried out at the

OpenUniversiteitNederland

Exploring the Missing Wink: Emoticons in Cyberspace

PROEFSCHRIFT

Ter verkrijging van de graad van doctor
aan de Open Universiteit Nederland
op gezag van de rector magnificus
prof. dr. ir. F. Mulder
ten overstaan van een door het
College voor promoties ingestelde commissie
in het openbaar te verdedigen

op vrijdag 21 september 2007 te Heerlen om 15:30 precies

door
Daantje Derks
geboren op 28 oktober 1978 te Tegelen

Promotor

Prof. dr. J. von Grumbkow, Open Universiteit Nederland

Toegevoegd promotor

Dr. A. E. R. Bos, Erasmus Universiteit Rotterdam,Open Universiteit Nederland

Overige leden beoordelingscommissie

Prof. dr. A. H. Fischer, Universiteit van Amsterdam

Prof. dr. E. H. S. Lechner, Open Universiteit Nederland

Prof. dr. B. Rimé, Université Catholique de Louvain-la-Neuve

Contents

Chapter 1

General introduction

;-)

Chapter 1

General introduction

The present dissertation examines the use of emoticons in social interaction on the Internet. In a world where an increasing amount of interaction takes place by means of the Internet, it is implicitly assumed that computer-mediated communication (CMC) can replace the daily face-to-face (F2F) communication. But on what grounds? It is important to note the differences between regular face-to-face communication and computer-mediated communication and the consequences of these differences for the expression of emotions. Furthermore, it is relevant to know if emoticons can serve the same functions as nonverbal behavior in F2F communication. This first chapter provides a general overview of this dissertation and will shortly address the above mentioned issues. These issues will be elaborated in the following chapters.

Lack of nonverbal cues in CMC

McKenna and Bargh (2000) listed the differences between face-to-face (F2F) communication and computer-mediated-communication (CMC). We will shortly mention these differences and subsequently focus on the differences which are of main importance for the expression of emotion in CMC. First, it is quite possible to be anonymous on the Internet. It is common to create and use nicknames or pseudonyms in interacting on the Internet. By creating new email accounts with false names, for instance. Second, physical distance or propinquity does not matter on the Internet. It is just as easy to communicate with someone at the other end of the world, as it is to communicate with neighbors. Third, unlike in real life, visual cues, physical appearance and tone of voice are absent in text-based CMC. Finally, synchronous time becomes relatively irrelevant on the Internet (McKenna and Bargh, 2000). This time aspect is two-folded. On the one hand, it is possible to reach someone in a split second no matter the distance and is it possible to reach large groups of people at the same time. On the other hand, because all the messages have to be typed and all nonverbal cues have to be verbalized, it takes more time to communicate the same amount of information (Walther 1992; Walther & Burgoon, 1992). The anonymity aspect and the lack of social cues are the focus of most psychological research (Bargh & McKenna, 2004). Chapter 4 of the present dissertation gives a short overview of the three prominent theoretical approaches considering these features (e.g., Sproull & Kiesler, 1986; Kiesler, Siegel, & McGuire, 1984; Siegel, Dubrovsky, Kiesler, & McGuire, 1986; Spears, Postmes, Lea, & Wolbert, 2002; Bargh, 2002; McKenna & Bargh, 2000).

A central issue in this dissertation is how the lack of nonverbal cues affects the emotional expression online, and what the impact of emoticons is on message interpretation. The absence of social cues is often seen as the determinant of different social effects of CMC in comparison to F2F communication, and has been at root of several theories about the effects of CMC (Walther & Tidwell, 1995). Over the years, research has examined how the social meaning of interaction is affected by the absence of visual cues, especially in situations where interactants replace F2F communication for CMC (see for a review: Walther & Parks. 2002). Walther, Loh and Granka (2005) summarize that there are two prevailing positions with respect to this issue. One position holds that the absence of nonverbal cues withholds interactants important information about emotions, attitudes and partners' characteristics, resulting in a less sociable, relational, understandable and effective communication. Well-known approaches in these *cues-filtered out approach* are social presence theory (Short, Williams, & Christie, 1976), lack of social context cues approach (e.g., Kiesler, Siegel, & McGuire, 1984; Sproull & Kiesler, 1986), and the cues filtered out model (Culnan & Markus, 1987). This *cues-filtered out approach* has fallen out of favour with many CMC researchers, and the subsequent research of the original advocates of this approach has reflected also more positive assessments of CMC's potential in social interaction (e.g., Galagher, Sproull, & Kiesler, 1998; Sproull & Faraj, 1997). The other position holds that people adapt to the medium by imbuing verbal messages with contextual and stylistic cues, information about attitudes, emotions (e.g., by the use of emoticons), and personal characteristics allowing for normal relational communication to build up. Walther's (1992) Social Information Processing (SIP) theory formalizes the latter position. This theory explicitly rejects that the absence of nonverbal cues restricts the interactants' capability to exchange individuating information. Walther (1992) assumes that interactants are just as motivated to reduce uncertainty, form impressions and develop affinity in online settings as they are in face-to-face settings. When there are no nonverbal cues available, interactants substitute the expression of relational messages into cues available in CMC (e.g., social content, emoticons, style, and timing of verbal messages) (Walther, 1992). The current dissertation examines the relational and communicational functions of emoticons in social interaction in CMC.

Emoticons

Although nonverbal cues are absent in text-based CMC, there are non-textual possibilities available in the form of emoticons. Emoticons are (typo)graphic depictions of facial behaviour suggested to convey social emotion. Thompson and Foulger (1996) remark that emoticons may serve as nonverbal surrogates suggestive of facial expression.

Therefore they may enhance the exchange of emotional information by adding social cues beyond the verbal text of the message. Online interactants often use emoticons to augment the meaning of a message (Rezabek & Cochenour, 1998). The simple fact that emoticons are used, implicates that CMC users have a need to express some of their emotions with short symbols rather than text (Fischer, in press). Huffaker and Calvert (2005) conclude that emoticons are prevalent in online conversations. However, it is still unclear when emoticons are used, how they are interpreted, and whether they are context dependent (see also Walther & D'Addario, 2001).

The first empirical studies (chapter, 3 and 4) reported in this dissertation examine the influence of social context and interaction partner on emoticon use. Wagner, Lewis, Ramsey and Krediet (1992) demonstrated in face-to-face situations, that the extent of expression of particular emotions depends on how appropriate others believe those emotions would be in a particular context. It seems plausible that in general the expression of positive emotions is more accepted than negative emotions. Research from Lee and Wagner (2002) showed that people display more emotions in positive contexts than in negative contexts in the presence of others. In accordance with this line of reasoning we examine whether these findings, tested in face-to-face settings, will be corroborated in a CMC setting where people use emoticons.

The interaction partner is also an influential factor on the expression of emotion in face-to-face communication (e.g., Hess, Banse, & Kappas, 1995; Jakobs, Manstead, & Fischer, 2001; Fischer, Manstead, & Zaalberg, 2004; Parkinson, Fischer, & Manstead, 2005; Tiedens & Leach, 2004). Hess et al. (1995) have shown that if a person is exposed to a pleasant emotional stimulus and believes that a friend is exposed to the same stimulus at the same time, the person smiles more than if that other person is a stranger. Wagner and Lee (1999) show that the frequency of nonverbal emotions increases when the interaction partner is considered to be a friend. So, when others are psychologically present, there is some sense of tuning our facial displays with them through facial behaviors. Manstead, Lea and Goh (2006) note that it does not matter if this other person is in another room, another city or another continent. We even smile at them, especially when this other person is considered to be a friend. Since emoticons are considered to be nonverbal surrogates of facial behavior, similar effects in emoticon use are expected.

Manstead, Fischer, and Jakobs (1999) imply that facial displays have social and emotional functions. Are facial expressions the result of the underlying emotion, or are they more functional in a social sense, to signal our intentions? In short, there are three influential views. The *emotional view* (e.g., Ekman, 1972; Izard, 1971, 1977) holds that facial displays express a person's internal emotional state. The *behavioural ecology view* (Fridlund, 1994) argues that facial displays are social signals communicating social

motives. Finally, the *components view* (e.g., Cacioppo, Bush, & Tassinary, 1992; Caroll & Russell, 1997; Manstead, Fischer, & Jakobs, 1999 holds that facial displays are affected by different components of the emotion process, thus, by both emotional and social factors. In the current dissertation the social motives for emoticon use are examined. Next to the motives for using an emoticon from a writer's perspective, we will also examine how the receiver of the message interprets the motive of the writer. The lack of facial feedback in text-based CMC might be a breeding ground for miscommunication and misunderstanding of the intention of messages.

Finally, the impact of emoticons on message interpretation is considered. In F2F communication nonverbal cues can intensify or tone down the verbal emotional expression (Lee & Wagner, 2002). Furthermore, nonverbal cues can augment, illustrate and accentuate the words they accompany (Burgoon, 1994). Streeck and Knapp (1992) notice that communication is embodied and that verbal and nonverbal modalities are inter-organised. In messages where the nonverbal and verbal modalities of emotional expression are contradictory (mixed messages), nonverbal cues can create ambiguity (e.g., Planalp, 1998; Omdahl, 1995; Oatley & Duncan, 1992). Empirical studies are reported that examine whether emoticons in CMC can serve the same functions in message interpretation as nonverbal cues in face-to-face communication.

Overview dissertation

The present dissertation aims to examine the role of emotion in CMC, and specifically the role of emoticons in the communication process. The lack of nonverbal cues in text-based CMC has impact on the quality of the communication process. The central research question of this dissertation is how far emoticons can serve the same functions in online communication as nonverbal cues do in face-to-face communication.

Chapter 2 reviews the literature on the role of emotions in CMC. This chapter is the theoretical base of the dissertation. Obviously, there are some differences between face-to-face communication and CMC, and this review aimed to find out what the consequences of these differences are for the expression of emotion. The lack of nonverbal cues in text-based CMC and the use of emoticons in CMC to add a paralinguistic component to imbue the textual messages is one of the main topics of this chapter.

Chapter 3, empirically examines the influence of social context on the use of emoticons in CMC. This study aims to find out whether social context influence the expression of emotions in the same way in CMC as in regular face-to-face communication. One hundred and fifty eight secondary school students responded to

short Internet chats which varied in social context (task-oriented and socio-emotional) and in valence (positive and negative).

Chapter 4 examines the influence of social context and valence of the message in an online study. This study is conducted among a large adult sample to test the generalization of the results of chapter 3. In addition, the present study also investigates social motives for emoticon use.

Chapter 5 reports two studies on the impact of emoticons on message interpretation. The first experiment was conducted in a behavioural lab with first year psychology students as subjects. The second experiment was conducted in a more natural setting (secondary school). These studies examine if emoticons have the same impact on message interpretation as nonverbal cues in F2F communication. Furthermore, the interpretation of sender's motives for emoticon use was investigated.

The final chapter, chapter 6, contains a general discussion on the findings. The theoretical and practical implications of the results are discussed.

Chapter 2

The role of emotion in computer-mediated communication: A review

;-)

Chapter 2

The role of emotion in computer-mediated communication:

A review[1]

Computer-mediated communication (CMC) has become almost as common as face-to-face (F2F) communication in our daily lives, privately as well as professionally. In this paper we aim to find out how different these modes of communication actually are, and more specifically, what the consequences of these differences are for the expression of emotion. We reviewed studies on differences between CMC and F2F interaction with respect to the expression of emotion. Our conclusion is that, in contrast with earlier studies, we have found no indication that CMC is a cold and impersonal medium. Emotional communication online and offline seems to be surprisingly similar. Apparently, over time people have found satisfying ways to cope with the restrictions of CMC.

In the last decade, we are witnessing an enormous increase in computer-mediated communication (CMC). More and more interactions take place via e-mail and chat, privately as well as professionally. Especially e-mail dominates the office hours of many workers, and makes parts of the work more efficient. In addition, email and chat services also help us to maintain our relationships with friends and colleagues in different locations. When one meets someone interesting in a bar, for example, it is almost as common to exchange e-mail addresses and chat accounts as to exchange phone numbers. Another indication of the increasing use of CMC is the huge success of Internet dating, which makes it possible to get in contact with potential partners, whom you would never have met in daily life. In other words, for most people today it is hard to imagine themselves without a computer and without access to the Internet.

Because computer-based communication has become so common in our daily lives, this raises the question of how different online communication is from face-to-face communication. Do we chat in the same way via computers as in live interactions and, more specifically, do we express our emotions and can we detect others' feelings as easily? There is an increasing number of studies comparing style and content in the two modes of communication, however, the role of emotions in these communication patterns has to date been neglected (for an exception see Manstead, Lea, & Goh, in press). This paper aims to fill this gap and reviews research in face-to-face (F2F) and computer-mediated communication (CMC) with respect to emotion communication. We restrict ourselves here to text-based CMC, as this is still the most common type of CMC and because the difference with actual F2F is assumed to be largest. Although text-based computer-mediated communication has become as obvious as F2F for large groups of people, the two modes of communication differ in important respects. In this paper, we

---

focus on the role of emotions in both modes of communication, as it has been argued that emotions may be differently represented, communicated and recognized through CMC. Indeed, in the past some authors have even argued that CMC is a cold and impersonal medium, where emotions are very difficult to express (e.g., Rice & Love, 1987; Culnan & Markus, 1987; Sproull & Kiesler, 1986), whereas others have stated that there are maybe initial differences between CMC and F2F with respect to emotional communication, but that these tend to be eliminated over time (e.g., Walther, 1992; Walther & Burgoon, 1992; Walther, Anderson, & Park, 1994).

The most important feature of CMC that is relevant when studying the role of emotions (see also McKenna & Bargh, 2000) is its different *sociality* or social presence (Short et al., 1976). There are different dimensions of sociality, however. Manstead Lea and Goh (in press) propose two dimensions; the physical and the social dimension. The physical aspect of sociality refers to the sense of being physically located somewhere, and thus physical co-presence refers to actually being together with someone at the same place. The physical aspect of CMC particularly implies the relative absence of *visibility* in text-based CMC. This may have consequences for the decoding of others' emotions, because we cannot make use of nonverbal emotional cues in order to interpret incoming messages. In addition, this feature may also have consequences for the expression of one's own emotions towards others, because the consequences of one's emotion expressions on others are less visible as well.

The social aspect of sociality refers to the social meaning of the situation and the extent to which the presence of another person is salient. This salience of one's interaction partner and especially the social category to which one's interaction partner belongs would also have consequence for the salience of social norms. According to some authors (e.g., Daft & Lengel, 1986; Lea, O'Shea, Fung, & Spears, 1992; Short, Williams, & Christie, 1976) sociality in CMC is reduced, because of the relative absence of social norms, or social control. On the other hand, researchers embracing a social identity framework, like the Social Identity of Deindivuation Effects (SIDE) model (Lea & Spears, 1991; Reicher, Spears, & Postmes, 1995; Spears & Lea, 1992, 1994), have emphasized the social nature of CMC. They have shown that although text-based CMC may filter out many social cues, some of the most important cues, namely those relating to social category membership, often seep through (Spears, Lea, Cornelisussen, Postmes & Ter Haar, 2002). This implies that social norms are more rather than less salient in CMC than in F2F interactions.

These two differences between CMC and F2F are in our view crucial for understanding and examining emotions in CMC and form the theoretical framework of this paper.

18

In order to gain insight in emotional communication in these different channels, we review the empirical evidence relating to reduced sociality and visibility, by comparing research on emotions in F2F and CMC contexts. We start with the more general issue concerning the occurrence of emotions in CMC and then review evidence that directly compares F2F with CMC interactions. We address the issues of different sociality in CMC and its consequences for the expression of emotion. Furthermore, the implications of the lack of nonverbal cues on emotional expression in CMC are discussed. At some points the distinction between the research disciplines of emotion in face-to-face interaction and CMC is not that sharp in order to find out whether the emotional expression is really that different in CMC than it is in regular face-to-face interaction.

Emotions in CMC

To what extent are emotions communicated to the same degree and in the same way in CMC as in F2F communication? Is CMC used to express emotions at all, and if so, are emotions expressed in a different way? According to some authors (e.g., Rice & Love, 1987), the lack of social and nonverbal cues makes it hard, if not impossible to communicate emotions, and therefore CMC would be perceived as impersonal and should principally be less emotional and more formal than F2F communication. As a consequence, the content of the exchange would be less socio-emotional. There is, however, not much evidence to support this view. The huge success of MSN (Microsoft Network messenger service), internet dating and support lists, suggests that emotions can be shared, for all these Internet interactions require the expression and recognition of emotions. There would be no successful dating, without expressing positive emotions and intimacy, there would be no successful chatting with friends without emotional involvement, and there would be no support for whatever cause without the communication of positive emotions and empathy. In other words, the assumption that CMC can only entail formal and unemotional interactions does not seem justified on the basis of these observations.

Obviously, emotions in CMC are expressed differently, that is, primarily in written verbal form. One aspect of emotion communication in CMC that has been explicitly studied is flaming. Flaming has been defined as the expression of strong opinions, accompanied by the expression of negative, antagonistic emotions in the form of insulting, swearing, offending, or hostile comments (Siegel, Dubrovsky, Kiesler & McGuire, 1986). Although flaming has been considered as a specific consequence of CMC-interactions, various authors have also concluded that flaming is in fact comparatively rare. In the experiments of Siegel et al. (1986) and Kiesler, Zubrow, Moses, and Geller (1985) for example, 'uninhibited remarks' accounted for less than five

percent of all remarks and some studies showed even less or no flaming at all (e.g., Lea et al., 1992; Rice, 1990; Sproull & Kiesler, 1986; Thompson & Ahn, 1992). This slight variation in results is probably due to different operationalizations of flaming. In this respect, it is also important to note that flaming should not be considered similar to emotion expression in general, because it is often defined as an extreme and explicit form of emotion expression in CMC. Therefore the absence of flaming does not necessarily imply that no emotions are expressed, as there may be milder and subtler forms of emotion expressions in the text. To date we know of no research on other forms of verbalized emotion expression in text-based interactions.

In addition to explicitly verbalizing one's emotions by words, there is another common way in which emotions are communicated in CMC, namely by the use of 'emoticons' (emotion icons), or 'relational icons', created with typographical symbols that resemble facial expressions (Walther & D'Addario, 2001). Emoticons are used for several reasons. First, they help to accentuate or emphasize a tone or meaning during message creation and interpretation (Crystal, 2001). Second, they help to establish a current mood or impression of the author (Constantin, Kalyanaraman, Stavrositu, & Wagoner, 2002). Third, emoticons are a creative and visually salient way to add expression to an otherwise strictly text-based form (Crystal, 2001). In terms of the known functional relationships of nonverbal communication, an emoticon may serve the function of clarifying verbal messages (Walther & D'Addario, 2001). Emoticons are used very often, especially in synchronous chat devices such as MSN.

In short, there is no evidence to assume that emotions are absent or even difficult to communicate in CMC. On the contrary, we would argue that emotions are expressed both implicitly and explicitly and that they serve similar important functions in CMC-based interactions, like MSN, Internet dating, or Internet support lists, as in F2F-interactions. However, emotions may still be expressed in a different way, as CMC-based interactions are likely to make more use of explicit and verbal communication of emotions. In addition to verbalizing emotions in the text, emotions are also conveyed through 'emoticons', which can be seen as symbolized short cuts for facial expressions.
The question remains of course, whether this more textual and symbolic rather than facial and bodily expression of emotions in F2F makes a difference and what impact this difference has. For example, emotions may be expressed more or less, or more or less explicitly, or in other forms in CMC, which may lead to less ambiguity, and better recognition. The extent to which such differences may exist and what the implications of these differences are, will be discussed in the following section.

Individuals have the need to talk about and reflect on their emotional experiences. This phenomenon is referred to as social sharing. The urge to share an emotional experience by talking about it is a very general manifestation. It is elicited as soon as an emotion is experienced, whatever the type of emotion (shame being an exception). The more intense the emotion felt, the more we are inclined to talk about the event (Christophe & Rimé, 1997; Rimé, Corsini, & Herbette, 2002; Rimé, 1989; Rimé, Mesquita, Phillipot, & Boca, 1991). Furthermore, sharing may differ depending on the sex of the person . Gender differences in nonverbal behavior are more pronounced in same-sex settings compared with cross-sex contexts (Ariès, 1984; Hall, 1984). For example, social sharing studies conducted by Rimé et al. (1991) have shown that men are much more likely to talk to women (typically their partners) about their feelings, whereas women share their emotions with a wider range of persons, both male and female. This may be due to the fact that women in our society more often occupy roles that require them to be more emotionally expressive, and concerned with their own and others' feeling states than men are (Eagly, 1987; Eagly & Wood, 1991). The expression of positive feeling in particular is believed to be more characteristic of women than of men (Birnbaum, Nosanchuck, & Croll, 1980; Stoppard & Gunn Gruchy, 1993) and this would explain why men in particular seek women as partners with whom they share their intimate feelings.

Once exposed to the social sharing of an emotion, it is very common that receivers in turn share the episode with a third person (Christophe & Rimé, 1997; Rime, Finkenauer, Luminet, Zech, & Philippot, 1998). Thus, whereas we assume confidence of the persons with whom we share our emotions, they share it with others in most cases (Christophe & Rimé, 1997), and thus the anonymity of the source is not guaranteed at all. Interestingly, the intensity of the event is related to the way in which emotions are shared. Christophe and Rimé (1997) had subjects recall a situation in which someone shared an emotional episode with them, resembling one from a list of 20 events. The list included low, moderate and high intensity emotional events. They were instructed to briefly describe a similar situation that someone had shared with them and to answer open questions regarding their nonverbal displays, verbal responses and interpersonal gestures. The results showed that when highly intense emotions are shared, listeners reported to talk less, to de-dramatize their response less, and to manifest more nonverbal comforting behaviors. This suggests that actually sharing intense emotions can decrease the physical distance between interactants. Further, the sharing of emotions has also the function to improve interpersonal relationships and social integration. In a meta-analytic review, Collins and Miller (1994) indeed found that people who engage in intimate disclosures tend to be liked more than those who disclose less. Thus, sharing

emotions with people other than our intimates is a useful tool to bond and to strengthen social relationships. Additionally, disclosing emotions is seen as healthy and good for one's well-being (Pennebaker, 1997; Zech, 1999).

Self-disclosure and social sharing of emotions do not appear to be phenomena that are restricted to F2F interactions, however. An example of online self-disclosure and emotion communication is the huge success of MSN, a chat program through which one interacts instantly with peers. This program creates an interface in which you can form a buddy list, consisting of people you regularly chat with. All over the world people are connected to each other. It is an easy way to stay in touch with friends and family abroad but also to meet new people. One advantage of this way of interacting is that one has the opportunity to try out new personality aspects that one would ideally like to possess. Furthermore, the Internet provides opportunities for those who have difficulty verbally expressing themselves in a F2F situation. In CMC they can express themselves without constraints, taking as much time as they want (McKenna & Bargh, 1999).

Another example of people's online self-disclosure and social sharing of emotion is in a more formal setting. In addition to the many support groups there are also some computer-mediated therapies available. Patients who are afraid to seek F2F therapy, because of anxiety or stigmatization, or people with restricted mobility may be reached by these initiatives. One of these computer-mediated therapies is Interapy, the treatment of for example posttraumatic stress through the Internet (Lange, van de Ven, Schrieken, & Emmelkamp, 2001). The advantage of Internet-mediated therapy is that therapists can provide feedback via a computer, tailored to their clients' needs (Lange, van de Ven, & Schrieken, 2003). Additionally, some people prefer to reveal their innermost thoughts and feelings to a computer-screen than to a real person (e.g., Miller & Gergen, 1998; Postmes, 1997). The Interapy treatment consists of 10 writing sessions during a period of 5 weeks, and two 45 minute sessions a week on which the therapist gives feedback. The presence of a virtual therapist does not seem to block the success of the treatment. On the contrary, it seems to contribute to the success of the therapy. Lange, Rietdijk, Hudcovicova, van de Ven, Schrieken and Emmelkamp (2003) found effect sizes that are considerably larger in a sample of non-student clients in Interapy than those found in F2F experiments (Schoutrop, 2000; Smyth, 1998).

There are also gender differences in online sharing and self-disclosing, similar to the gender differences found in F2F. Various studies have examined the variation in language use in different gender settings. . Savicki (1996) for example, analyzed messages of Internet discussion groups and found that groups dominated by females tend to self-disclose and avoid or attempt to reduce tension, whereas discussion groups dominated by men, tend to use more impersonal, fact-oriented language. This suggests that women are more emotionally expressive than men, at least in same-sex groups, and

with regard to positive emotions. Indeed, Savicki and Kelley (2000) found that women in female-only groups had a more emotional style because of their frequent and explicit self-disclosure, the use of "I" statements and by directly addressing their messages to other group members. On the other hand, men in male-only groups ignored these socio-emotional aspects of group functioning, and they were less satisfied with the CMC experience. Mixed gender groups fell between these two groups and equally reflected both communication styles (Savicki & Kelley, 2000). Similar results were reported by Herring (2000) who found that women are "more likely to thank, appreciate and apologize, and to be upset by violations of politeness", whereas men seem less concerned with politeness and sometimes violate expected online conduct. These differences in language style are in line with F2F differences in gender style (see e.g., Fischer, in press), which have shown that – although dependent upon the context – women generally seem to be concerned more with expressing positive feelings and avoiding negative affect than are men.

Not all studies show this traditional sex difference, however (e.g., Lee, 2003; Rodino, 1997). Huffaker and Calvert (2005) for example studied blogs and concluded that men used more active, inflexible and resolute language than women, but women did not use more passive, cooperative and accommodating language. They think that this equal use of passive, cooperative and accommodating language by men and women may be due to the fact that women who create blogs may be less traditional in their gender roles than the general, offline female population (Huffaker & Calvert, 2005). In conclusion, there is abundant evidence that people engage in online sharing of emotions in CMC. Moreover, the studies on online social sharing, chatting and engaging in therapy suggest that the different social context of CMC creates , the sociality of CMC , a 'safe' environment to share emotions and to facilitate self-disclosure (see also McKenna & Bargh, 1999, 2000; McKenna, Green, & Gleason, 2002). Virtual rather than actual presence reduces the risk of ridicule or of outright rejection by family or friends (McKenna et al., 2002). Moreover, it seems easier to find similar others sharing specific interests, and it is more convenient to share emotions with these others, resulting in the development of close and intimate relationships in CMC. Thus CMC seems to reinforce rather than reduce the communication of emotions, but gender differences that have been found in online communication style generally follow the patterns found in F2F interactions.

Expression of emotion in F2F and CMC

Socially sharing one's emotions and seeking support for one's point of view is different from expressing emotions directly to the object of one's feelings. The next question is

thus whether the expression of emotions is also different and relatively easier in CMC. Would the relative 'safe' environment reinforce the more explicit or overt expression of emotions? And, how important are social cues for the expression or inhibition of emotions?

We have argued that sociality not only implies a physical, but also a social dimension. In support of this idea, Fridlund (1991) has shown that situations in which others are imaginary present (implicit sociality), lead to more smiling, compared to situations in which people are alone. In the same line of reasoning, others have shown that in addition to the social or physical presence of the other person, the identity of the interaction partner, and one's power relation with this partner affect the amount of emotion expression (see Hess, Banse, & Kappas, 1995; Jakobs, Manstead, & Fischer, 2001; Fischer, Manstead, & Zaalberg, 2004; Parkinson, Fischer, & Manstead, 2005; Tiedens & Leach, 2004). One explanation for this phenomenon is that different social contexts may elicit different display rules, and prescribe which emotions are appropriate to display (not crying when your computer breaks down at work, smiling when your friend is showing her new-born baby, etc.). Not only the type of situation, however, but especially the presence or absence of others, and your relationship with those others makes a difference, because these contexts may elicit different social motives (Fridlund, 1991; Zaalberg, Manstead, & Fischer, 2004). According to Fridlund high sociality contexts are situations where others, preferably friends, are physically present, and these contexts elicit strong motives to communicate (see Chovil, 1991). . In low sociality contexts on the other hand, is the motivation to engage in communication would be less (e.g., Hess, Banse, & Kappas, 1995; Wagner & Smith, 1991). This conclusion, however, specifically applies to the expression of positive emotions.

When considering crying, for example, research has shown that people mostly cry when alone (Becht & Vingerhoets, 2002), or when they are with an intimate. This has also been supported by an experimental study in which sadness was evoked in different social contexts, testing Fridlund's theory for negative emotion expressions. The results showed that participants show most intense sad faces in the alone condition, and smile more in the social conditions (Jakobs, Manstead, & Fischer, 2001). This is probably due to the operation of a display rule that prohibits public crying in response to a film shown in a lab.

Low sociality may also enhance emotion expression, however. Evers, Fischer, Rodriquez Mosquera and Manstead (2005) conducted an experiment in which participants had to express their anger by allocating hot sauce to the person who angered them. They manipulated the social context by creating a social condition in which participants were led to believe that they would meet the person who made them angry, and a nonsocial condition, in which participants thought they would never meet the person who made

24

them angry. We must note that in the nonsocial condition there is also no accountability for the anger expression. The results showed that in the nonsocial (anonymous) condition men and women did not differ in their anger expression. In the social condition, however, women allocated less hot sauce than men did. Apparently, it was easier for women to express negative emotions in an anonymous context, so that they did not need to worry about the negative social implications of their anger expression. Women in particular seem to be sensitive for potential negative consequences of their anger expression. One possible explanation is that men and women learn different display rules for the expression of emotion, and from their childhood onwards the emotional reactions of boys and girls are evaluated and reacted to in different ways (e.g., Brody, 1985; Fabes & Martin, 1991; Wallbott, 1988). Therefore, men and women appraise the effects of their own emotions on others differently. These so-called 'social appraisals' are more likely to play an important role when others are present than absent (see also Buck, Losow, Murphy & Constanzo, 1992).

As may be evident from these studies, the identity of the interaction partner and the relationship between interactants is of significant influence in an interpersonal setting (Wagner & Lee, 1999). When the other person is a friend, facial expression is more likely to increase, but when the other person is a stranger, expression generally tends to decrease (e.g., Buck, Losow, Murphy, & Constanzo, 1992; Wagner & Smith, 1991), basically because it is not appropriate to show intense feelings to strangers.

In short, social context factors influence emotion expression through the activation of various social motives or display rules. This may enhance the display of positive emotions, and inhibit negative emotions, at least when the emotion is considered inappropriate or when it reflects a negative impression of oneself. How can we extend these findings to emotion communication in CMC, and specifically, are there reasons to expect that the operation of social motives and display rules is reduced or increased online?

Jessup, Connolly, and Tansik (1990) conducted three experiments which all found support for the idea that when group members interact anonymously, they tend to be more critical, more inquisitive than when each individual's contribution is identified. Further, Siegel and colleagues (1986) conducted a series of experiments to examine the prevalence of what they defined as uninhibited behavior in CMC. They compared computer conferencing, email and F2F communication. Participants had to participate in discussions about choice-dilemma problems and were required to reach consensus within twenty minutes. In the first experiment F2F (seated at a table in an office or classroom) and synchronous CMC was compared under conditions of personal anonymity or identifiability (in this condition they added names to their messages). In the computer-linked conditions, subjects were separated physically, and each used a computer terminal

with keyboard. The subjects used an interactive software program for online synchronous communication. The content of the transcripts was analyzed. The results showed that uninhibited remarks or flaming, like name-calling, swearing and insults, appeared more frequently in the anonymous CMC group, almost four times more than in the identifiable CMC conditions, whereas no negative remarks were made in the F2F groups. In the second experiment, they compared synchronous computer conferencing with asynchronous, sequential, computer conferencing. Flaming occurred in an equal amount in both conditions. In the third experiment simultaneous computer conferencing and email were compared with F2Fcommunication. In contrast to the first experiment flaming was observed in all three conditions and there were no significant differences between conditions (Siegel et al., 1986).

The hypothesis tested in this research (Siegel et al., 1986) is that CMC makes social norms less salient, which would result in more negative emotion expression, in the form of insults or negative remarks directed at one's interaction partner. Although the first experiment supported this idea, the other experiments show equal amounts of negative emotion expression across conditions, irrespective of anonymity or visibility. An alternative explanation is that it is not the anonymity as such, but rather the norms and values associated with being online that may promote uninhibited behaviors such as flaming (Lea et al., 1992). This idea was tested in a study by Orenga Castellá, Zornoza Abad, Prieto Alonso and Peiró Silla (2000), who randomly assigned subjects to three different communication channels conditions (CMC, F2F, and videoconferencing). Subjects had to execute a rank-ordering problem with a definite solution. There was no time limit to fulfill the task. The results showed that negative emotion expression appeared more often in CMC than in F2F and videoconferencing, suggesting that it is the lack of visible cues that may reinforce an experience of anonymity and explain the results. If flaming would have been mainly promoted by interacting via a computer, the videoconferencing group should show more negative emotion expressions than the F2F group and less than CMC, and this was not the case (Orenga Castellá et al., 2000).

Research has shown, albeit from different theoretical perspectives, that conditions associated with CMC (such as anonymity) may undermine and enhance power differentials (Spears et al., 2002). From a SIDE perspective it is noticed that CMC provides a medium for communicating social support and therefore providing means to communicate and coordinate social resistance towards a powerful outgroup (Spears et al., 2002; Reicher, Levine, & Gordijn, 1998). Spears et al. (2002) showed that CMC can be responsible for strategic resistance effects and, remarkably, this effect was stronger than any support that was communicated via visual channels (Reicher et al., 1998) as visibility had no strategic effect. In conclusion this research shows that the relatively

anonymous context of CMC rather than the visibility in F2F is a more effective means of communicating social support.

Absence of physical presence and the lack of nonverbal cues

The previously reported studies suggest that the lack of visibility may have several consequences for negative emotion expressions, for example because it can make one less aware of potential implications of one's actions. We have also seen that the lack of visual cues can be an advantage in communicating social support (Spears et al., 2002). Lack of visibility implies a lack of nonverbal cues in CMC. Nonverbal behavior reveals a person's feelings without words through facial expressions, body language or vocal cues (Brehm, Kassin & Fein, 1999). Other nonverbal cues (e.g., physical appearance) can also influence social perception, enabling us to make quick judgments of others (Ambady & Rosenthal, 1993).

The lack of nonverbal cues implies that some information will not be fully transferred. (McKenna & Bargh, 2000). When these nonverbal cues are not available, it is inferred that the messages typically conveyed by them do not occur (e.g. Burgoon & Saine, 1978; Shaw, 1981; Walther, 1995). This difference between CMC and other forms of communication – unmediated, telephonic, and video conferencing - is often seen as the determinant of different social effects of these media and have been at the root of several theories about the effects of CMC (Walther & Tidwell, 1995).

In general we may assume that nonverbal cues have similar social functions in CMC and F2F. One function of displaying nonverbal cues is that the ambiguity of the intended emotion expression is reduced. For example, a message may have a different meaning when accompanied by a smile or a frown. When e-mail first became popular for example, messages were often misinterpreted—especially when the writer was trying to be funny—because it lacked the nonverbal cues that normally animate and clarify live interactions (Sanderson, 1993).

Second, nonverbal cues may intensify or tone down the emotion expression (Lee & Wagner, 2002). Mere words may not be able to carry all the emotional information that someone wants to convey. Sasaki and Ohbuchi (1999) compared emotional interaction in CMC and vocal F2F communication. Participants had to interact with a confederate in two hypothetical conflict situations in which the participant had to accept an unreasonable request by the confederate. They interacted either in CMC or through a vocal intercom system, so they never saw each other during the conversation. In the vocal condition the confederate's voice was manipulated to produce either a positive or a negative tone. After the sessions the participants had to rate which emotions they experienced during the interactions and which intentions the confederate had (positive or negative). The

results showed that emotions were as intensely and easily evoked in CMC as through vocal communication. In the vocal condition, however, angry emotions and perceived negative intents prompted aggressive responses, while these effects were absent in CMC (Sasaki & Ohbuchi, 1999). These results may suggest that the presence of nonverbal cues, in this case, an angry tone, strengthens the verbal anger effects, leading to more aggression.

A third consequence of the lack of nonverbal cues is the absence of mimicry, that is, the imitation of another person's nonverbal gestures, face, or posture. Recent research (e.g., Van Baaren, Maddux, Chartrand, de Bouter, & van Knippenberg, 2003; Stel, 2005; Dimberg & Lundquist; 1990; Gump & Kulik, 1997; Hatfield, Cacioppo, Rapson, 1992; Hess, Adams, & Kleck, 2004, 2005; Lundquist & Dimberg, 1995) has shown that people mimic others' faces, gestures and postures, even in response to photos displaying facial expressions. Moreover, the mimicry of nonverbal gestures has shown that this especially occurs when you like someone or feel empathy with someone (e.g., Sonnby-Borgström, 2002). In other words, friends mimic each other more than do strangers. Jakobs, Manstead and Fischer (1999)'s results from a study on social context effects on smiling confirmed this idea. They manipulated the identity of the interaction partner, friend versus stranger, and the communication channel, tape-recorder versus telephone and F2F. No effects of communication channel on smiling towards strangers were found. For friends, however, a significant increase in smiling was shown in the F2F condition. The strong effects of physical presence of another person – rather than effects of implicit presence – also suggest the operation of mimicry. Moreover, research has also shown that the effect is bidirectional: more mimicry leads to more liking, but more liking also results in more mimicry.

Mimicry, however, is impossible via text-based CMC, and therefore cannot play a role in computer-based interactions, whether you interact with friends or strangers. This raises the question of whether it would be more difficult to create intimate bonds during CMC interactions. In order to examine the effects of CMC interaction on the development of close relationships, Walther (1995) had uninformed coders rate videotapes of F2F groups and transcripts of CMC groups on members' relational communication. There were no time restrictions for both groups. The coders rated the transcripts as well as the videotapes, including the nonverbal behavior, on immediacy/affection, similarity/depth, composure/relaxation, formality, dominance, receptivity/trust, and task/social orientation. The results showed that CMC groups were rated as significantly more positive on several dimensions of intimacy, as well as on social (vs. task) orientation than F2F groups. In addition, CMC groups never expressed less intimacy or more task orientation than F2F groups. In other words, the computer mediated groups outperformed, interpersonally speaking, the F2F groups (Walther, 1995).

This supports Walther's (1992; Walther & Burgoon, 1992) social information processing (SIP) theory that states that despite initial differences in relational and social communication between CMC and F2F communication, these differences tend to disappear over time. This is in line with the finding that in field studies, in which user interaction time is not constrained, higher levels of socio-emotional content have been found in CMC compared to laboratory research (e.g., Rice & Love, 1987; Steinfield, 1986). Walther and Burgoon conclude that the effects of time on the development of relational bonds are stronger than the effects of the medium in general. When CMC and F2F groups are allowed to continue over time and accumulate numerous messages, this continuity has significant effects on groups' relational communication.

There is no evidence therefore that the absence of visible cues restricts individuals' capability to exchange individuating information, as CMC interactants are just as motivated to reduce interpersonal uncertainty, to form impressions, and to develop affinity in computer-mediated environments, as interactants in other settings (Walther & Burgoon, 1992).

The use of emoticons and other nonverbal cues

Although nonverbal cues are strictly speaking absent in text-based CMC, there may nonetheless be non-textual information available, for example in the form of emoticons, which serve similar functions as facial expressions (e.g., Derks, Bos & von Grumbkow, in press; Ekman & Friesen, 1969; Harrison, 1973). Since emoticons may serve as nonverbal surrogates, suggestive of facial expression, they may add a paralinguistic component to a message. Emoticons may thus enhance the exchange of emotional information by providing additional social cues beyond what is found in the text of a message (Thompson & Foulger, 1996). CMC users often incorporate emoticons as visual cues to augment the meaning of textual electronic messages (Rezabek & Cochenour, 1998). The fact that emoticons are used implies that individuals at least feel the need to express some of their emotions with short symbols rather than text. In an experiment by Rivera, Cooke and Bauhs (1996) subjects participated in a simulated remote CMC session. The subjects believed that they were interacting with three other group members, but the comments of these other group members were simulated. Half of the group had access to six emoticon buttons for their use, but the use of these emoticon buttons was optional. All subjects had to complete two different decision-making tasks: a selection task and a survival task. The results indicated that subjects used emoticons when available. Additionally, the subjects who used emoticons were more satisfied with the system than subjects who had no access to emoticons.

Various authors have also suggested that women's larger display of emotions could be reflected in a more frequent use of emoticons (Lee, 2003; Witmer & Katzman, 1997). Wolf (2000) demonstrated, however, that there are only subtle gender differences in emoticon use. Women do not seem to use more emoticons, but they do use them in other ways. As in real life, women tend to use emoticons more frequently to communicate humor of solidarity, whereas men use them to display sarcasm (Wolf, 2000). Another interesting finding of this study lies in the pattern of change that develops for both genders when moving from a male-only or female-only to a mixed group. Rather than women adopting "the offline male standard of *less* emotional expression, the opposite occurs: both males and females display an increase in emoticon use" (Wolf, 2000, p. 831). Some other studies even suggest that women use fewer emoticons than men. Huffaker and Calvert (2005) analysed emoticons in men's and women's blogs, and found that males posted more emoticons than did females. The overall heavy use of emoticons in weblogs suggests that they are prevalent in online interactions (Huffaker et al., 2005).

We may argue that, like in nonverbal displays in F2F interactions, the use of emoticons seems to depend on the social context in which the interaction takes place. Lee (2003) for example, examined gender differences in instant messaging and showed that men rarely use emoticons in conversation with other men, and use more emoticons when interacting with women. For women there is no difference in the use of emoticons in relation to their interaction partner: they use the same number of emoticons in conversing with men than with other women (Lee, 2003). Derks, Bos and von Grumbkow (in press) presented short Internet chats to the participants. These chats varied in kind of social context, either task-oriented or socio-emotional, and in the valence of the context (positive or negative). The subjects were asked to respond to the chats. They were free to react by text, by picking an emoticon, or by a combination of text and an emoticon. Results showed that participants used more emoticons in socio-emotional contexts than in task-oriented contexts. Furthermore, participants also seemed to tune the emoticons upon the situation. In positive contexts they used more positive emoticons and in negative contexts they used more negative emoticons. In negative, task-oriented contexts, participants used the least number of emoticons. An emoticon is apparently not sufficient in a negative situation and more communication is needed to solve a problem. In negative situations people have to be more accurate, have more explaining to do, and if possible, present alternatives, where in positive situations a smile to approve can be sufficient. No differences between men and women were found (Derks et al., in press). These scarce studies suggest that emoticons are regularly used and function as emblems for people's feelings, in a similar way as nonverbal behaviors. Emoticons may be used to

emphasize or clarify one's feelings, but also to soften one's negative tone and to regulate the interaction, just as smiles and frowns do in daily life.

There is still one important difference, however, between the use of emoticons and actual nonverbal displays. Relative to nonverbal signals in F2F interactions, emoticons can be considered more deliberate and voluntary. Although it is conceivable that emoticons could become habitual and more unconscious over time, it is still unclear when emoticons are used, how they are interpreted, and processed, and what their effects are in different emotional contexts (see also Walther & D'Addario, 2001). The use of emoticons, therefore, does not necessarily tell us that individuals experience an emotion, as it only conveys the intentions and motives of the person using the emoticon.

Conclusion

In this paper we reviewed research regarding potential differences between CMC and F2F interaction with respect to the communication of emotion. Our conclusion is that emotions are abundant in CMC, and there is no indication that CMC is an impersonal medium. This can first of all be inferred from the success of MSN, the presence of blogs and support lists, and the success of online therapy, in all of which emotions about a variety of personal experiences and problems are shared. The analyses of these messages, although not always focused on the communication or expression of specific emotions, clearly show that emotions are communicated, whether more implicitly or more explicitly.

Studies in which CMC has been compared with other communication channels all show that CMC is not characterized by a lack of emotions, on the contrary, they suggest that positive emotions are expressed to the same extent as in F2F interactions, and that more intense negative emotions are even expressed more overtly in CMC.

The relative ease and frequency with which both positive and negative emotions seem to be expressed in CMC can be explained in terms of the greater anonymity and the safer environment that CMC creates. We have argued that CMC is especially likely to reduce negative social appraisals (Manstead & Fischer, 2001) both with regard to negative and positive emotion expressions. Negative social appraisals indicate that people are aware of and pay attention to the potential negative consequences of their emotional reactions. As studies by Evers and colleagues (2005) and Fridlund (1991, 1994) have shown, the absence or presence of others in F2F interactions has an impact on the way in which we regulate our emotions. We downplay our anger or sadness when we expect negative consequences from the expression of these emotions, especially in situations in which others are present or in which we expect we have to deal with others. The absence of

visible others in more or less anonymous interactions in CMC is therefore assumed to lead to fewer negative appraisals and thus to more overt and explicit negative emotions expression. On the other hand, the relative absence of negative appraisals may also result in greater intimacy and closeness, because interactants may be less concerned with the impression they make on others, or with vulnerability they might display. Thus, CMC may indeed create a safer communication context (e.g., McKenna et al., 2002) than many F2F-contexts do.

In conclusion, we argue that emotions can be found as frequently online as offline. Apparently, people have found ways to cope with the restrictions of CMC, for example by the use of emoticons, or by verbalizing emotions in a more explicit way. Given the fact that various studies have shown that people are highly satisfied with online communication, we may conclude that people not only express, share and communicate emotions, but also do this in a way that pleases them. We are able to give support, to express our dissatisfaction, to show our fears and to convey our love towards others, whether friends or strangers. This brings us to the remaining question of how different emotional communication in CMC and F2F actually is.

The first most obvious difference between online and offline emotion communication is the absence of emotional embodiment. We can have our own emotional and bodily experiences in reaction towards messages from others, but we may generally assume that these reactions are less intense than when we are confronted with actual persons and situations. Moreover, the fact that we cannot touch, hold or hit others also implies that parts of the emotional impulses are simply inhibited by this medium. This also may lead to a decrease of the intensity of the emotional experience. In other words, we would argue that emotional experiences in reaction to online others may have the same quality, but have a lower intensity and probably duration than in F2F situations. Research is needed to investigate this issue further.

A second, related difference between F2F and CMC is the greater controllability of our emotional reactions online. On the contrary, one of the features that have traditionally been conceived of as distinctive of emotion, is its uncontrollable or impulsive nature. Indeed, many traditional theories in both psychology and philosophy have emphasized the irrational and passionate nature of emotions (see e.g., Calhoun & Solomon, 1984). This impulsive nature refers to the fact that emotions are often experienced as hard to control. Moreover, once elicited emotions have the tendency to be overwhelming and to control all thoughts or actions that contradict the emotional tendency. Frijda (1986) has referred to this phenomenon as 'control precedence'. Interestingly, more recent theorizing and research has focussed on the cognitive, and more rational basis of emotions (see e.g., Scherer, Johnstone, & Schorr, 2001). In these views, emotions are the natural consequence of appraising the event in a specific way.

Moreover, research on emotion regulation (e.g. Gross & Levenson, 1995, Gross & John, 2003) has focussed on the consequences of different kinds of emotion regulation, and not on whether or to what extent individuals are able to control their emotions.

One of the characteristics of CMC is its reduced spontaneity. We expect one to have more control over the expression of emotion in CMC, because there often is a time-lag and there is therefore room to choose to what extent and how you want to show your emotions to your interaction partner. As messages have to be typed, there is time to think, reflect and the possibility to read them over and change them before sending. CMC may therefore inhibit one's impulses and lead to more controlled emotion expressions. And, finally, because of the invisibility of your interaction partner, there is no risk of the other noticing your unconsciously leaking nonverbal emotional expressions. We may therefore hypothesize that emotions can be regulated easier in CMC than in F2F, which would imply fewer emotional outbursts. There is no research – to our knowledge – that has examined this issue of emotional control.

All this taken into consideration, we conclude that emotional communication online and in F2F are surprisingly similar and that online communication even seems to reinforce rather than inhibit the expression of emotions. We seem to survive pretty well in our social interactions and accompanying emotional expressions in CMC. We cope with the restrictions by adapting to the restrictions posed by online conversations, we accept that there is more time needed to transfer the same amount of information than in F2F communication, and we fill our conversational gaps with emoticons. All this does not lead to emotionally poor interactions, on the contrary: CMC is crammed with emotions.

Chapter 3

Emoticons and social interaction on the Internet: The importance of social context

Chapter 3

Emoticons and social interaction on the Internet:

The importance of social context[1]

The present study examines the influence of social context on the use of emoticons in internet communication. Secondary school students (*N* = 158) responded to short internet chats. Social context (task-oriented vs. socio-emotional) and valence of the context (positive vs. negative) were manipulated in these chats. Participants were permitted to respond with text, emoticon or a combination of both. Results showed that participants used more emoticons in socio-emotional than in task-oriented social contexts. Furthermore, students used more positive emoticons in positive contexts and more negative emoticons in negative contexts. An interaction was found between valence and kind of context; in negative, task-oriented contexts subjects used the least emoticons. Results are related to research about the expression of emotions in face-to-face interaction.

This research investigates the use of emoticons (emotion icons) in social interaction on the Internet. In particular, it is examined to what extent the use of emoticons depends on social context. There is not much research conducted in this field so far and it is not clear if social context influences the expression of emotions in the same way in computer mediated communication (CMC) as in regular face-to-face communication. Fischer (2004) assumes that expressing emotions in CMC is different from face-to-face communication for two reasons. First because CMC is slower and less spontaneous, as all other information exchange has to be typed, and second because an important aspect, the nonverbal part, of the emotional information is not available.

Nonverbal behavior in face-to-face communication may serve different functions. Three basic functions are: (a) providing information; (b) regulating interaction; and (c) expressing intimacy (e.g., Ekman and Friesen, 1969; Harrison, 1973). We assume that emoticons can, at least partially, serve the same functions in CMC. Since emoticons may serve as nonverbal surrogates, suggestive of facial expression, they may add a paralinguistic component to a message. Emoticons may thus enhance the exchange of social information by providing additional social cues beyond what is found in the text of a message (Thompson & Foulger, 1996). CMC users often incorporate emoticons as visual cues to augment the meaning of textual electronic messages (Rezabek & Cochenour, 1998). Therefore they may improve the communication. The fact that emoticons are used, implies that individuals at least feel the need to express some of their emotions with short symbols rather than text (Fischer, 2004).

It is often assumed that computer mediated communication is less social because of the lack of social cues (e.g., Rutter, 1987; Kiesler, Siegel, & McGuire, 1984). There are

---

[1] This chapter was published as Derks, D., Bos, A. E. R., & von Grumbkow, J. (2007). Emoticons and social interaction on the Internet: The importance of social context. *Computers in Human Behavior. 23,* 842-849.

various approaches that focus on the consequences of a socially poor environment. The *cuelessness model*, for example, states that cuelessness is simply the aggregate number of social cues available to the subjects: 'the fewer the social cues, the greater the cuelessness' (Rutter & Stephenson, 1979). In this framework CMC must be regarded as relatively cueless. Cuelessness can lead to psychological distance (Rutter, 1987). Psychological distance is conceptually comparable with social presence, the salience of another person in an interaction (Short, Williams, & Christie, 1976). As CMC filters out the nonverbal channels, channels that are generally rich in interpersonal information, social presence should be lower. This in turn can lead to task-oriented and more impersonal content (Walther, Anderson & Park, 1994). Sproull and Kiesler (1986) delineate, in their *'cues-filtered out' approach*, the differences between face-to-face communication and CMC as having to do with the lack of social context cues in CMC. In face-to-face communication these cues are conveyed by aspects of the physical environment and actor's nonverbal behavior. In CMC, without such nonverbal cues, these effects are said to be absent. This can have certain consequences, like excited and uninhibited communication, such as flaming and more extreme and more risky decisions in comparison with face-to-face communication (e.g. Kiesler, Siegel, & McGuire, 1984; Siegel, Dubrovsky, Kiesler, & McGuire, 1986; Sproull & Kiesler, 1986). An alternative for this 'cues-filtered out' approach is the *Social Information Processing (SIP) model* formulated by Walther (1992). He argues that the limited bandwidth of CMC forces social information into a single linguistic channel that retards impression formation relative to face-to-face interaction. This in turn leads to more impersonal communication and negative evaluations of others in CMC relative to face-to-face communication.

In conclusion, these theories state that as bandwidth narrows, media allow less social presence and create more psychological distance and, as a consequence, communication is likely to be described as less friendly, less emotional or impersonal and more serious or task-oriented (Rice & Love, 1987). Despite these limitations, users have found ways to achieve socially oriented communication through it. Sometimes, CMC is even used for explicitly social purposes (McCornick & McCornick, 1992). Users seem to overcome these limitations by a variety of means, including their interpretation of natural language, questions and disclosures (Tidwell & Walther, 2000), attention to chronemic cues (Walther & Tidwell, 1995) and other devices. Another way in which people can imbue their messages with social meaning is through the use of emoticons (Walther & D'Addario, 2001)

Emotional expression, as it happens at a certain place in the interaction, is a function of underlying emotions and display rules specifying what expressions are socially appropriate in a given situation. Emotional expression is thus understood as not exclusively a consequence of internal emotions, but as determined equally from internal

emotions and manifestation rules (Fussell, 2002). The rules can vary specifically according to roles, gender, situation and (sub)culture. It is common knowledge that women are generally more emotionally expressive than men (e.g., Timmers, Fischer, & Manstead, 1998) And, it is more appropriate to express emotions in a socio-emotional context than in a task-oriented context. Furthermore, research of Wagner and Lee (1999) shows that the frequency of nonverbal emotions in face-to-face interaction increases when the interaction partner was considered to be a friend. Thus, in this line of reasoning, it is to be expected that people use more emoticons in socio-emotional contexts than in task-oriented contexts. We expect a main effect from the kind of social context (socio-emotional vs. task-oriented) on the frequency of emoticon use in such a way that subjects use more emoticons in social-emotional contexts in comparison with task-oriented contexts (Hypothesis 1).

Research from Lee and Wagner (2002) shows that people express more emotions in positive social contexts than in negative social contexts. In accordance with this line of reasoning, we expect a main effect of valence of the context (positive vs. negative) on the frequency of emoticons (Hypothesis 2).

As mentioned earlier, emotional expression in face-to-face communication is determined equally from internal emotions and manifestation rules (Fussell, 2002). These rules can vary according contexts and situations. Taken together the first to hypotheses, it is assumed that in negative, task-oriented contexts, people do not feel much need to express their emotions. We hypothesize an interaction effect between the kind of context en the valence of the context on the frequency of emoticons. We expect that subjects use the least emoticons in negative, task-oriented contexts (in comparison with all other contexts) (Hypothesis 3).

Emotions are elicited by situations (Fussell, 2002) and people adjust the expression of emotions to the social context. Within the scope of our research this means that the frequency of positive emoticons is the highest in positive contexts and the frequency of negative emoticons is the highest in negative contexts (Hypothesis 4).

Method

Subjects

158 secondary school students, 67 males and 90 females, individually participated in this research on a voluntary basis. The mean age was 16.5 years old (*SD* = 1.02), 67 males and 90 females participated. From one student the gender was unknown.

Procedure and Questionnaire

The researcher approached the students during breaks and free periods, with the request to participate in this research. Participants received a questionnaire, which they filled out individually. This took approximately 15 minutes of their time. As a reward for participating we raffled of some film vouchers.

Independent variables

Short Internet chats were presented to the respondents. The chats varied in the kind of social context (task-oriented vs. socio-emotional) and in the valence of social context (positive vs. negative). The subject of the chat in the task-oriented context was the division of tasks in an important school project with a classmate. In the socio-emotional context the subject was to brainstorm with a friend about a present for a mutual friend. Both contexts were converted into a positive and a negative setting. Subjects participated in only one condition. This results in a 2 (kind of social context: socio-emotional vs. task-oriented) x 2 (valence of social context: positive vs. negative) between subjects design.

Dependent variables

The respondents were asked to respond to every chat. They were permitted to react by text, by picking an emoticon from a list of six selected emoticons, or by a combination of text and an emoticon from the list. These six emoticons (smile, big smile, sad, cool, wink and devil) were selected because they were the most used emoticons in a pilot study. Dependent variables of this study were the frequency of emoticons and the valence of the used emoticons. The subjects were completely free to use emoticons and were not stimulated to use emoticons.

Results

A 2 (kind of social context: socio-emotional vs. task-oriented) x 2 (valence of social context: positive vs. negative) ANOVA on type of reaction was conducted, to test the first three hypotheses. There was a main effect of kind of context $F(1, 158) = 6.47$, $p = .01$. Subjects reacted significantly more often with an emoticon in socio-emotional contexts ($M = .66$, $SE = .06$) than in task-oriented contexts ($M = .47$, $SE = .05$). Thus, Hypothesis 1 was confirmed.

There was no significant main effect of valence of social context, $F(1, 158) = .01$. In positive contexts subjects used as much emoticons ($M = .56$, $SE = .05$) as in negative contexts ($M = .56$, $SE = .06$). This means that hypothesis 2 was not confirmed.

Results showed a significant interaction effect between kind of social context and valence of social context $F(1, 158) = 5.84$, $p < .05$. In negative, task-oriented contexts subjects indeed used the least emoticons ($M = .37$, $SE = .08$), and in negative, socio-emotional contexts subjects used most emoticons ($M = .76$, $SE = .08$). In positive contexts, there was not much difference between socio-emotional ($M = .55$, $SE = .08$) and task-oriented social contexts ($M = .56$, $SE = .07$). Hypothesis 3 was confirmed.

To test hypothesis 4, a chi square analysis was conducted on the frequency of positive and negative emoticons within negative and positive social contexts. Hypothesis 4 was confirmed: in positive contexts subjects used mainly positive emoticons and in negative contexts mainly negative emoticons, $\chi^2(1) = 45.41$, $p < .01$ (see Table 1).

Table 1.

Frequency of emoticons (positive, negative) in positive en negative contexts.

		Valence emoticon		
		Positive	Negative	Total
Valence context	Positive	49	2	51
	Negative	12	29	41
Total		61	31	92

Discussion

The use of emoticons is a relatively new topic in the field of social psychology and new interaction media. Not much experimental studies are conducted yet. This study contributes to a new line of experimental field research on the expression of emotions and the use of emoticons on the Internet.

The present study about emoticon use shows interesting results. It confirms that people use more emoticons in socio-emotional contexts than in task-oriented contexts (Hypothesis 1). This is possibly related to the social norms in our society. It is more appropriate to show one's emotions and feelings towards friends than towards colleagues. These results seem therefore in line with the display rules in face-to-face communication, as mentioned earlier (Fussell, 2002). Apparently, display rules for Internet communication are comparable to display rules for face-to-face communication. Hypothesis 2 was not confirmed. In positive contexts people used just as much emoticons as in negative social contexts. Face-to-face communication and computer mediated communication seem to differ regarding to the expression of positive and

negative emotions. Lee and Wagner (2002) showed that people displayed more emotions in positive, face-to-face, contexts than in negative contexts. Possibly, Internet is more accessible to express negative emotions because of the anonymity aspect of this kind of communication. As a result deindividuation can appear what is associated with antinormative behavior. This is frequently demonstrated in research (e.g., Postmes, Spears, Sakhel, & de Groot, 2001; Spears, & Lea, 1994).

Hypothesis 3 was confirmed. In negative, task-oriented social contexts subjects used indeed less emoticons than in other contexts. Clearly, an emoticon is not sufficient in a negative situation and more communication is needed to solve a problem. Apparently, in negative situations people have to be more accurate, explain more and if possible, present alternatives. This situation is comparable with daily face-to-face communication.

Hypothesis 4 is confirmed as well. People use more negative than positive emoticons in negative contexts and more positive than negative emoticons in positive contexts. Fussell (2002) already stated that people seem to adjust their emotional expressions to the social context in daily, face-to-face, life. This study demonstrates that emoticon use seems to be contextual as well.

The overall conclusion of this study is that social context matters in CMC. Generally spoken, the expression of emotions in CMC, by use of emoticons, is similar to the expression of emotions in face-to-face communication. There seems to be an exception, namely in the expression of negative and positive emotions. Results from Lee and Wagner (2002) which showed that people displayed more in emotions in positive contexts than in negative contexts, could not be replicated in CMC.

Some remarks should be made about emoticons in general. Although emoticons may be employed to replicate nonverbal facial expressions, they are not actual nonverbal behavior. Relative to face-to-face communication, emoticons can be considered more deliberate and voluntary. Although it is conceivable that emoticons could become habitual and less conscious over time, it is still not clear how emoticons are interpreted in CMC: as iconic and unconscious like nonverbal facial expressions or, like wording, as deliberately encoded elements of intentional communication (Walther & D'Addario, 2001). It is plausible that emoticons have a limited range compared to emotions in real life.

There is not much literature about the expression of emotions on Internet. The present study can be considered as a first step to develop more knowledge about the expression of nonverbal emotions on the Internet. The assumptions that interactions on the Internet are less emotional and less social (e.g., Rice & Love, 1987; Walther, Anderson, & Park, 1994; Sproull & Kiesler, 1986), must be modified. Walther and D'Addario (2001) already stated that people can imbue their messages with social

meaning through the use of emoticons. And simply the fact that people do use emoticons, shows that they apparently need some sort of short string displays of emotions (Fischer, 2004). However, the present study also has some limitations. The short Internet chats presented to the subjects were printed on paper, this is another perception than actually online chatting in a purpose designed chat interface. It should be noted that the kind of social context (socio-emotional vs. task-oriented) interfered with the role of the interaction partner. In socio-emotional contexts one had to communicate with a friend and in task-oriented contexts with a classmate.

It can be concluded that social context influences the use of emoticons, but in future research the roles of the interactionpartners will be separated to specify the influence in more detail. Furthermore, in negative contexts the setting is maybe more problematic than in positive contexts and the subject varies over the contexts. Because of the lack of nonverbal cues in CMC there are more messages required, and thus more time, to raise the relational aspects of communication to the same level as in face-to-face communication (Walther & D'Addario, 2001) and as a result there are more miscommunications (Erkens, Theil, Kanselaar, Prangsma & Jaspers, 2002). The lack of nonverbal cues in CMC can cause a lot of problems. In future research will be examined to what extent emoticons can overcome this lack, and facilitate the communication.

Chapter 4

Emoticons in computer-mediated communication: social motives and social context

Chapter 4

Emoticons in computer-mediated communication:
Social motives and social context[1]

The present study investigates the role of emoticons in computer-mediated communication (CMC). The study consisted of an online questionnaire about the social motives for emoticon use and an experimental part in which participants (N = 1251) had to respond to short internet chats. In these chats, the interaction partner (friend vs. stranger) and the valence of the context (positive vs. negative) were manipulated. We hypothesized that participants used more emoticons towards friends than towards strangers, and that they spontaneously used more emoticons in positive contexts than in negative contexts. We expected that this context effect would be weaker because of the anonymity aspect of CMC which makes it easier to express negative emotions. Results showed that emoticons are mostly used to express emotion, to strengthen a message and to express humour. Furthermore, in line with the hypotheses, most emoticons were used towards friends in comparison to strangers and more emoticons were used in a positive context than in a negative context (spontaneously as well as intentionally). In spite of the differences between F2F communication and CMC, participants seem to use emoticons in a similar way as facial behavior in F2F communication, at least with respect to social context and interaction partner.

Most research on expression of emotion has a focus on face-to-face (F2F) communication. However, nowadays an increasing amount of interaction between people takes place online. E-mail and chat tools can help us to stay in touch with friends and family abroad. Discussion boards and mailing lists are useful in meeting new people who share the same interests. Obviously, there are some differences between computer-mediated communication (CMC) and ordinary face-to-face communication (F2F) (McKenna & Bargh, 2000). Two of these differences have been the focus of most psychological research (Bargh & McKenna, 2004). The first one is the anonymity aspect, which turns out to have important consequences for relationship development and group participation. The second one is the absence of nonverbal cues that affects the process and outcome of social interaction on the Internet (Bargh & McKenna, 2004). Previous research has focused on how the absence of these features affects social interaction on the Internet.

Three theoretical approaches have been influential over the years. The first one in time was the "*cues-filtered out*" approach (Sproull and Kiesler, 1985). This approach argued that CMC limits the bandwidth of social interaction on the Internet, compared with the ordinary F2F communication settings. CMC is considered to be an impoverished communication experience in which the reduction of available social cues results in a greater feeling of anonymity. This can have certain consequences, like excited and

uninhibited communication, such as flaming and taking more risky and extreme decisions in comparison with F2F interaction (Sproull & Kiesler, 1986; Kiesler, Siegel, & McGuire, 1984; Siegel, Dubrovsky, Kiesler, & McGuire, 1986). This theoretical approach assumes that the communication channel itself has an effect on communication. Spears, Postmes, Lea and Wolbert (2002) contrast this approach with a *social science perspective* on social interaction on the Internet. This approach assumes that the communication channel itself does not affect social interaction on the Internet, but instead that personal goals and needs are the sole determinants the differences between F2F communication and CMC. It is argued that the particular purpose of the individuals within the communication setting determine the outcome of the interaction, regardless of the features of the medium through which the communication takes place (Spears et al., 2002). The most recent approach focuses on the interaction between the features of the Internet communication setting and the particular goals and needs of the interactants, as well as the social context of the interaction setting (Bargh, 2002; McKenna & Bargh, 2000; Spears et al., 2002). According to this perspective, the special qualities of CMC do have an impact on the process and the outcomes of social interaction, but this effect can be quite different depending on the social context. In the next sections we discuss the consequences of these particular features of CMC for the expression of emotion.

Nonverbal cues and emoticons in CMC

It is common knowledge that the expression of emotion in F2F interaction depends for a large part on nonverbal cues. These cues are absent in text-based CMC, which implies that for the interpretation of messages online we have to rely exclusively on verbal information. This may have consequences for the decoding of other's emotions because we cannot make use of nonverbal cues in the interpretation of incoming messages. In addition, it has also consequences for the expression of our own emotions towards others because everything has to be verbalized which is not always easy because a part of nonverbal expression happens unconsciously. Furthermore, because of the lack of visual cues in text-based CMC, it might be easier to regulate our own emotions. On the one hand because everything has to be typed and there is time to read over the message before it is submitted and, on the other hand, because there is no risk of unconsciously leaking of nonverbal information which makes the Internet a relatively "safe" environment (McKenna, Green, & Gleason, 2002). We assume that nonverbal cues have the similar social functions in CMC and F2F. One function of displaying nonverbal cues in face-to-face communication is that the ambiguity of a message is reduced. For instance, a message may have a different meaning when it is accompanied by a supporting smile or a contradicting frown. Another function of nonverbal cues is that they may intensify or

tone down the emotion expression (Lee & Wagner, 2002). Mere words may not be able to carry all the information that someone wants to convey.

Although nonverbal cues are strictly speaking absent in text-based CMC, there may be non-textual information available, for example in the form of emoticons. Emoticons serve similar functions as facial nonverbal expressions (e.g., Derks, Bos, & von Grumbkow, 2007; Ekman & Friesen, 1969; Harrison, 1973). Emoticons may serve as nonverbal surrogates, suggestive of facial expression and they may thus enhance the exchange of emotional information by providing additional social cues beyond what is found in the verbal text of a message (Thompson & Foulger, 1996). Internet users often incorporate emoticons as visual cues in their messages to augment the meaning of a message (Rezabek & Cochenour, 1998). Just the fact that emoticons are used implies that individuals at least feel the need to express some of their emotions with short symbols rather than text on some occasions. Huffaker and Calvert (2005) also note that there is a heavy use of emoticons in web logs, which means that they are prevalent in online interactions. That emoticons are used frequently and seem to be used in a similar vein as nonverbal cues does not necessarily mean that they *are* nonverbal behavior. Relative to nonverbal signals in F2F communication, emoticons are more deliberate and voluntary. However, it is conceivable that the use of emoticons can become habitual and more unconscious over time, it is still unclear when emoticons are used, how they are interpreted, and what their effects are in different emotional contexts (see also Walther & D'Addario, 2001). The present study examines the role of emoticons in CMC. It is the first study to our knowledge about the motives for emoticon use. Furthermore, we examine the influence of social context and the interaction partner on emoticon use. In the first part of this study, we will focus on the intentional aspects and social motives in emoticon use.

Social motives for emoticon use

People might express emotions for different reasons. For expressing the underlying emotion (Ekman, 1972) or strictly for communication goals. Fridlund (1994) argued that nonverbal facial expression of emotions function to communicate information to others rather than simply to express underlying emotions. Furthermore, Fridlund believed that the content of the communication is not by definition about emotions, but concerns behavioral intentions or social motives (Fridlund, 1994). Faces are not readouts of inner states—or even readouts of social intents-- but rather a means of social communication. The content of the emotional signal is thus not the displayer's feeling state, rather it is a social message about the displayer's intention or it constitutes a request for a specific action by the person to whom the emotional display is directed. Fridlund's (1991) key

findings were that smiling increased as a function of sociality but that the subjective happiness did not vary as a function of sociality. Fischer, Manstead, Evers, Timmers, and Valk (2004) argue that individuals pursue interpersonal goals in social interactions and use their emotions to serve these goals. They distinguished three different types of motives at the interpersonal level. Their first one is 'impression management', which implies that individuals regulate their emotions to avoid being evaluated unfavorably by their interaction partner because of inappropriateness of their emotions (Fischer et al., 2004; Erber & Erber, 2000). A second one is a prosocial motive, which implies that individuals rather please or protect others instead of hurting and offending others (see also Zaalberg, Manstead, & Fischer, 2004). The third type of motive is a motive to manipulate others (Fischer et al., 2004). By means of expressing emotions individuals pursue their own "emotivational" goals (Roseman, Wiest, & Swartz, 1994).

Because emoticons can be seen as a surrogate for nonverbal emotional expression and they resemble facial expressions, it might be plausible that individuals also have social motives to use them. Because emoticon use is more deliberate than facial behavior, it is also easier to regulate. It might be easier to act in the line of the motive for displaying emotion because there is no risk of unconsciously leaking nonverbal behavior. In the first part of the current study we examined the motives behind the use of emoticons from a sender perspective. The motives we examined are based on the motives distinguished by Fischer et al. (2004).

Interaction partner

The second part of the current study focuses on two aspects that might influence emoticon use. The first one is the importance of the interaction partner. The second one is the social context in which the interaction takes place. In this section we will further elaborate on the importance of the interaction partner in F2F communication as well as in CMC.

Fridlund (1991) has shown that a situation in which others are imaginary present (implicit sociality) leads to more smiling compared to a situation in which there are no others present. In the same line of reasoning other researchers have shown that the identity of the interaction partner and one's relation with this partner affects the amount of emotion expression (see Hess, Banse, & Kappas, 1995; Jakobs, Manstead, & Fischer, 2001; Fischer, Manstead, & Zaalberg, 2004; Parkinson, Fischer, & Manstead, 2005; Tiedens & Leach, 2004). Hess et al. (1995) have shown that if a person is exposed to a pleasant emotional stimulus and believes that a friend is exposed to the same stimulus at the same time, the person smiles more than if that other person is a stranger. So, when others are psychologically present, there is some sense of tuning our facial displays with

them through facial behaviors. Manstead, Lea and Goh (2006) note that it does not matter if this other person is in another room, another city or another continent. We even smile at them, especially when this other person is considered to be a friend. After all, strangers and friends differ from one another on a number of dimensions, including identifiability, similarity, intimacy, likelihood of future interaction, shared norms for communication and so on (Manstead et al., 2006). Research of Wagner and Lee (1999) shows that the frequency of nonverbal emotions increases when the interaction was considered to be a friend. Jakobs, Manstead and Fischer (1999) conducted a study on social context effects on smiling. They manipulated the interaction partner, friend versus stranger. Participants smiled more towards friends than towards strangers. Fischer, Manstead and Zaalberg (2004) conclude that social context effects depend not only on the presence or absence of others, but also on the strength of the relationship with these others. In this line of reasoning in face-to-face research, assuming that emoticons can function as surrogates for nonverbal cues, it is to be expected that individuals use more emoticons towards friends than towards strangers. Therefore, we expect a main effect of interaction partner on the frequency of emoticons (hypothesis 1a) and on the intention to use an emoticon (hypothesis 1b).

Social context

A second aspect of the interaction that is examined in this study is the social context in which the interaction takes place. There is not much research about social context in a CMC setting. Therefore we consider the research of the impact of an interaction partner in F2F communication. Display rules are culturally determined rules about who may display what to whom. Wagner, Lewis, Ramsey and Krediet (1992) demonstrated that how expressive people are of particular emotions, depends on how appropriate others believe it would be to express those emotions in a particular context. It seems plausible that positive emotions are more generally accepted to display than negative emotions in F2F communication as well as in CMC. But, on the other hand, in the case of computer-mediated communication it might be easier to express negative emotions because of the anonymity aspect, the decreased risk of immediate rejection, and the absence of facial feedback in comparison with F2F communication. It is also easier to express positive emotions. This can neutralize the effects of valence of context. In a previous study on emoticons and social context (Derks, Bos, & von Grumbkow, 2007), there were no differences in the frequency of emoticons between positive and negative contexts. In the current study, we manipulated the valance of the context (positive and negative contexts). We make a distinction in actual behavior, spontaneously reacting with an emoticon, and the intention to use a certain emoticon in a given context. In line with the

view that the internet provides a safe environment (McKenna et al., 2002) to express positive as well as negative emotions marginal effects in the frequency of emoticon use in actual behavior are expected. But in the intentional part there might be a larger influence of display rules, because people consciously decide whether they would use a certain emoticon in a given context. To conclude, we expect an effect of context in the *intention* in using more emoticons in a positive versus a negative context (Hypothesis 2a), but a weaker effect of context on emoticon use in the spontaneous reactions of participants (Hypothesis 2b).

Methods

2.1. Participants

Participants (N= 1251) were visitors of the Psychology Magazine website, a popular psychology magazine in the Netherlands. Only 925 participants decided to fill out the questions handling the background variables. This group consisted of 789 women and 136 men (mean age 35.2 years, *SD*= 11.76). Participants participated on a voluntary basis in this online experiment and did not receive any financial reward for their participation. All participants were randomly assigned to one of the experimental conditions. The experiment was online available for one month.

2.2. Procedure

On the website of Psychology Magazine a link was placed to this online experiment. Participants were told that they participated in an experiment about their experience with e-mail and chat. Participation time was approximately 15 minutes.

2.3. Materials and design

The study consisted of two parts. The first part was a questionnaire about motives for using emoticons; the second part consisted of an experiment.

The questionnaire focused on motives for emoticon use. The emoticons used were big smile, smile, sad, wink, confused and cry. All motives were measured on 7-point scales, with responses ranging from 1 (*totally disagree*) to 7 (*totally agree*). For example, participants had to rate how much they agreed with the following statement: I use the emoticon big smile to express emotions. The motives measured for each emoticon were: to express emotion, to strengthen the message, to manipulate the interaction partner, to express humor, to put a remark into perspective, to regulate the interaction, and to express irony.

In the experimental part, short Internet chats were presented to the participants. Participants had to imagine that they posted a recipe of Indian Curry on a culinary website. A week later they returned to the website and someone who tried out the recipe approached the participant via chat. At this point our manipulation was induced. The interaction partner was either a good friend or a stranger. The valence of the context was also manipulated. In the positive condition the interaction partner liked the recipe very much and thanked the participant for sharing this wonderful recipe with the world. In the negative condition the interaction partner really disliked the recipe and remarked that the sender better should not have posted this recipe because it is disgusting. This results in a 2 (interaction partner; friend versus stranger) x 2 (valence of context; positive versus negative) between subjects design.

Participants were first asked to respond to the chat in an open-ended question. The question was, given this situation how would you react? Then, second they were asked if they felt the need to add an emoticon to their reaction (spontaneous emoticon use). Finally, they were asked for six emoticons how plausible it was that they would use this specific emoticon in the given situation. Four of the six emoticons used were selected because these were the most used emoticons in previous studies (e.g., Derks et al., 2007) (big smile, smile, sad and wink) and the other two because they are very popular on MSN (confused and cry). These were measured on 7-point scales assessing the chance that they would use a certain emoticon, with responses ranging from 1 (*very unlikely*) to 7 (*very likely*).

Finally, participants were asked to rate on a seven point scale how familiar the interaction partner was to them and how positive they rated the interaction. These were our manipulation checks. At the end of the experiment we measured background variables, such as age, gender, educational level, civil status and computer experience.

Results

3.1. Social Motives for emoticon use

A repeated measures ANOVA according to a 6 (emoticon) x 7 (motives) within subjects design was conducted. The multivariate main effect of emoticon was significant, $F(5, 704) = 173.68$, $p < .001$. Univariate analyses showed that all the emoticons differ significantly from each other, except wink and confused. Cry ($M = 4.65$, $SD = 1.46$) and big smile ($M = 4.17$, $SD = 1.36$) are the most popular emoticons. See table 1.

Table 1. Interaction effects motive x emoticon

Motive	Emoticon	Mean	SD
Express emotion	Bigsmile	4.55_a	1.99
	Smile	4.51_{ab}	1.94
	Sad	5.20_c	1.80
	Wink	4.71_{ab}	2.18
	Confused	4.40_{ab}	1.98
	Cry	4.20_d	2.05
Strengthen message	Bigsmile	4.71_a	2.01
	Smile	4.13_b	1.92
	Sad	4.50_c	1.94
	Wink	4.49_c	2.15
	Confused	4.06_b	2.02
	Cry	4.74_a	2.02
Manipulate partner	Bigsmile	3.41_a	1.84
	Smile	3.30_{abc}	1.83
	Sad	3.35_{ab}	1.81
	Wink	3.36_{ab}	1.95
	Confused	3.15_{bc}	1.81
	Cry	4.12_d	2.00
Express humor	Bigsmile	5.14_a	1.88
	Smile	4.00_b	1.93
	Sad	2.79_c	1.86
	Wink	3.57_d	2.25
	Confused	3.75_e	2.07
	Cry	5.43_f	1.77
Put into perspective	Bigsmile	4.20_a	1.97
	Smile	4.13_a	1.85
	Sad	2.88_b	1.77
	Wink	3.06_c	1.96
	Confused	3.56_d	1.93
	Cry	5.22_e	1.86
Regulate interaction	Bigsmile	3.69_a	1.90
	Smile	3.88_b	1.93
	Sad	2.53_c	1.86
	Wink	2.37_d	2.25
	Confused	2.67_e	2.07
	Cry	4.19_f	1.77
Express irony	Bigsmile	3.13_a	2.02
	Smile	2.52_b	1.75
	Sad	2.78_c	1.88
	Wink	3.47_d	2.21
	Confused	3.68_e	2.10
	Cry	4.65_f	2.09

Note. Judgments were made on 7-point scales (1 = *I would not use the emoticon for this motive*. 9 = *I would definitely use the emoticons for this motive).* Means that do not share the same subscript differ at *p* < .01.

The multivariate main effect of motives was significant as well, $F(6, 704) = 157.09$, $p <$ .001. Univariate analyses showed that all motives differed significantly from each other, except the motives 'manipulating interaction partner' and 'irony'. Expressing emotion ($M = 4.59$, $SD = 1.54$), strengthen the message ($M = 4.44$, $SD = 1.57$) and expressing humour ($M = 4.112$, $SD = 1.33$) are the most common motives for using emoticons. The interaction effect of emoticon x motives was significant as well, $F(30, 679) = 54.73$, $p <.001$. See table 1 for univariate interaction effects and means.

3.2. Manipulation Checks

A 2 (interaction partner) x 2 (context) analysis of variance (ANOVA) was performed on the item assessing whether participants recalled how familiar their interaction partner was to them. A main effect was found for interaction partner, $F(1, 1241) = 1468.38$, $p <$ .001. Participants in the good friend condition rated their interaction partner as more familiar ($M = 4.99$, $SD = 1.42$) than did participants in the stranger condition ($M = 1.87$, $SD = 1.39$). No other main or interaction effects were found.

A 2 (interaction partner) x 2 (context) analysis of variance (ANOVA) was performed on the item assessing how positive they experienced the situation. A main effect was found for context, $F(1, 1241) = 55.19$, $p < .001$. Participants in the positive context condition rated the situation as more positive ($M= 5.54$, $SD = 1.26$) than participants in the negative condition ($M = 3.87$, $SD = 1.20$).

3.3. Experiment

To test if the manipulations had effect on the use of emoticons, a χ^2 analysis on the spontaneous reaction was conducted. Participants used more emoticons towards a good friend than towards a stranger $\chi^2(2) = 33.20$, $p <.001$ (see Table 2).

Table 2. Cross tabulation emoticon use towards a good friend versus a stranger.

		Would you like to add an emoticon to your reaction?		
		yes	no	total
Interaction partner	Good friend	451	206	657
	Stranger	315	279	594
Total		766	485	1251

Furthermore, participants used more emoticons in positive contexts in comparison with negative contexts, $\chi^2(2) = 19.35$, $p < .001$ (see Table 3). This means that Hypothesis 1a is confirmed and Hypothesis 2b is rejected.

Table 3. Cross tabulation emoticon use in positive and negative contexts.

| | | Would you like to add an emoticon to your reaction? | | |
		yes	no	total
Context	Positive	456	276	732
	Negative	310	209	519
Total		766	485	1251

A 2 (context) x 2 (interaction partner) multivariate analysis of variance (MANOVA) was performed on the six items assessing the chance that participants would use a certain emoticon in the given situation. The multivariate main effect of interaction partner was significant $F(6, 1124) = 10.99$, $p < .001$. Univariate analyses showed that the chance that participants use emoticons towards good friends is significantly higher than towards strangers for the emoticons big smile, $F(1, 1129) = 27.05$, $p < .001$, smile $F(1, 1129) = 4.24$, $p < .05$, wink $F(1, 1129) = 26.38$, $p < .001$ and cry $F(1, 1129) = 32.312$, $p < .001$. Hypothesis 1b is confirmed.

The multivariate main effect of context was significant $F(6, 1124) = 111.80$, $p < .001$. Univariate analyses showed significant effects for big smile $F(1, 1129) = 108.92$, $p < .001$ and smile $F(1, 1129) = 128.08$, $p < .001$. For these emoticons the chance that they will be used is higher in positive contexts than negative contexts, respectively big smile (M positive $= 4.08$, $SD = 2.13$ and M negative $= 2.82$, $SD = 1.88$) and smile (M positive $= 4.65$, $SD = 1.95$ and M negative $= 3.32$, $SD = 1.96$). Univariate analyses showed also significant effects for sad, $F(1, 1129) = 438.67$, $p < .001$, wink $F(1, 1129) = 166.62$. $p < .001$ and confused $F(1, 1129) = 377.42$, $p < .001$. But here the direction was the opposite, the chance that these emoticons will be used is higher in negative contexts than in positive contexts. The means are respectively, sad (M positive $= 1.34$, $SD = .87$ and M negative $= 3.04$, $SD = 1.80$), wink (M positive $= 1.24$, $SD = .78$ and M negative $= 2.26$, $SD = 1.75$) and confused (M positive $= 1.57$, $SD = 1.18$ and M negative $= 3.49$, $SD = 2.09$). Hypothesis 2a is confirmed.

There was also an interaction effect between context and interaction partner, $F(6, 1124) = 4.730$, $p < .001$. Taking a closer look at the univariate analyses it appears that the effect is significant for big smile $F(1, 1129) = 10.63$, $p < .01$. Means show that big

smile is most likely used in a positive context, towards a good friend ($M = 4.59$, $SD = 1.99$) and most unlikely in a negative context, towards a stranger ($M = 2.70$, $SD = 1.88$), see also Figure 1.
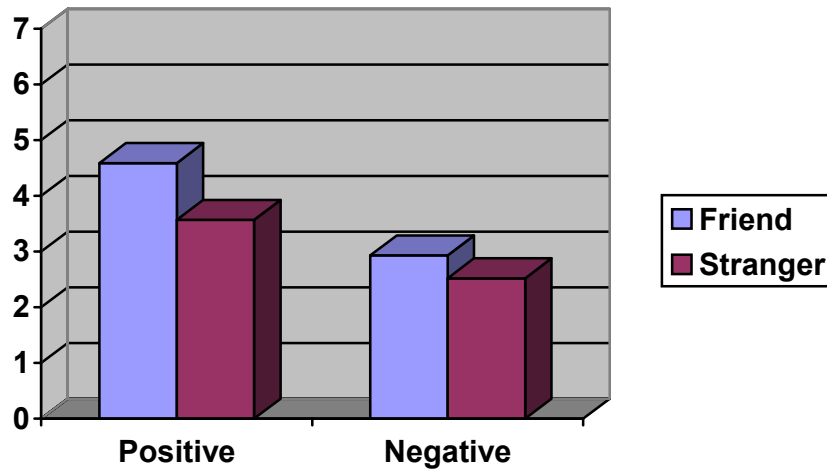

Figure 1. Context x interaction partner interaction-effect of how likely it is that participant would use the emoticon Big Smile.

The interaction effect is also significant for wink $F(1, 1129)$, $p < .01$, the chance that wink will be used is highest in a negative context towards a good friend ($M = 2.52$, $SD = 1.91$) and lowest in a positive context towards a stranger ($M = 1.14$, $SD = .53$), see Figure 2.
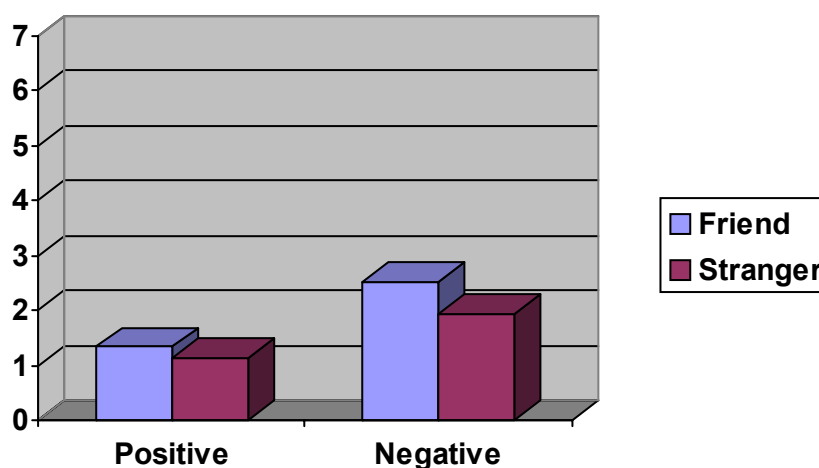

Figure 2. Context x interaction partner interaction effect of how likely it is that participant would use the emoticon Wink.

Discussion

To our knowledge this is the first study about motives behind emoticon use. Emoticons are most used for the expression of emotion, for strengthening the verbal part of a message and finally, for expressing humor. So apparently this matches with the functions of nonverbal emotional expression in F2F communication. One function of nonverbal behavior in F2F communication is reducing the ambiguity of the intended emotional expression (Derks, Fischer, & Bos, 2006). A message accompanied by a frown or wink may have a different meaning than the same message accompanied by a smile. When nonverbal cues support a verbal message, they can give a message more strength. Telling a sad story with tears in the eyes has more impact on the interaction partner than telling the same story with a smile. Apparently, emoticon users adopt this function of nonverbal behavior for emoticons. The success of the expressing humor motive for using emoticons is not that surprising. When a writer is trying to be funny, messages are often misinterpreted (Sanderson, 1993). Then a symbol resembling a nonverbal cue to animate and clarify a message is useful and may lead to less misunderstanding. Furthermore, an emoticon in addition to a humorous message can increase the chance that the receiver of the message interprets it in the way the sender intended the message to be. It is remarkable that there is no strict division in motives for using emotions, either expressing the underlying emotion (Ekman, 1972) or just for communicational goals (Fridlund, 1994). The results of this study seem to imply that, in using emoticons, it is a mix of expressing emotion and social motives.

The results of the second part are interesting as well. In line with earlier research, which showed that people display more emotions towards friends than towards strangers (e.g., Wagner & Lee, 1999; Jakobs, Manstead, & Fischer, 1999), these results show that this can be extended to the use of emoticons in CMC. Participants used more frequently emoticons in reaction to a friend than in reaction to a stranger, either in combination with a textual message or exclusively with an emoticon. In the intentional measurement there was also an effect of interaction partner. Participants rated the chance that they would use an emoticon in the interaction with friends significantly higher than with a stranger. Hypotheses 1a and 1b are confirmed. Apparently, the theory about expressing more emotion towards friends in comparison to strangers in everyday F2F life can be extended to a CMC setting.

Our expectations about emoticon use in positive and negative contexts were two folded. We hypothesized a stronger effect in the intention to use an emoticon than in the spontaneous emoticon use in the reactions to the given situation. We expected that the chance on using an emoticon (intentional measurement) is rated higher in positive

58

contexts than in negative contexts. Indeed, the overall effect of context on the intention of using an emoticon was significant. In positive contexts it is more likely to use an emoticon than in negative contexts. Hypothesis 2a is confirmed. Taking a closer look at the underlying univariate effects, we find out that participants tune the emoticon upon the social context. Big smile and smile, both positive emoticons, are more likely to be used in positive context, but the more negative and ambiguous emoticons, like sad, wink and confused, are more likely to be used in negative contexts. We hypothesized that this effect would be stronger than in the spontaneous emoticon use, because an online environment can make it safer (McKenna, Green, & Gleason, 2002) to express negative emotions in comparison with F2F communication. As a consequence the common effect that people are more at ease in displaying positive emotions can be neutralized. However, the results in this study showed that participants used significantly more emoticons in positive contexts than in negative contexts, so hypothesis 2b has to be rejected. Results are in line with research from Lee and Wagner (2002) which showed that people display more emotions in positive social contexts than in negative social contexts. Apparently the analogy between nonverbal cues in F2F communication and emoticons in CMC is greater than expected. Possibly, emoticons are that successful in resembling facial behavior that the effects in CMC are the same as in F2F. In spite of the differences between the modes of communication, participants make use of emoticons as a nonverbal symbol to imbue their messages, and seem to use them in the same way as facial behavior in F2F communication, at least with respect to social context.

The present study is the first to our knowledge that empirically examines the motives for emoticon use. The experiment was conducted in an online setting, which approximates the natural setting of CMC. Furthermore, a large, heterogeneous, sample of the Dutch population participated in the study. Besides these strengths, the present study has also some limitations. We must remark that emoticons might become habitual over time, but that they are no actual nonverbal behavior. However, this study shows that they may come close to it and that they serve at least some of the same functions as nonverbal cues in F2F communication. Furthermore, we asked participants to imagine that they posted a recipe on a culinary website and that they received a reaction from someone who tried out their recipe. This situation is evidently not the same as a natural conversation online. This has consequences for the generalization of the results to actual behavior.

There is still a lot to explore on the role of emoticons in CMC. We do know that people use emoticons to augment the meaning of textual electronic messages (Rezabek & Cochenour, 1998), to exchange emotional information in addition to a verbal message (Thompson & Foulger, 1996) and these studies show that emoticons are also used for communicational ends. Furthermore, our present study provides additional support (see

also Derks et al, 2007) for the importance of social context and interaction partner in the use of emoticons. However, these are mostly studies on the sender's perspective of the interaction. For future research it is interesting to take a closer look at the receiver's perspective of the communication process. Is there really a difference in how interaction partners interpret a message when there is added an emoticon, or not? Have emoticons the strength to alter the meaning of a message or are they only capable of strengthening a message at most (Walther & D'Addario, 2001)? Future research should examine the power of emoticons and the impact of emoticons on the receiver of a message.

All this taken into consideration, we can conclude that in spite of the differences between F2F communication and CMC, there are also some striking similarities in the expression of emotion. The present study is another piece of the puzzle in figuring out how emotional expression online takes place and what motives people have in using emoticons.

Chapter 5

Emoticons and online message interpretation

;-)

Chapter 5

Emoticons and online message interpretation[1]

The present two studies experimentally examine the impact of emoticons on message interpretation in different settings. Furthermore, the perceived motives for emoticon use are examined. Study 1 (N = 80) was conducted among psychology students in a behavioral lab. In Study 2 (N = 105) we replicated the results in a more natural setting with secondary school students as participants. Results show that emoticons do have an impact on message interpretation. Emoticons are useful in strengthening the intensity of a verbal message. Furthermore one can create ambiguity and express sarcasm online by varying the valence of the emoticon and the valence of the message. Overall, we can conclude that to a large extent emoticons serve the same functions as actual nonverbal behavior.

Today, a very large amount of our daily interaction with others takes place on the Internet. A specific characteristic of computer-mediated communication (CMC) is that it is largely text-based which automatically implicates that there is a lack of nonverbal cues. Besides the verbal part of a message, one way to give expression to our thoughts is by using emoticons. The two studies presented in this paper examine the impact of emoticons on the interpretation of email messages.

Emoticons in CMC

Emoticons resemble facial nonverbal behavior and may serve at least some of the same functions as nonverbal behavior in face-to-face (F2F) communication (e.g., Derks, Bos, & von Grumbkow, 2007). The basic functions of nonverbal cues in F2F communication are providing information, regulating social interaction and expressing intimacy (e.g., Ekman & Friesen, 1969; Harrison, 1973; Argyle, 1972). Nonverbal cues in F2F communication may intensify or tone down the emotional expression (Lee & Wagner, 2002). In this study, we examine the impact of emoticons on message interpretation.

In CMC there is a lack of visual cues which implies that not all information is fully transferred (McKenna & Bargh, 2000). The messages typically conveyed by these cues are not available in a text-based environment (e.g., Burgoon & Saine, 1978; Shaw, 1981; Walther, 1995). As a consequence email messages can be misinterpreted, especially when the writer is trying to be funny (Sanderson, 1993). The fact that emoticons are used implies that people have the need to express emotions with symbols rather than text. Words alone might not be able to carry all the emotional information a person wants to convey. Therefore many e-mailers use emoticons to add a paralinguistic

---

[1] This chapter is submitted as Derks, D., Bos, A. E. R., & von Grumbkow. (2007). *Emoticons and online message interpretation.* Manuscript under revision.

component to a message. Writing down emotional messages changes the intensity of the emotion because there is time to read over the text and reflect on one's emotional state (Fischer, in press). Emoticons may enhance the exchange of emotional information by providing additional social cues beyond those found in the message text (Thompson & Foulger, 1996). They are used to augment the meaning of a message (Rezabek & Cochenour). Rivera, Cooke and Bauhs (1996) showed that when emoticons are available, they are often used in CMC sessions and the subjects who had access to a set of emoticons were more satisfied with the system than subjects who depended strictly on text-based communication. The overall heavy use of emoticons in email messages in Instant Messaging (IM) and in web blogs suggests that they are prevalent in online interactions and that they apparently add value to textual messages (Huffaker & Calvert, 2005). Emoticons may be used to emphasize or clarify one's feelings, but also to soften a negative tone and to regulate the interaction, just as smiles and frowns do in daily life.

Perceived motives for emoticon use

The lack of nonverbal cues and the use of emoticons also have some advantages over regular face-to-face communication. There is no risk of unintentionally leaking nonverbal information, which makes the Internet a relatively "safe" environment for communication (McKenna, Green, Gleason, 2002). Emoticons are used more consciously than actual nonverbal behavior, which implies that there is more control over the message a person wants to convey. As a consequence it might be easier to regulate emotions. Different functions have been ascribed to facial displays in F2F communication over the years. The "emotional" view states that facial displays are a result of a person's internal emotional state (e.g., Ekman, 1972; Izard, 1971, 1977). According to Fridlund's (1994) "behavioral ecology" view, facial displays are social signals communicating social motives. More recent evidence shows that facial displays are affected by both emotional and social factors (Hess, Banse, & Kappas, 1995; Jakobs, Manstead, & Fischer, 1999). As emoticons can be seen as nonverbal surrogates resembling facial expressions, it is plausible that CMC users also have social motives for adding emoticons to their messages. In a previous study (Derks, Bos, von Grumbkow, 2006) the motives for using emoticons were examined. Overall, emoticons were most used for the expression of emotion, for strengthening the verbal part of the message (with a supporting emoticon), and expressing humor. This is in line with the approach that facial displays are affected by social factors as well as emotions (Hess et al., 1995; Jakobs et al., 1999). Apparently, this line of reasoning can be extended to emoticon use in a CMC context. However, the motives people have for expressing certain emotions, or using certain emoticons, are just one side of the communication process. The lack of nonverbal cues in CMC does not only

have consequences for the emotional expression of the sender of a message, it also has consequences for the decoding and interpretation of a message by the receiver. Since there is no facial feedback, the writer is uncertain whether the receiver will interpret the message exactly how he/she intended it. Therefore, in the current study we examine how receivers rate the motives of the senders of a CMC message to use an emoticon.

The impact of emoticons

To our knowledge, Walther and D'Addario (2001) were the first to experimentally test the impact of emoticons on the interpretation of email messages. Although emoticons seem to replicate nonverbal behavior, literally speaking they are not nonverbal behavior. Walther et al. (2001) reasoned that if emoticons are truly useful surrogates of nonverbal behavior, we should expect the effects of emoticons in CMC to be similar to the strong effects that nonverbal cues have on F2F communication. This means that the impact of emoticons might be as great or even greater than that of verbal messages alone on the interpretation of emotions, especially in the case of mixed messages. The study by Walther and D'Addario (2001) comprised a 2 (valence: positive, negative) x 4 (emoticon: smile, frown, wink, blank) between-subject design. They presented email messages to the participants. Each message contained a brief discussion about a movie, and then a statement about an economics course which was the experimental stimulus. This statement was either positive or negative and was accompanied by one of the three emoticons or left blank in the control condition. Walther and D'Addario (2001) concluded that emoticons had less impact on message interpretation than expected, and when they did have an impact, this was not consistent. They argued that emoticons can serve the function of complementing verbal messages at best, but not contradicting or enhancing them (Walther et al., 2001).

However, we do have indications that emoticons at least serve some of the same functions as actual nonverbal behavior in daily life (see Derks, Fischer, Bos, 2006; Derks, Bos, and von Grumbkow, 2007). Perhaps, the paradigm used by Walter et al. (2001) is the reason for their disappointing results. Therefore, in the present study we adapted Walther et al.'s paradigm (2001) in several ways. First, we added a neutral condition to the positive and negative conditions that already existed. The neutral messages can pre-eminently show that emoticons have an impact on message interpretation. The messages Walther et al. (2001) used were statements about an economics course. This is quite a general topic and the receiver of the message is probably not really involved in the conversation. In the adjusted paradigm, participants were made the subject of the email messages. They received an email message containing an evaluation of their performance. Furthermore, we manipulated the type of interaction partner (good friend

vs. stranger). Finally, we added mood as a dependent variable. The impact of a message should also be reflected in how one feels after reading it. The hypotheses are largely in line with the hypotheses of Walther et al. (2001) and will be outlined below. The exceptions are the hypotheses about mood. Furthermore, it is important to note that we restricted the definition of a "pure" message to a strictly verbal message, without an emoticon.

Strengthen a message

The intensity of a message may be toned down in strictly text-based messages. Nonverbal cues can intensify or tone down the emotional expression (Lee & Wagner, 2002). Emoticons might help to give a message the intensity the sender wants to express. In F2F communication nonverbal cues can augment, illustrate and accentuate the words they accompany (Burgoon, 1994). Streeck and Knapp (1992) noted that communication is embodied and that verbal and nonverbal modalities are inter-organized. Walther and D'Addario (2001) tested these hypotheses by measuring how much happiness the writer of the message portrayed. Besides the writer's state of happiness, we also assessed the positivity of the message. Following this line of reasoning, we expect that:

1a. A positive verbal message coupled with a smile emoticon conveys greater positivity and happiness than a positive verbal message alone.

1b. A negative verbal message coupled with a frown emoticon conveys greater negativity and less happiness than a negative verbal message alone.

Mixed messages

Mixed feelings, creating a greater ambiguity, might be communicated using some positive and some negative cues at the same time. This is very likely because mixed feelings are very common in social interaction (e.g., Planalp, 1998; Omdahl, 1995; Oatley & Duncan, 1992). Walther and D'Addario (2001) compared mixed messages with "pure" messages. By a "pure" message they mean a verbal message with a complementing emoticon, or a verbal message without an emoticon. In our study we define a "pure" message as a strictly verbal message, without an emoticon. We hypothesize that emoticons can create the same ambiguity as nonverbal cues in F2F interaction. Therefore, we expect that:

2a. A negative verbal message coupled with a smile emoticon is more ambiguous than a negative verbal message alone or a positive verbal message alone.

2b. A positive verbal message coupled with a frown emoticon is more ambiguous than a positive verbal message alone or a negative verbal message alone.

Mixed messages might be more difficult to interpret. Walther et al. (2001) argued that, in mixed messages, the valences of verbal and nonverbal messages may cancel each other out, resulting in a more neutral interpretation overall. Therefore, we expect that:

3a. A negative verbal message coupled with a smile emoticon conveys less negativity than a negative pure message and less positivity than a positive pure message.

3b. A positive verbal message coupled with a frown emoticon conveys less positivity than a positive pure message and less negativity than a negative pure message.

But these messages may also convey more sarcasm. Sarcasm might be communicated using positive words but a negative tone or the other way around (Planalp & Knie, 2002). Therefore, it is expected that:

3c. A negative verbal message accompanied with a smile conveys greater sarcasm than a positive or a negative pure message.

3d. A positive verbal message accompanied with a frown conveys greater sarcasm than a positive or a negative pure message.

Winks

The wink emoticon is two-sided, the smiling aspect suggests positivity, the wink connotes an extra dimension of humor or irony. No matter what the valence of a message is, a wink implies that the message has an ulterior meaning and therefore might be sarcastic (Rezebeck & Cochenour, 1998; Walther et al., 2001). As a result, we hypothesize that:

4a. A negative message coupled with a wink conveys less negativity than a negative pure message.

4b. A positive verbal message coupled with a wink conveys less positivity than a positive pure message.

4c. A negative verbal message accompanied with a wink conveys greater sarcasm than a negative pure message.

4d. A positive verbal message accompanied with a wink conveys greater sarcasm than a positive pure message.

Mood

Because participants are the subject in the messages in our study, we argue that they are emotionally involved in the messages. Therefore, we hypothesize that besides

interpreting the messages as more positive or more negative, this also has an effect on how they feel after reading a message. We expect that:

5a. A positive message coupled with a frown conveys a more negative feeling than a positive pure message.

5b. A negative message coupled with a smile conveys a more positive feeling than a negative pure message.

5c. A negative message accompanied with a wink conveys a more positive feeling than a negative pure message.

5d. A positive message accompanied with a wink conveys a more negative feeling than a positive pure message.

This paper presents two experimental studies. The first one was conducted in a behavioral lab, the second one in a more natural environment, namely, a secondary school.

STUDY 1

Method

Participants

Participants (*N* = 80) were psychology students from the Erasmus University Rotterdam in the Netherlands. Students were recruited from a subject pool for research participation credits in psychology courses. The group consisted of 15 men and 65 women. The mean age was 19.86 years (*SD* = 2.32). Seventy participants were students in their first year of college, 9 in the second year and 1 in the fourth year. They all participated on a voluntary basis and received no financial reward for their participation.

Procedure

Participants signed in for a study about MSN and emoticons. The researcher contacted the students to make an appointment to visit the behavioral lab and to participate in the research. Participants received a questionnaire which they filled out individually. Participation time was approximately 30 minutes.

Materials and Design

The instruments used in this research are based on the paradigm of Walther and D'Addario (2001). The first page explained that the study involved their experience with email and chatting, and it told them that they were about to read email messages after which they would have to answer a number of questions. Each message contained an evaluation of the participant's role as chairman in an educational discussion group. At this point the manipulations were induced. In line with Walther et al. (2001) the valence of the messages varied (positive, negative). In contrast to Walther et al.'s study (2001) we added a neutral message condition. Furthermore, distinct from the original paradigm, we manipulated the sender of the message (stranger, good friend). The evaluation of the participant's role in the discussion group was immediately followed by one of the three emoticons (smile, frown, wink) or left blank in case of the control condition. This results in a 3 (valence: positive, negative, neutral) x 2 (partner: stranger, good friend) x 4 (emoticon: smile, frown, wink, blank) design. All participants took part in all conditions, resulting in a within-subject design. Conditions were randomly presented to the participants.

The questionnaire contained the dependent variables in this study (see Table 1 for an overview). These were largely in line with those of Walther et al. (2001), but were adjusted to our evaluation message. First, participants were asked to rate on a seven-point scale how familiar the interaction partner was to them and how positively they rated the message. These were our manipulation checks.

Several items assessed participants' impressions of the message writer's attitude toward their performance as chairman, the writer's affect and other characteristics of the message. Another five items assessed how difficult the message was to understand, how serious the message was, how ambiguous the message was, how un/happy the writer was, and how sincere the writer was (Walther et al., 2001). Additional items asked participants to assess how much happiness, sarcasm and humor the writer portrayed (Walther & D'Addario, 2001). We added a question assessing the mood of the participants after reading the message. The measures are presented in Table 1.

The next part of the study consisted of a questionnaire assessing the participants' impressions of the message writer's motive to use a certain emoticon. The emoticons used were smile, frown and wink. All motives were measured on 7-point scales, with responses ranging from 1 (*totally disagree*) to 7 (*totally agree*). For example, participants were asked to rate how much they agreed with the following statement: "when the writer of a message uses the emoticon 'smile', he/she wants to express his/her emotions". The motives measured for each emoticon were: to express emotion, to strengthen the message, to manipulate the interaction partner, to express humor, to put a remark into perspective, to regulate the interaction, and to express irony.

Finally, a scale assessing how positively they rated the emoticons (1 = very negative, 7 = very positive) was included.

Table 1. Measures of Study 1 and Study 2

How do you feel after reading this message? (1 = very negative, *7*= very positive)

How positively do you rate the message? (1 = *very negative*, 7= *very positive*)

How familiar was the sender of the message? (1 = *very unfamiliar*, 7 = *very familiar*)

How does the sender evaluate your performance as a chairman? (1 = *very negative*, 7= *very positive*)

How ambiguous was the message? (1 = *very ambiguous, 7 = very unambiguous*)

How serious was the message? (1 = *not serious at all*, 7 = *very serious*)

How easy was it to understand the message? (1= *very easy*, 7 = *very difficult*)

How happy was the writer of the message? (1= *very sad*, 7 = *very happy*)

How sincere was the writer of the message? (1= *very insincere*, 7= *very sincere*)

On a scale from 1 to 100, with 1 being the least, and 100 being the most, how much happiness did the writer of the message portray?

On a scale from 1 to 100, with 1 being the least, and 100 being the most, how much sarcasm did the writer of the message portray?

On a scale from 1 to 100, with 1 being the least, and 100 being the most, how much humor did the writer of the message portray?

Results

Manipulation checks

A 3 (valence) x 2 (partner) x 4 (emoticon) repeated-measures ANOVA was conducted on how positively the participants rated the message. The multivariate main effect of valence was significant, $F(2.77) = 206.59$, $p<0.001$. Participants rated positive messages more positively ($M = 5.87$, $SD = 0.93$), negative messages more negatively ($M = 2.36$, $SD = 0.99$); neutral messages were rated neutrally ($M = 3.76$, $SD = 0.94$). All means differed significantly from each other ($p<0.001$).

A 3 (valence) x 2 (partner) x 4 (emoticon) repeated-measures ANOVA was conducted on the participants' rating of how familiar the sender of the message was. The multivariate main effect of partner was significant, $F(1.78) = 85.44$, $p<0.001$. In the good friend condition the interaction partner was rated as more familiar ($M = 5.39$, $SD = 1.53$) than in the stranger condition ($M = 2.75$, $SD = 1.61$), $p<0.001$.

Strengthen a message

A 3 (valence) x 2 (partner) x 4 (emoticon) repeated-measures ANOVA was conducted on how positively the participants rated the message. The interaction effect between valence and emoticon was found to be significant, $F_{(6.73)} = 17.92$, $p<0.001$ (see Table 2 for means and univariate effects). A positive message coupled with a smile was rated more positively ($M = 6.44$, $SD = 0.88$) than a positive pure message ($M = 6.18$, $SD = 1.02$), $p<0.001$. However, a negative message accompanied with a frown ($M = 1.97$, $SD = 1.04$) was rated equally negatively to a negative pure message ($M = 1.83$, $SD = 1.07$).

Table 2. Univariate interaction effects valence x emoticon on how positively the participants rate the message.

Valence	Emoticon	Study 1		Study 2	
		Mean	SD	Mean	SD
Positive	Smile	6.44$_a$	.88	5.30$_a$	1.06
	Frown	4.68$_b$	1.55	4.33$_b$	1.37
	Wink	6.17$_c$	1.29	5.65$_c$	1.32
	Control	6.18$_c$	1.02	5.48$_c$	1.14
Negative	Smile	2.55$_a$	1.44	2.40$_a$	1.28
	Frown	1.97$_b$	1.04	2.02$_b$	.97
	Wink	3.08$_a$	1.57	2.68$_c$	1.31
	Control	1.83$_b$	1.06	2.04$_b$	.99
Neutral	Smile	4.25$_a$	1.25	4.49$_a$	1.02
	Frown	2.86$_b$	1.12	3.28$_b$	1.09
	Wink	4.37$_a$	1.40	4.58$_a$	.98
	Control	3.57$_b$	1.20	3.85$_c$	1.09

Note. Ratings were made on 7-point scales (1 = *the message is very negative, 7 = the message is very positive).* Means that do not share the same subscript differ at least at $p<0.05$.

We also conducted a 3 (valence) x 2 (partner) x 4 (emoticon) repeated-measures ANOVA on how much happiness the writer of the messages portrayed. The results showed a significant interaction effect of valence and emoticon, $F_{(6.72)} = 5.85$, $p<0.001$. Univariate analysis showed that the writer of a positive message coupled with a smile portrayed more happiness ($M = 74.79$, $SD = 24.20$) than the writer of a positive pure message ($M = 42.09$, $SD = 30.12$), $p<0.001$. However, the writer of a negative message

accompanied with a frown (M = 9.94, SD = 16.05) portrayed equal happiness to the writer of a negative pure message (M = 8.95, SD = 15.82). Hypothesis 1a is confirmed and Hypothesis 1b is rejected.

Mixed messages

To test Hypotheses 2a and 2b, a 3 (valence) x 2 (partner) x 4 (emoticon) repeated-measures ANOVA was conducted on how ambiguously the participants rated the message. Results showed a significant interaction effect between valence and emoticon, $F(6.71)$ = 27.00, $p<0.001$ (see Table 3 for means and univariate effects). A negative verbal message coupled with a smile emoticon was rated more ambiguously (M = 4.64, SD = 2.22) than a negative pure message ($M_{control}$ = 1.97, SD = 1.50), $p<0.001$. It was also rated as being more ambiguous than a positive pure message ($M_{control}$ = 1.86, SD = 1.28), $p<0.001$. Hypothesis 2a is confirmed. A positive message coupled with a frown was significantly more ambiguous (M = 5.24, SD = 1.86) than a positive pure message ($M_{control}$ = 1.86, SD = 1.28), $p<.001$. It was also more ambiguous than a negative pure message ($M_{control}$ = 1.97, SD = 1.50), $p<0.001$. Hypothesis 2b is confirmed.

Table 3. Univariate interaction effects valence x emoticon on how much ambiguity the message portrays.

Valence	Emoticon	Study 1		Study 2	
		Mean	SD	Mean	SD
Positive	Smile	1.78$_a$	1.12	2.90$_{ab}$	1.22
	Frown	5.24$_b$	1.84	4.08$_d$	1.39
	Wink	2.49$_c$	2.10	3.13$_{ac}$	1.34
	Control	1.86$_a$	1.28	3.02$_{bc}$	1.31
Negative	Smile	4.64$_a$	2.22	4.20$_b$	1.42
	Frown	2.37$_b$	1.68	3.51$_a$	1.58
	Wink	5.32$_c$	1.86	4.52$_a$	1.42
	Control	1.97$_d$	1.50	3.43$_c$	1.60

Note. Ratings were made on 7-point scales (1 = *very unambiguous,* 7 = *very ambiguous).* Means that do not share the same subscript differ at least at $p<0.05$.

A 3 (valence) x 2 (partner) x 4 (emoticon) repeated-measures ANOVA was conducted on how positively the participants rated the message. The interaction effect between valence and emoticon was found to be significant, $F(6.73)$ = 17.92, $p<0.001$ (see Table 2 for means and univariate effects). A negative message with a smile emoticon was rated

more positively ($M = 2.55$, $SD = 1.44$) than a negative pure message ($M_{control} = 1.83$, $SD = 1.06$, $p<0.001$); and less positively than a positive pure message ($M_{control} = 6.18$, $SD = 1.02$, $p<0.001$). Hypothesis 3a is confirmed.

A positive message with a frown ($M = 4.68$, $SD = 1.55$) was rated less positively than a positive pure message ($M_{control} = 6.18$, $SD = 1.02$, $p<0.001$) and less negatively than a negative pure message ($M_{control} = 1.83$, $SD = 1.06$, $p<0.001$). This supports Hypothesis 3b.

A 3 (valence) x 2 (partner) x 4 (emoticon) repeated-measures ANOVA was conducted on how much sarcasm the writer of the message portrayed. The interaction between valence and emoticon was significant, $F(6.72) = 16.21$, $p<0.001$. See Table 4 for means and univariate effects. The mixed messages, positive with a frown, negative with a smile, portray more sarcasm than the pure messages. Hypotheses 3c and 3d are supported.

Table 4. Univariate interaction effects valence x emoticon on how much sarcasm the writer of the message portrays.

		Study 1		Study 2	
Valence	Emoticon	Mean	SD	Mean	SD
Positive	Smile	8.01_a	21.45	15.39_a	18.07
	Frown	39.24_b	37.67	39.58_c	26.16
	Wink	24.88_b	38.34	24.27_c	23.55
	Control	7.83_a	14.88	14.79_a	18.45
Negative	Smile	51.13_a	33.49	44.79_a	29.49
	Frown	11.90_b	23.01	17.80_c	20.54
	Wink	55.99_a	37.51	47.76_a	29.87
	Control	8.20_b	17.83	14.52_c	20.11

Note. Ratings were made on 100-point scales (*how much sarcasm did the writer of the message portray*?). Means that do not share the same subscript differ at $p<0.001$. Means that share the subscript b differ at p<0.05.

Winks

A 3 (valence) x 2 (partner) x 4 (emoticon) repeated-measures ANOVA was conducted on how positively the participants rated the message. We have seen in a section before that the interaction effect between valence and emoticon was significant, $F(6.73) = 17.92$, $p<0.001$ (unpublished data) (see Table 2 for univariate effects and means). Adding a wink to a negative message ($M = 3.08$, $SD = 1.57$) made the message less negative than a negative pure message ($M_{control} = 1.83$, $SD = 1.06$, $p<0.001$). When a positive message

was accompanied with a wink it was equally positive to a positive verbal message without an emoticon (M = 6.18, SD = 1.02, ns). As a consequence of these results, Hypothesis 4a is supported and Hypothesis 4b is rejected.

A 3 (valence) x 2 (partner) x 4 (emoticon) repeated-measures ANOVA was conducted on how much sarcasm the writer of the message portrayed. The interaction between valence and emoticon was significant, $F(6.72)$ = 16.21, $p<0.001$. See Table 4 for univariate effects. The mixed messages, positive with a frown, positive with a wink, negative with a smile and negative with a wink, portray more sarcasm than the pure messages. Hypotheses 4c and 4d are supported.

Mood

A 3 (valence) x 2 (partner) x 4 (emoticon) repeated-measures ANOVA was conducted on how the participants felt after reading the message. There was a significant main effect of valence, $F(2.77)$ = 140.64, $p<0.001$, a positive message resulted in a more positive feeling (M = 5.74) than negative message (M = 2.73) and a neutral message (M = 3.90). There was also a main effect of emoticon, $F(3.76)$ = 30.39, $p<0.001$, a smile emoticon (M = 4.47) resulted in a more positive feeling than a frown emoticon (M = 3.41) or a message without an emoticon (M = 3.89). Messages accompanied by a wink emoticon resulted in the most positive feeling (M = 4.75), $p<0.001$. The interaction between valence and emoticon was also significant, $F(6.73)$ = 14.34, $p<0.001$. Taking a closer look at the univariate effects, we see that a positive message accompanied by a frown resulted in a less positive feeling (M = 4.64, SD = 1.51) than a positive pure message ($M_{control}$ = 5.99, SD = 1.14, $p<0.001$). A positive message with a wink (M = 6.10, SD = 1.30) did not result in a significantly different feeling in comparison with a positive pure message. Hypothesis 5a is supported, but we did not find support for Hypothesis 5d.

A negative message with a smile resulted in a more positive feeling (M = 2.88, SD = 1.56) than a negative pure message ($M_{control}$ = 2.05, SD = 1.34, $p<0.001$). A negative message accompanied by a wink (M = 3.54, SD = 1.81) resulted in a significantly more positive feeling than all the other negative messages (M_{frown} = 2.45, SD = 1.25; $M_{control}$ = 2.05, SD = 1.34; M_{smile} = 2.88, SD = 1.56, all $p<0.001$). Hypotheses 5b and 5c are supported.

Perceived motives for emoticon use

A 3 (emoticon) x 7 (motive) repeated-measures ANOVA was conducted to examine the interpretation of the motives of the writer of the message for using a certain emoticon. Results showed a main effect of emoticon, $F(2.76)$ = 65.31, $p<.001$, and a main effect of motive $F(6.72)$= 22.96, $p<.001$. All emoticons differed significantly from each other.

Univariate analyses showed that all motives differed significantly from each other, except the motives, "manipulating interaction partner" from "putting into perspective" and "regulating the interaction". "Strengthen the message" ($M = 5.20$, $SD = 1.07$), "expressing emotion" ($M = 4.70$, $SD = 1.19$), "regulating the interaction" ($M = 4.36$, $SD = 1.05$) and "putting into perspective" ($M = 4.13$, $SD = 0.99$) were the most common interpretations of the motives of the user of the emoticons.

The interaction between emoticon and motive was also significant, $F(12.66) = 18.40$, $p<0.001$. See Table 5 for univariate interaction effects and means.

Table 5. Univariate interaction effects motive x emoticon on the interpretation of writer of a message's motive to use an emoticon.

Motive	Emoticon	Study 1		Study 2	
		Mean	SD	Mean	SD
Express emotion	Smile	4.58_a	1.70	4.82_a	1.85
	Frown	5.37_b	1.62	5.12_a	1.69
	Wink	4.17_c	1.61	4.26_b	1.77
Strengthen message	Smile	4.83_a	1.78	4.93_a	1.74
	Frown	5.36_b	1.43	4.84_a	1.60
	Wink	5.40_b	1.42	5.09_a	1.62
Manipulate partner	Smile	3.61_a	1.76	3.69_a	1.90
	Frown	3.97_a	1.74	3.67_a	1.77
	Wink	4.58_b	1.57	4.26_b	1.82
Express humor	Smile	4.02_a	1.72	4.05_a	1.72
	Frown	2.21_b	1.57	2.89_b	2.05
	Wink	5.62_c	1.23	4.76_c	1.84
Put into perspective	Smile	4.23_a	1.62	4.19_a	1.59
	Frown	3.42_b	1.57	4.00_a	1.83
	Wink	4.74_c	1.56	4.42_a	1.64
Regulate interaction	Smile	4.95_a	1.64	4.61_a	1.53
	Frown	2.97_b	1.53	3.17_b	1.65
	Wink	5.15_a	1.52	4.72_a	1.55
Express irony	Smile	3.10_a	1.82	3.59_a	1.81
	Frown	2.80_a	1.49	3.08_b	1.58
	Wink	5.05_b	1.70	4.44_c	1.77

Note. Ratings were made on 7-point scales (1 = *the other does not use this emoticon for this motive*, 7 = *the other definitely uses this emoticon for this motive).* Means that do not share the same subscript differ at least at $p<0.05$.

This experimental study showed some interesting results which will be more extensively discussed in the general discussion. In the next study, we will try to replicate these results in a more natural setting and with a different study group to find out whether these results can be generalized to other situations and populations.

STUDY 2

Participants again participated in an experiment in which evaluative email messages were presented to them. The dependent measures were equal to those in study 1. The scenarios were adapted to a situation that is more suitable to the researched group.

Method

Participants

Participants (N = 105) were secondary school students from a school in Heerlen (the Netherlands). Participants from the fourth year were recruited. The group consisted of 49 men and 56 women. The mean age was 15.48 years (SD = 0.74). They all participated on a voluntary basis and as a reward for participating, lots were drawn for film vouchers.

Procedure

The researcher contacted the teachers to make an appointment to conduct the research at the school. They decided to let the students participate together in a classroom under the supervision of a teacher. Participants received a questionnaire which they filled out individually. Participation took about 30 minutes.

Materials and Design

The materials were equal to those in the first study. We only made an adjustment in the messages used. Secondary school students are not used to working in discussion groups with a chairman. So we choose a comparable situation which was more suitable to their daily routine. The setting in this study was that the student gave a presentation to the class. The email message they received contained an evaluation of their performance as a presenter. Here the manipulations were induced.

This results in a 3 (valence: positive, negative, neutral) x 2 (partner: stranger, good friend) x 4 (emoticon: smile, frown, wink, blank) design. All participants took part in all conditions, resulting in a totally within-subject design.

Results

Manipulation checks

A 3 (valence) x 2 (partner) x 4 (emoticon) repeated-measures ANOVA was conducted on how positively the participants rated the message. The multivariate main effect of valence was significant, $F(2.83) = 181.63$, $p<0.001$. Participants rated positive messages more positively ($M = 5.35$, $SD = 0.89$), negative messages more negatively ($M = 2.29$, $SD = 0.94$); neutral messages were rated neutrally ($M = 4.05$, $SD = 0.73$). All means differ significantly at $p<0.001$.

A 3 (valence) x 2 (partner) x 4 (emoticon) repeated-measures ANOVA was conducted on the participants' rating of how familiar the sender of the message was. The multivariate main effect of partner was significant, $F(1.85)= 128.53$, $p<0.001$. In the good friend condition the interaction partner was rated as more familiar ($M = 5.07$, $SD = 1.34$) than in the stranger condition ($M= 2.52$, $SD = 1.23$), $p<0.001$.

Strengthen a message

A 3 (valence) x 2 (partner) x 4 (emoticon) repeated-measures ANOVA was conducted on how positively the participants rated the message. The interaction effect between valence and emoticon was found to be significant, $F(6.79) = 12.93$, $p<0.001$. A positive message coupled with a smile was rated more positively than a positive pure message alone. However, a negative message accompanied with a frown was rated as negatively as a negative pure message alone (see Table 2 for means and univariate interaction effects).

We also conducted a 3 (valence) x 2 (partner) x 4 (emoticon) repeated-measures ANOVA on how much happiness the writer of the messages portrayed. The results showed a significant interaction effect of valence and emoticon, $F(6.77) = 7.07$, $p<0.001$. Univariate analysis showed that the writer of a positive message coupled with a smile portrayed more happiness ($M = 69.84$, $SD = 23.03$) than the writer of a positive pure message ($M = 41.85$, $SD = 27.28$, $p<0.001$). However, the writer of a negative message accompanied with a frown ($M = 11.99$, $SD =16.41$) portrayed just as much happiness as the writer of a negative pure message ($M = 14.23$, $SD = 18.70$). Hypothesis 1a is confirmed and Hypothesis 1b is rejected.

Mixed messages

To test the Hypotheses 2a and 2b, a 3 (valence) x 2 (partner) x 4 (emoticon) repeated-measures ANOVA was conducted on how ambiguously the participants rated the

message. Results showed a significant interaction effect between valence and emoticon, $F(6.78) = 5.65$, $p<0.001$ (see Table 3 for univariate effects and means). A negative verbal message coupled with a smile emoticon was rated more ambiguously ($M = 4.20$, $SD = 1.42$) than a negative pure message ($M_{control} = 3.43$, $SD = 1.60$), $p<0.001$. It was also rated more ambiguously than a positive pure message ($M_{control} = 3.02$, $SD = 1.31$), $p<0.001$. Hypothesis 2a is confirmed. A positive message coupled with a frown was significantly more ambiguous ($M = 4.08$, $SD = 1.39$) than a positive pure message ($M_{control} = 3.02$, $SD = 1.31$), $p<0.001$. It was also more ambiguous than a negative pure message ($M_{control} = 3.43$, $SD = 1.60$), $p<0.001$. Hypothesis 2b is confirmed.

A 3 (valence) x 2 (partner) x 4 (emoticon) repeated-measures ANOVA was conducted on how positively the participants rated the message. In the previous section, we found that the interaction effect between valence and emoticon was significant, $F(6.79)= 12.93$, $p<0.001$ (see Table 2 for univariate effects and means). A negative message with a smile emoticon was rated more positively than a negative pure message and less positively than a positive pure message (see Table 2 for means and effects). Hypothesis 3a is confirmed. A positive message with a frown was rated less positively than a positive pure message and more positively than a negative pure message (see Table 2). This supports Hypothesis 3b.

A 3 (valence) x 2 (partner) x 4 (emoticon) repeated-measures ANOVA was conducted on how much sarcasm the writer of the message portrayed. The interaction between valence and emoticon was significant, $F(6.79) = 14.03$, $p<0.001$. See Table 4 for univariate effects. The mixed messages, positive with a frown and negative with a smile, portray more sarcasm than the pure messages. Hypotheses 3c and 3d are supported.

To examine the impact of emoticons on the valence of the message, it is useful to examine the neutral condition. These results (see Table 2 for means and univariate effects) show that by adding a frown to a neutral message, this message was rated as more negative than a neutral pure message. A neutral message accompanied with a smile was more positive than a neutral pure message.

Winks

A 3 (valence) x 2 (partner) x 4 (emoticon) repeated-measures ANOVA was conducted on how positively the participants rated the message. We have seen before that the interaction effect between valence and emoticon was significant, $F(679) = 12.93$, $p<0.001$ (unpublished data) (see Table 2 for means and univariate effects). Adding a wink to a negative message made the message less negative than a negative pure message. When a positive message was accompanied with a wink it was equally positive to a positive verbal message without an emoticon. As a consequence of these results, Hypothesis 4a is supported and Hypothesis 4b is rejected.

A 3 (valence) x 2 (partner) x 4 (emoticon) repeated-measures ANOVA was conducted on how much sarcasm the writer of the message portrayed. The interaction between valence and emoticon was significant, $F(6.79) = 14.03$, $p<0.001$. See Table 4 for univariate effects. The positive with a wink and negative with a wink mixed messages portrayed more sarcasm than the pure messages. Hypotheses 4c, and 4d are supported.

Mood

A 3 (valence) x 2 (partner) x 4 (emoticon) repeated-measures ANOVA was conducted on how the participants felt after reading the message. There were significant main effects of valence, $F(2.83) = 136.81$, $p<0.001$ and emoticon, $F(3.82) = 55.91$, $p<0.001$. The interaction between valence and emoticon was also significant, $F(6.79) = 9.31$, $p<0.001$. Taking a closer look at the univariate effects shows that a positive message accompanied by a frown resulted in a less positive feeling ($M = 4.57$, $SD = 1.34$) than a positive pure message ($M_{control} = 5.41$, $SD = 1.29$, $p<0.001$). A positive message with a wink ($M = 5.77$, $SD = 1.16$) resulted in a less positive feeling than a positive message with a supporting smile ($M_{smile} = 6.05$, $SD = 0.96$, $p<0.05$), but in a more positive feeling than a positive verbal message without an emoticon ($M_{control} = 5.41$, $SD = 1.29$, $p<0.01$). Hypothesis 5a is supported, and Hypothesis 5d is partially supported.

A negative message with a smile resulted in a more positive feeling ($M = 2.81$, $SD = 1.47$) than a negative pure message ($M_{control} = 2.27$, $SD = 1.13$, $p<0.001$). A negative message accompanied by a wink ($M = 3.15$, $SD = 1.47$) resulted in a significantly more positive feeling than all the other negative messages ($M_{frown} = 2.50$, $SD = 1.33$, and $M_{control} = 2.27$, $SD = 1.13$, both $p<0.001$ and $M_{smile} = 2.81$, $SD = 1.47$, $p<0.05$). Hypotheses 5b and 5c are supported.

Perceived motives for emoticon use

A 3 (emoticon) x 7 (motive) repeated-measures ANOVA was conducted to examine the interpretation of the motives of the writer of the message for using a certain emoticon. Results showed a main effect of emoticon, $F(2.85) = 15.67$, $p<0.001$ and a main effect of motive $F(6.81) = 11.21$, $p<0.001$. All emoticons differed significantly from each other. Univariate analyses showed that most motives differed significantly from each other. "Express irony", "express humor" and "manipulating the interaction partner" were not significantly different from each other. The motives "putting into perspective" and "regulating the interaction" were not significantly different either. "Strengthen the message" ($M = 4.95$, $SD = 1.21$), "expressing emotion" ($M = 4.73$, $SD = 1.38$), "putting into perspective" ($M = 4.20$, $SD = 1.29$) and "regulating the interaction" ($M = 4.17$, $SD = 1.15$) were the most common interpretations of the motives of the user of the emoticons.

The interaction between emoticon and motive was also significant, $F_{(12.75)} = 9.71$, $p<0.001$. See Table 5 for univariate interaction effects and means.

General discussion

The present study was designed to examine the role of emoticons on online message interpretation. Walther and D'Addario (2001) concluded that emoticons have limited impact on message interpretation. However, the present study demonstrated that emoticons do influence online message interpretation. Furthermore, we examined the interpretation of senders' motives for adding emoticons to their messages.

The present study shows interesting results, which are consistent over both studies. Results revealed that emoticons are useful in strengthening the intensity of a message. A positive message with a smile is rated more positively than a positive pure message, and a negative message with a supporting frown is more negative than a negative pure message. The same effects are found for the amount of happiness the writer of the message portrayed. This is in line with the power of nonverbal cues to intensify a verbal message in F2F communication (Lee & Wagner, 2002).

On the ambiguity aspect of messages, the hypotheses were all supported. Negative messages coupled with a smile emoticon, and positive messages coupled with a frown were rated significantly more ambiguously than pure messages. This is consistent with the findings of Leathers (1986) who states that inconsistencies between verbal meanings and nonverbal cues are said to be more ambiguous, which can more easily lead to miscommunication.

What happens when emoticons contradict the valence of the verbal messages? Negative verbal messages accompanied with a smile were interpreted more positively than a negative pure message but less positively than a positive pure message. Positive verbal messages accompanied with a frown were rated less positively than positive pure messages and more positively than negative pure messages. This indicates that online verbal messages have more influence than the 'nonverbal' part of the message, the emoticon. Emoticons have an impact on the valence of the message, but they do not have the strength to change the valence of the verbal message from positive to negative or from negative to positive. The hypotheses concerning the wink emoticon are partially supported. A negative message accompanied by a wink emoticon indeed conveys less negativity than a negative pure message. However, the positivity of a positive verbal message with a wink was equal to a positive verbal message alone. A possible explanation could be that because the participants were the subject of the messages, they were eager to believe that their performance was good and therefore did not attach

much value to a wink emoticon, for which the valence is more debatable than that of a frown or smile.

All messages accompanied with an emoticon with a different valence than the verbal message conveyed greater sarcasm than pure messages. The hypotheses concerning the sarcasm issue are supported. Next to communicating sarcasm by positive words accompanied with a negative tone or the other way around (Planalp & Knie, 2002), it is also possible to express sarcasm online by varying the valence of the emoticon and the valence of the message.

The impact of mixed messages can be extended to the way participants feel after reading them. A positive message with a frown results in a less positive feeling than a positive pure message, while negative messages accompanied by a wink or a frown result in a more positive feeling than negative pure messages. A wink in addition to positive messages conveys an equally positive feeling to positive pure messages. An alternative explanation can be that a wink emoticon is not rated significantly less positively than a smile emoticon. And in positive messages, a positively rated emoticon has less impact on the mood of the participant than the messages in which the valence of the message and the emoticons are contradictory.

In contrast with the results of Walther and D'Addario's (2001), we can conclude that emoticons do have a certain impact on message interpretation and that they can serve some of the same functions as actual nonverbal behavior. In terms of the known relationship between verbal and nonverbal communication, the emoticon can definitely serve the function of complementing and enhancing verbal messages. We have indications that, at least with strongly valenced messages, the emoticon does not have the strength to contradict the message. A positive message with a frown is still more positive than a negative message. In more neutral settings, emoticons probably have more impact.

Furthermore, we have examined the interpretation of the motives for emoticon use. In both studies, "expressing emotion", "strengthen the message", "regulating the interaction" and "putting into perspective" were the most common interpretations of the motives. Based on the results of the present studies we can conclude that emoticons can strengthen a message, and have an impact on how the receiver of the message feels. It is noteworthy that previous research has demonstrated that "putting something into perspective" is not a very popular motive for using an emoticon (Derks, Bos, von Grumbkow, 2006), but that receivers interpret these emoticons in that way. Emoticons are interpreted as a signal of emotional information in addition to a verbal message (Thompson & Foulger, 1996) and the studies reported here show that emoticons are also used for communicational ends. This is in line with evidence from face-to-face research which showed that facial displays are used for emotional expression as well as to

communicate social motives (e.g., Hess, Banse, & Kappas, 1995; Jakobs, Manstead, & Fischer, 1999). Emoticons can serve as nonverbal surrogates for facial behavior and do have an impact on message interpretation. Although they are used more consciously and are not, literally speaking, nonverbal behavior (Walther & D'Addario, 2001), they do give an added value to textual messages online. Apparently there is a need to imbue messages with emoticons and provide some additional nonverbal meaning to a message.

Positive qualities of the reported studies are that the results were consistent over two studies. The experiments were conducted in two different settings. First in a behavioral lab and subsequently in a more natural setting. The paradigm of Walther and D'Addario (2001) was improved, resulting in interesting results. However, the present studies also have some limitations. Participants were asked to imagine that they received an evaluative email concerning their performance. This situation is evidently not the same as a natural conversation online. This has consequences for the generalization of the results to actual behavior. Furthermore, participants did not actually interact with each other but rated email messages they received without responding. For instance, we asked them to imagine they had received the message from their best friend. Possibly the language style of the message was different from the language style their best friend would use. Finally, we printed the messages on paper; this might be another perception than actually emailing in a purpose-designed email interface. For future research it would be useful to examine real-life online interactions.

The overall conclusion of the studies presented in this paper is that emoticons can serve as useful nonverbal surrogates for facial behavior in online communication and do have an impact on message interpretation.

Chapter 6

Concluding remarks

;-)

Chapter 6

Concluding remarks

The present dissertation examined the use of emoticons in text-based computer-mediated communication (CMC). An obvious difference between text-based CMC and face-to-face (F2F) communication is the lack of nonverbal cues in CMC. The absence of these cues in CMC makes that interactants in CMC have to rely on different cues, such as language, style, timing and speed of writing, use of punctuation and emoticons (Mantovani, 2001). Additionally, when these nonverbal cues are not available, interactants substitute the expression of relational messages into cues available in CMC (e.g., social content, emoticons, style, and timing of verbal messages) (Walther, 1992).

In the first chapter, we introduced two central issues of this dissertation. The consequences of the lack of nonverbal cues in text-based CMC for the expression of emotion are examined. Furthermore, it was examined how far emoticons can serve the same functions as nonverbal behavior in F2F communication. This dissertation is entitled "the missing wink". This refers to the fact that people replace nonverbal expressions (real winks) with CMC indicators (emoticon winks). CMC users create a new symbol, an emoticon, to give expression to an old, fundamental, emotion. The emoticon functions as the missing link between nonverbal expression of emotion in F2F life and the emotion that is experienced in cyberspace. Emoticons can make it possible to express feelings in CMC and to become acquainted with other people in the virtual world.

This last chapter is devoted to reflect on the results of the empirical studies and to discuss the theoretical relevance of the results. Several methodological issues are addressed and finally some implications for future research are suggested.

Lack of nonverbal cues in CMC

Email and chat have become very common in daily Western life. Many people replace F2F communication for email and chat (e.g., Walther & Parks, 2002). The lack of nonverbal cues implies that some information will not be fully transferred (e.g., McKenna & Bargh, 2000). Messages typically conveyed by nonverbal cues do not occur in CMC (e.g., Walther, 1995; Burgoon & Saine, 1978; Shaw, 1981). This text-based character of CMC is often seen as the determinant of different social effects of CMC in comparison to face-to-face communication (Walther & Tidwell, 1995).

Walther, Loh and Granka (2005) summarize that there are two prevailing positions with respect to this issue. One position (the *cues-filtered out approach*) holds

that the absence of nonverbal cues withholds interactants important information about emotions, attitudes and partners' characteristics, resulting in a less sociable, relational, understandable and effective communication. (e.g., Short, Williams, & Christie, 1976; Kiesler, Siegel, & McGuire, 1984; Sproull & Kiesler, 1986; Culnan & Markus, 1987). The other position (*Social Information Processing theory*) holds that people adapt to the medium by imbuing verbal messages with contextual and stylistic cues, information about attitudes, emotions (e.g., by the use of emoticons), and personal characteristics allowing for normal relational communication to build up (Walther 1992). This theory explicitly rejects that the absence of nonverbal cues restricts the interactants' capability to exchange individuating information. Walther (1992) assumes that interactants are just as motivated to reduce uncertainty, form impressions and develop affinity in online settings as they are in face-to-face settings.

It is remarkable that the role of emotion in CMC has to date been neglected in the research field. In order to gain insight in emotional communication in CMC, empirical evidence regarding to reduced sociality and visibility are examined by comparing research on emotion in F2F and CMC settings (chapter 2). The studies reviewed suggest that positive emotions are expressed to the same extent in F2F and CMC settings. There are indications that intense negative emotions are even more overtly expressed in CMC. The relative ease with which both positive and negative emotions seem to be expressed can be explained in terms of the anonymity aspect of CMC and the safer environment it creates (e.g., McKenna, Green and Gleason, 2002), as we have concluded in chapter 2. The absence or presence of others influences the emotion regulation (e.g. Evers, Fischer, Rodriquez Mosquera, & Manstead, 2005; Fridlund, 1991, 1994). In situations where others are present, negative reactions on the expression of negative emotions are to be expected. The relative anonymous setting of CMC, in which there is no opportunity to face the interaction partner is therefore assumed to lead to fewer negative appraisals. Another consequence of this relative safe environment with less risk of negative appraisals is that conversing online may also result in greater intimacy (Mckenna et al., 2002). Apparently people have found satisfying ways to cope with the restrictions of CMC, for instance by the use of emoticons or by more explicitly verbalizing their emotions. People are highly satisfied with online communication, which implicates that they share, express and communicate emotions in a way that pleases them (Derks, Fischer, & Bos, 2006). CMC might also make it easier to regulate emotions. There is a choice what to display to your interaction partner, there is no fear of unconsciously leaking nonverbal behavior because of the lack of nonverbal cues, and finally there is time to read over your message before it is submitted which implies there is time to reflect. In conclusion, there are indications that emotional communication online and offline are quite similar. To conclude, we did not find any indications that CMC is a cold

and impersonal medium (e.g., Short, Williams, & Christie, 1976; Sproull & Kiesler, 1986; Kiesler, Siegel, & McGuire, 1984; Siegel, Dubrovsky, Kiesler, & McGuire, 1986). The results of the review in chapter 2 are in line with the social information processing (SIP) approach. When there are no nonverbal cues available interactant finds way to come over it by style, more explicitly verbalizing and the use of emotions allowing normal relational communication to develop (Walther, 1992). In the next section, the function of emoticons as nonverbal surrogates is further elaborated.

Emoticons

Emoticons can provide non-textual information in a text-based environment. Emoticons may serve as nonverbal surrogates and may add a paralinguistic component to a message. In this way emoticons enhance the exchange of emotional information providing additional social cues beyond what is communicated in the verbal part of a message (Thompson & Foulger, 1996). Apparently, CMC users do feel the need to express some of their emotions in short symbols rather than in text because emoticons are prevalent in CMC (Fischer, in press; Huffaker & Calvert, 2005). However, it is still unclear when emoticons are used, how they are interpreted, and whether they are context dependent (see also Walther & D'Addario, 2001).

In this section the results of the studies on emoticon use are discussed. It is examined whether emoticons can serve the same functions and have comparable characteristics as nonverbal cues in F2F communication.

Social context and Interaction partner

The expression of emotions in face-to-face settings is dependent on the social context (e.g., Wagner, Lewis, Ramsey and Krediet, 1992). Research confirms that more emotions are displayed in positive social contexts in comparison to negative social contexts (Lee & Wagner, 2002). Furthermore the interaction partner is an influential factor in emotion regulation. The frequency of emotions increases when the interaction partner is considered to be a friend (e.g., Wagner & Lee, 1999; Hess, Banse, & Kappas, 1995; Fischer, Manstead, & Zaalberg, 2004). There was empirical evidence that participants used more emoticons in socio-emotional contexts in comparison to task-oriented contexts, admitting that the interaction partner interfered with these manipulations. In socio-emotional context they corresponded with a friend, in the task-oriented context with a more anonymous classmate. In the online study, results showed that participants intentionally as well as spontaneously used more emoticons towards friends than towards strangers. Apparently, the line of research that people show more emotions towards

friends (e.g., Jakobs, Manstead, & Fischer, 1999; Wagner & Lee, 1999) can be extended to emoticon use in CMC.

The effects of the valence of the context on emoticon use are not consistent over replications. In an experimental field research among secondary school students (chapter 3) there was no difference in the frequency of emoticon use between negative and positive contexts. This study suffered from some methodological issues. The Internet chats presented to the participants differed on more aspects than just the valence. The social context and the interaction partner interfered with each other and the length of the messages differed in positive and negative contexts. Therefore, in the online study (reported in chapter 4) the valence of the social context was manipulated once more. This time the intention to use an emoticon and the spontaneous emoticons use was assessed. Participants used more emoticons in positive contexts than in negative contexts, spontaneously as well as intentionally. The latter results are in line with the research of nonverbal behavior in face-to-face communication (Lee & Wagner, 2002).

Social motives

The motives for emoticon use were examined in the online study. The motives measured for each emoticon were: to express emotion, to strengthen the message, to manipulate the interaction partner, to express humor, to put a remark into perspective, to regulate the interaction, and to express irony. Overall, results showed that emoticons were most commonly used for the expression of emotion, for strengthening the verbal part of the message and for expressing humour. This is in line with motives and functions of nonverbal behavior in F2F settings. The results plead for a combination of using emoticons for the expression of underlying emotions (Ekman, 1972) and for communicational goals (Fridlund, 1994). Emoticons resemble facial displays and have also social and emotional functions like facial displays in real life (e.g., Manstead, Fischer, and Jakobs ,1999).

Next to examining motives for emoticon use from a sender's perspective, the receiver's side was also studied. As a consequence of the lack of nonverbal cues, the facial feedback is missing which implies that the sender of a message experiences uncertainty whether the receiver of a message interprets the message exactly the way he/she intended it. Therefore the interpretation of the motive the sender had to use an emoticon was assessed in two experiments. The first experiment was conducted in a behavioural lab with college students as participants. The second experiment was conducted in a more natural setting at a secondary school. Results of both studies showed that the motives were mostly interpreted as expressive of emotion,

strengthening a message, regulation the interaction and, for putting the message into perspective.

There are some interesting discrepancies between the intention of the writer and the interpretation of the receiver. Receivers of an email message interpret an emoticon as a sort of damage control from the writer's side although this was not the way the writer intended it to be. The consequence of this discrepancy can be that the receiver interprets a message less serious than it was originally intended. Emoticons are not interpreted as an expression of humour, and this may lead to misunderstanding between the interactants. In CMC the time in between two messages is larger than in F2F communication. This can be problematic in the case of humour. It is interesting that humour has different aspects (individual differences in interpretation, time synchronization) that make it difficult to conclude whether emoticons add humour to a verbal message.

Message interpretation

The impact of emoticons on message interpretation was examined in two studies (chapter 5). Results of study 1 were replicated in study 2. Emoticons are useful in strengthening the intensity of a verbal message which is in line with the function of nonverbal cues in F2F communication (e.g., Lee & Wagner, 2002). Emoticons with an opposite valence as the verbal message they accompanied created greater ambiguity than pure messages. Leathers (1986) showed the same effects for nonverbal cues in F2F communication. Greater ambiguity increases the probability of miscommunication (Leathers, 1986). Emoticons do not have the strength to contradict the verbal message. A negative verbal message in addition to a smile emoticon is interpreted less negative than a pure negative message, but less positive than a positive verbal message. In addition, these mixed messages convey greater sarcasm than pure messages. In F2F communication sarcasm is also communicated by a positive tone or a smile and a negative message or the opposite (Planalp & Knie, 2002). Thus, also in the case of sarcasm the analogy between nonverbal cues and emoticons is demonstrated. Where Walther and D'Addario (2001) had to conclude that emoticons had little impact on message interpretation, we can, based on the results of two studies, conclude that emoticons can at least serve the function of complementing and enhancing verbal messages.

Central issues

What are the implications of the results reported for the central issues of this dissertation? First, the consequences of the lack of nonverbal cues in text-based CMC for the expression of emotion are examined. Furthermore the role of emoticons in CMC is considered. The main conclusion is that emotional communication online and offline seem to be surprisingly similar. Emotions are ubiquitous in CMC and there were no indications that CMC is a cold and impersonal medium. Apparently, people cope with the restrictions of text-based CMC by accepting that there is more time needed to transfer the same amount of information as in F2F communication, and messages are imbued with emoticons to fill the conversational gaps.

Second, it was examined how far emoticons can serve the same functions as nonverbal behavior in F2F communication. The analogy between nonverbal cues in face-to-face communication and emoticons in CMC is established on several aspects. Emoticons depend on social context, in a similar way as nonverbal cues in F2F communication. The influence of the interaction partner on emoticon use in CMC is also comparable with the display of nonverbal cues in F2F communication. The social motives for emoticon use are in line with the evidence in F2F communication in that facial displays are affected by both emotional and social factors (e.g., Hess et al., 1995; Jakobs et al., 1999). Finally, in message interpretation, emoticons can at least serve the functions of complementing and enhancing verbal messages.

Theoretical relevance

One of the main conclusions of this dissertation is that there are similarities between emotional communication online and offline. This is based on the existing analogy between nonverbal cues in F2F communication and emoticons in CMC. However, there are more extending research lines on emotion in F2F communication. In this section it is discussed what the implications of the results presented in the current dissertation are for other theories in the research field of emotion and CMC research.

The proposition that there are a few distinctive facial expressions that reveal a corresponding set of emotions goes back to Darwin (1872), who considered these expressions to be vestiges of basic adaptive patterns shown by our evolutionary ancestors. Many researchers (e.g., Ekman, 1984; Izard, 1971; 1991; Plutchik, 1980) agree that there are six to ten fundamental emotions that can be expressed by the face. The six most fundamental emotional expressions that are uniformly recognized across different cultures are: happiness, surprise, sadness, anger, disgust and fear (Ekman, 1972; 1973). Anger, fear and happiness showed high degrees of accuracy, however the

sad face was often called angry, and inconsistent results for disgust and surprise as well. Since emoticons resemble facial expressions, the question arises whether there also exists a basic set of emoticons that is generally recognized and used to express emotions in CMC. It is indeed possible to define a basic set emoticons that are used most frequently online, consisting of the emoticons: smile, big smile, sad, cry, confused and wink. Emoticons that express one of these fundamental emotions (smile, big smile, sad and cry) are most commonly used in CMC to express emotion. The wink emoticon is also a frequently used emoticon in CMC, but is most used for communicational goals like expressing humor, irony or sarcasm. The emoticon expressing an emotional state of confusion is not used as frequently as the others. In sum, it seems that the emoticons referring to the facial expression of the basic emotions are most used in CMC.

Gender differences in the expression of emotion is a major theme in emotion research. Women are generally more emotionally expressive than men. For example, compared to men, women disclose their feelings to a greater extent (Dindia & Allen, 1992), cry more often (van den Berg, Kortekaas, & Vingerhoets, 1992) and show more nonverbal expressions (Hall, 1984). Men express their anger more often and with greater intensity, where women cry more often when they experience anger (e.g., Eagly & Steffen, 1986; van den Berg et al., 1992). Is this also true for the use of emoticons in CMC? Witmer and Katzman (1997) showed that women overall used more emoticons than men in their sample. Wolf (2000) argued that the stereotype of the emotional women and the inexpressive men seems to be reinforced in her study. However, only in same gender groups. In mixed groups the emoticon use between men and women was not statistically different. Gender differences were not reported in this dissertation. However, gender differences were measured in all studies. In the online survey for example (chapter 4) women more frequently used emoticons than men did. However, when computer experience was taken into consideration, the gender effects disappeared. It is questionable whether there are indeed gender differences in emoticon use. The aspect of gender differences in emoticon use deserves to be explored furthermore and is an interesting issue for future research.

A major theme in CMC is research is the anonymity aspect of this medium. Anonymity is a common feature of communication via e-mail and the Internet especially in initial interactions (Postmes, Spears, Sakhel & de Groot, 2001). Under the protective cloak of anonymity users can express the way they truly feel and think (Spears & Lea, 1994). This can be either negative or positive. A negative effect is that it can result in uninhibited behavior and flaming (Kiesler, Siegel, & McGuire, 1984). Lea et al. (1992) questioned the definitions of uninhibited behavior and flaming used in empirical research. They point out that behaviors included in this category by researchers are very broad and often rather tenuous, including nearly all communicative behavior with an affective and

emotional tone. A positive effect is that anonymity can create a relative safe environment to express emotions (McKenna, Green, & Gleason, 2002). The present dissertation showed that emotions and emoticons are prevalent in CMC. Future research can aim to examine whether the anonymity aspect of CMC accounts for the large expression of emotion in CMC.

Another interesting question is, whether there is a future for the emoticon. MSN, friends' networks like Hyves, ICQ, Skype, all these communicational devices facilitate the use of a webcam these days. Is the webcam a threat for the existence of the emoticon? In the future an increasing amount of communication will probably take place by use of a webcam. Videoconferencing is more similar to F2F communication than text-based CMC is. However, it is also greater infraction of the privacy than text-based CMC is. And the safe environment that text-based CMC creates can be an advantage in several types of social interaction. In the near future we are all multimedia experts and we choose the medium that suits the communicational goals we have for that particular conversation the best. That can be videoconferencing with that special friend that emigrated to a foreign country or an email as first encounter to a potential date. This implicates that as long as text-based CMC is used, there is also a future for the emoticon.

Methodological issues and implications for future research

This dissertation consisted of a theoretical review and four empirical studies using different methodologies (experiment, large field study). A diversity of populations participated in the studies. Secondary school students participated, because they are the "digital" generation who grew up with computers, MSN and email. Many of them cannot imagine life without access to the Internet. Furthermore, college students participated in a lab experiment. And, finally in the online experiment a large representative sample of the Dutch population participated. The diversities in type of research and type of populations are methodological strengths of this dissertation. The replication of the results across different settings and populations demonstrates the generalisation of these results. In reviewing the research field of emotion in CMC we came to the conclusion that there are few empirical studies on the role of emotion in CMC and on emoticons. Therefore, this dissertation is an important piece of the puzzle in figuring out how the expression of emotions is affected by the lack of nonverbal cues and if emoticons can give extra emotional meaning to messages.

Besides strengths, the current dissertation also has some limitations that have to be taken into consideration. First of all we have to remark that the use of emoticons can become habitual over time (Walther & D'Addario, 2001), but that they still are no actual nonverbal behavior. The analogy between nonverbal cues in F2F communication and

nonverbal behavior. The analogy between nonverbal cues in F2F communication and emoticons in CMC is demonstrated in this dissertation. However, the use emoticons is always more deliberate than the facial displays in F2F communication.

On the methodological side of the studies reported, there are also some issues that have to be considered. Emoticons are most used in synchronous chat tools like MSN and ICQ and in email conversations. Preferably, the role of emoticons in CMC had to be examined in real time online conversations between friends and strangers. However, here we have to deal with some ethical issues in manipulating our variables. In the studies reported in this dissertation participants were asked to imagine that they received an email or were contacted by chat. It is possible that the universal language style we used in the messages does not match with the language style their friends normally would use. And additionally, participants think that they would react in the way they did in the experimental setting, but there is no guarantee that they would react exactly the same when they were actually in the situation we simulated. This is a point of consideration in the generalisation of the results. Finally, in some studies the messages were printed on paper, which might be another perception than actually emailing or chatting in a purpose designed interface.

For future research, it might be interesting to let participants actually interact with each other in a natural conversation or use an instructed confederate. The current research had a focus on dyad conversations. It is interesting to examine whether emoticons are also useful in communication in groups or virtual teams. A cross cultural study might be interesting as well. The present studies are all conducted in the Netherlands, a Western, individualistic society. Perhaps in more community based societies there are differences in emoticon use or in motives to use an emoticon.

The present research showed interesting results on the consequences of the lack of nonverbal cues for the expression of emotion in CMC and there were ample implications that emoticons can serve as useful nonverbal surrogates. All taken together, people seem to have found satisfying ways to cope with the restrictions of text-based CMC. Emoticons are ubiquitous in CMC!

References

References

Ambady, N., & Rosenthal, R. (1993). Half a minute: Predicting teacher evaluations from thin slices of nonverbal behavior and physical attractiveness. *Journal of Personality and Social Psychology, 64,* 431-441.

Argyle, M. (1972). Non-verbal communication in human social interaction. In R.A. Hinde (Ed.), *Non-verbal communication,* pp. 243-260. Cambridge: Cambridge University Press.

Ariès, E. (1984). Gender and communication. In P. R. Schaver & C. Hendrick (Eds.), *Sex and Gender* (Review of Personality and Social Psychology, Vol. 7, pp. 149-177). Beverly Hills, CA: Sage.

Bargh, J. A. (2002). Beyond simple truths: the human-Internet interaction. *Journal of Social Issues, 58*(1), 1-8.

Bargh, J.A., & McKenna, K. Y. A. (2004). The Internet and Social Life. *Annual Review of Psychology, 55,* 573-90.

Becht, M. C., & Vingerhoets, A. J. J. M. (2002). Crying and mood change: A cross-cultural study. *Cognition and Emotion, 16* (1), 87-101.

Birnbaum, D. W., Nosanchuck, T. A., & Croll, W. L. (1980). Children's stereotypes about sex differences in emotionality. *Sex Roles, 6,* 435-443.

Brehm, S.S., Kassin, S.M., & Fein, S. (1999). *Social Psychology.* Boston: Hougthon Mifflin Company.

Brody, L. R. (1985). Gender differences in emotional development: A review of theories and research. Journal of Personality, 53, 102-50.

Buck, R., Losow, J. I., Murphy, M., & Constanzo, P. (1992). Social facilitation and inhibition of emotional expression and communication. *Journal of Personality and Social Psychology, 63,* 962-968.

Burgoon, J. K. (1994). Nonverbal signals. In M. R. Knapp & G. R. Miller (Eds.), *Handbook of interpersonal communication* (2nd ed., pp. 229-285). Thousand Oaks, CA: Sage.

Burgoon, J.K., & Saine, T. (1978). *The Unspoken Dialogue: An Introduction to Nonverbal Communication.* Boston: Houghton Mifflin.

Cacioppo, J. T., Bush, L. K., & Tassinary, L. G. (1992). Microexpressive facial actions as a function of affective stimuli: Replication and extension. *Personality and Social Psychology Bulletin, 18,* 515-526.

Calhoun, C. & Solomon, R. C. (1984). *What is an emotion? Classic readings in philosophical psychology*. New york: Oxford University Press.

Carroll, J. M., & Russell, J. A. (1997). Facial expression in Hollywood's portrayel of emotions. *Journal of Personality and Social Psychology, 72,* 164-176.

Chovil, N. (1991).Communicative functions of facial displays. *Journal of Nonverbal Behavior, 15,* 141-154.

Christophe, V., & Rimé, B. (1997). Exposure to the social sharing of emotion: Emotional impact, listener responses and secondary social sharing. *European Journal of Social Psychology, 27,* 37-54.

Collins, N. L., & Miller, L. C. (1994). Self-disclosure and liking: A meta-analytic review. *Psychological Bulletin, 116,* 457-75.

Constantin, C., Kalyanaraman, S., Stavrositu, C., & Wagoner, N. (2002). *To Be or Not To Be Emotional: Impression Formation Effects of Emoticons in Moderated Chatrooms.* Paper presented at the Communication Technology and Policy Division at the 85th annual convention of the Association for Education in Journalism and Mass Communication (AEJMC), Miama, Fl, August. Retrieved August 11, 2006, from http://www.psu.edu/dept/medialab/research/AEJMC.htm

Crystal, D. (2001). *Language and the Internet.* Cambridge: Cambridge University Press.

Culnan, M. J., & Markus, M. L. (1987). Information technologies. In F. M. Jablin, L. L. Putnam, K. H. Roberts, & L. W. Porter (Eds.), *Handbook of organizational communication: An interdisciplinary perspective* (pp. 420-443). Newbury Park, CA: Sage.

Daft, R. L., & Lengel, R. H. (1986). Organizational information requirement, media richness and structural determinants. *Management Science, 32,* 554-571.

Darwin, C. (1872). *The expression of emotions in man and animals.* London: Appleton.

Derks, D., Bos, A. E. R., & von Grumbkow, J. (2007). Emoticons and social interaction on the Internet: the importance of social context. *Computers in Human Behavior, 23,* 842-849

Derks, D., Bos, A. E. R., & von Grumbkow, J. (in press). Emoticons in CMC: social motives and social context. CyberPsychology & Behavior.

Derks, D., Fischer, A. H., & Bos, A. E. R. (in press). The role of emotion in CMC: a review. *Computers in Human Behavior.*

Dimberg, U. & Lundquist, L. O. (1990). Gender differences in facial reactions to facial expressions. *Biological Psychology*, *30*, 151-159.

Dindia, K., & Allen, M. (1992). Sex differences in self-disclosure: A meta-analysis. *Psychological Bulletin, 112,* 106-124.

Eagly, A. H. (1987). *Sex differences in social behavior: A social-role interpretation.* Hillside, NJ: Erlbaum.

Eagly, A. H., & Steffen, V. J. (1986). Gender and aggressive behavior: A meta-analytic review of the social psychological literature. *Psychological Bulletin, 100,* 309-330.

Eagly, A. H., & Wood, W. (1991). Explaining sex differences in social behavior: A meta-analytic perspective. *Personality and Social Psychological Bulletin*, *17*, 306-315.

Ekman, P. (1972). Universals and cultural differences in facial expressions of emotion. In J. Cole (Ed.), *Nebraska Symposium on Motivation* (pp. 207-283). Lincoln: University of Nebraska Press.

Ekman, P. (1973). Cross-cultural studies of facial expressions. In P. Ekman (Ed.), *Darwin and facial expression,* pp. 169-222. New York: Academic Press.

Ekman, P. (1980). *The face of man: Expression of universal emotions in a New Guinea village.* New York: Garland STPM Press.

Ekman, P. (1984). Expression and the nature of emotion. In P. Ekman and K. Scherer (Eds.), *Approaches to emotion,* pp. 319-43. Hillsdale, NJ: Erlbaum.

Ekman, P., & Friesen, W. V. (1969). The repertoire of nonverbal behavior : Categories, origins, usage and codings. *Semiotica, 1,* 49-97.

Erber, R., & Erber, M. W. (2000). The self-regulation of moods: Second thoughts on the importance of happiness in everyday life. *Psychological Inquiry, 11,* 142-149.

Erkens, G., Theil, J., Kanselaar, G., Prangsma, M., & Jaspers, J. (2002). "W8 ff :-)" 'chattalk' in een coöperatieve leeromgeving. *Levende Talen, 3, 2,* 24-34.

Evers, C., Fischer, A. H., Rodriquez Mosquera, P. M., & Manstead, A. S. R. (2005). Anger and social appraisal: a "spicy" sex difference? *Emotion, 5*(3), 258-266*.*

Fabes, R. A., & Martin, C. L. (1991). Gender and age stereotypes of emotionality. *Personality and Social Psychology Bulletin, 17,* 532-40.

Fischer, A. H. (2006). Gender and emotion in face-to-face and computer-mediated communication. Chapter to appear in A. Kappas (Ed.)

Fischer, A. H., Manstead, A. S. R., Evers, C., Timmers, M., & Valk, G. (2004). Motives and norms underlying emotion regulation. In: P. Philippot, & R. S. Feldman (Eds.). *The Regulation of Emotion.* New York: Lawrence Erlbaum Associates.

Fischer, A. H., Manstead, A. S. R., & Zaalberg, R. (2004). Social influences on the emotion process. *European Review of Social Psychology, 14,* 171-201.

Fridlund, A. J. (1991). Sociality of solitary smiling: Potentiation by an implicit audience. *Journal of Personality and Social Psychology*, *60*, 229-240.

Fridlund, A. J. (1994). *Human facial expression: An evolutionary view.* San Diego, CA: Academic Press.

Frijda, N. H. (1986). *The emotions*. Cambridge: Cambridge University press.

Fussell, S. R. (2002). *The verbal communication of emotions; interdisciplinary perspectives.* Mahwah: Lauwrence Erlbaum associates publishers.

Galagher, J., Sproull, L., & Kiesler, S. (1998). Legitimacy, authority, and community in electronic support groups. *Written Communication, 15,* 493-530.

Gross, J. J., & Levenson, R. W. (1995). Emotion elicitation using films. *Cognition & Emotion 9* (1), 87-108.

Gross. J. & John, O.P. (2003). Individual differences in two emotion regulation processes : Implications for affect, relationships, and well-being. *Journal of personality and Social Psychology, 26*, 712-726.

Gump, B. B. & Kulik, J. A. (1997). Stress, affiliation, and emotional contagion. *Journal of Personality and Social Psychology*, *72*, 305-319.

Hall, J. A. (1984). On explaining gender differences: The case of nonverbal communication. In P. R. Schaver & C. Hendrick (Eds.), *Sex and Gender* (Review of Personality and Social Psychology, Vol. 7, pp. 177-201). Beverly Hills, CA: Sage.

Harrison, R. P. (1973). Nonverbal communication. In I.S. Pool, W. Schramm, N. Maccoby, F. Fry, E. Parker, and J. L. Fern (Eds), *Handbook of communication,* pp. 93-115. Chicago: Rand McNally.

Hatfield, E., Cacioppo, J. T., Rapson, R. L. (1992). Primitive emotional contagion. In M. S. Clark (Ed), *Emotion and social behavior(Review of personality and social psychology, Vol. 14*, pp. 151-177). Thousand Oaks, CA: Sage.

Herring, S. C. (2000). Gender differences in CMC: Findings and implications. *Computer Professionals for Social Responsibility Journal 18*(1)*.* Retrieved August 11, 2005 from http://archive.cpsr.net/publications/newsletters/issues/2000/winter2000/herring.html

Hess, U., Banse, R., & Kappas, A. (1995). The intensity of facial expression is determined by underlying affective state and social situation. *Journal of Personality and Social Psychology, 69,* 280-288.

Hess, U., Adams, R. B. & Kleck, R. E. (2004). Facial appearance, gender, and emotion expression. *Emotion*, 4, 378-388.

Hess, U., Adams, R., & Kleck, R.E. (2005). Who may frown and who should smile? Dominance, affiliation, and the display of happiness and anger. *Cognition & Emotion, 19,* 515-536.

Huffaker, D. A., Calvert, S. L. (2005). Gender, identity, and language use in teenage blogs. *Journal of Computer-Mediated Communication, 10*(2)*,* article 1. Retrieved August 11, 2006 from http://jcmc.indiana.edu/vol10/issue2/huffaker.html.

Izard, C. E. (1971). *The face of emotion.* New York: Appleton-Century-Croft.

Izard, C. E. (1977). *Human emotions.* New York: Plenum.

Izard, C. E. (1991). *The psychology of emotions.* New York: Plenum.

Jakobs, E., Manstead, A. S. R., & Fischer, A. H. (1999). Social motives and emotional feelings as determinants of facial displays: The case of smiling. *Personality and Social Psychology Bulletin, 25* (4), 424-435.

Jakobs, E., Manstead, A. S. R., & Fischer, A. H. (2001). Social context effects on facial activity in a negative emotional setting. *Emotion 1,* (1), 51-69.

Jakobs, E., Manstead, A. S. R., & Fischer, A. H. (2001). Social motives, emotional
feelings, and smiling. Cognition and Emotion, 13, 321-345.

Jessup, L.M., Connolly, T., & Tansik, D.A. (1990) Toward a theory of automated group
work: the deindividuating effects of anonymity. *Small group research, 21,* 333-
348.

Kiesler, S., Siegel, J., & McGuire, T. (1984). Social psychological aspects of computer-
mediated communications. *American Psychologist, 39,* 1123-1134.

Kiesler, S., Zubrow, D., Moses, A. M., & Geller, V. (1985). Affect in computer-mediated
communication: an experiment in synchronous terminal-to-terminal discussion.
Human Computer Interaction, 1, 77-104.

Lange, A., Rietdijk, D., Hudcovicova, M., Van de Ven, J-P., Schrieken, B., & Emmelkamp,
P. M. G. (2003). Interapy: a controlled randomized trial of standardized treatment
of posttraumatic stress through the Internet. *Journal of Consulting and Clinical
Psychology, 71*(5)*,* 901-909.

Lange, A., Van de Ven, J-P., & Schrieken, B. (2003). Interapy: treatment of
posttraumatic stress via the Internet. *Cognitive Behaviour Therapy, 32*(3)*,* 110-
124.

Lange, A., Van de Ven, J-P., Schrieken, B., & Emmelkamp, P. M. G. (2001). Interapy.
Treatment of posttraumatic stress through the Internet: a controlled trial. *Journal
of Behavior Therapy and Experimental Psychiatry, 32,* 73-90.

Lea, M., O'Shea, T., Fung, P., & Spears, R. (1992) "Flaming" in computer-mediated
communication. In M. Lea, C*ontexts of computer mediated communication* (pp.
89-112). Hemel Hempstead: Harvester-Wheatsheaf.

Lea, M., & Spears, R. (1991). Computer-mediated communication, de-individuation and
group decision-making. *International Journal of Man-Machine Studies, 39,* 283-
301.

Lea, M., Spears, R., & De Groot, D. (2001). Knowing me, knowing you: Effects of visual
anonymity on self-categorization, stereotyping and attraction in computer-
mediated groups. *Personality and Social Psychology Bulletin, 27,* 526-537.

Leathers, D. G. (1986). *Successful nonverbal communication: Principles and applications.*
New York: Macmillan.

Lee, C. (2003). *How Does Instant Messaging Affect Interaction Between the Genders?*
Stanford, CA: The Mercury Project for Instant Messaging Studies at Stanford
University. Retrieved August 11, 2006 from http://www.stanford.edu/class/pwr3-
25/group2/projects/lee.html

Lee, V., & Wagner, H. (2002). The effect of social presence on the facial and verbal
expression of emotion and the interrelationships among emotion components.
Journal of Nonverbal Behavior, 26(1)*,* 3-25.

Lundquist, L.O., & Dimberg, U. (1995). Facial expressions are contagious. *Journal of Psychophysiology*, *9*, 203-211.

Manstead, A. S. R., & Fischer, A. H. (2001). Social appraisal: The social world as object of and influence on appraisal processes. In K. R. Scherer, A. Schorr, & T. Johnstone (Eds.), *Appraisal processes in emotion: Theory, methods, research.* (pp. 221-232). New York: Oxford University Press.

Manstead, A. S. R., Lea, M., & Goh, J. (in press). Facing the future: Emotion communication and the presence of others in the age of video-mediated communication. In A. Kappas (Ed.), *Face-to-face communication over the Internet: Issues, Research, Challenges.* Cambridge: Cambridge University Press.

McCornick, N. B., & McCornick, J. W. (1992). Computer friends and foes: Content of undergraduates' electronic mail. *Computers in Human Behavior, 8,* 379-405.

McKenna, K. Y. A., & Bargh, J. A. (1999). Causes and consequences of social interaction on the Internet: A conceptual framework. *Media Psychology, 1,* 249-269.

McKenna, K.Y.A., & Bargh, J.A. (2000). Plan 9 from cyberspace: The implications of the Internet for personality and social psychology. *Personality and Social Psychology review,* 4, 57-75.

McKenna, K. Y. A., Green, A. S., & Gleason, M. E. j. (2002). Relationship Formation on the Internet: What's the Big Attraction? *Journal of Social Issues, 58*(1)*,* 9-31.

Miller, J. K., & Gergen, K. J. (1998). Life on the line: the therapeutic potentials of computer mediated conversation. *Journal of Marital and Family Therapy, 24*(2)*,* 189-202.

Mantovani, F. (2001). Networked seduction: A test-bed for the study of strategic communication on the Internet. *CyberPsychology & Behavior, 4,* 147-154.

Oatley, K., & Duncan, E. (1992). Incidents of emotion in daily life. In K. T. Strongman (Ed.), *International review of studies on emotion* (Vol.2, pp. 249-293). Chichester, UK: Wiley.

Omdahl, B. L. (1995). *Cognitive appraisal, emotion, and empathy.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Orenga Castellá, V., Zornoza Abad, A.M., Prieto Alonso, F., & Peiró Silla, J.M. (2000). The influence of familiarity among group members, group atmosphere and assertiveness on uninhibited behavior through three different communication media. *Computers in Human Behavior, 16,* 141-159.

Parkinson, B., Fischer, A. H., & Manstead. A. S. R. (2005). *Emotion in Social Relations: Cultural, Group, and Interpersonal Processes.* New York: Psychology Press.

Pennebaker, J. W. (1997). <u>Opening up: The healing power of expressing emotions</u> (Revised edition). New York: Guilford Press.

Planalp, S. (1998). Communicating emotion in everyday life: Cues, channels, and processes. In P. A. Andersen, & L. K. Guerrero (Eds.), *Communication and emotion, Theory, research, and applications* (pp. 29-48). San Diego: Academic Press.

Planalp, S., & Knie, K. (2002). Integrating verbal and nonverbal emotion(al) messages. In S. R. Fussell (Ed.), *The verbal communication of emotions: interdisciplinary perspectives* (pp. 55-79). Mahwah, NJ: Lawrence Erlbaum Associates.

Plutchik, R. (1980). The evolutionary context. In R. Plutchik and H. Kellerman (Eds.), *Emotion: Theory, research and experience,* vol. 1. New York: Academic Press.

Postmes, T. (1997). *Social Influences in Computer-Mediated Groups.* Amsterdam: PhD thesis, University of Amsterdam.

Postmes, T., & Spears, R. (1998). Deindividuation and anti-normative behavior: A meta-analysis. *Psychological Bulletin, 123,* 238-259.

Postmes, T., Spears, R., Sakhel, K., & de Groot, D. (2001). Social influence in computer-mediated communication : The effects of anonymity on group behavior. *Personality and Social Psychology Bulletin, 27,* 1243-1254.

Reicher, S. D., Spears, R., & Postmes, T. (1995). A social identity model of deindividuation phenomena. *European Review of Social Psychology, 6,* 161-198.

Reicher, S. D., Levine, M., & Gordijn, E. (1998). More on deindividuation, power relations between groups and the expression of social identity: Three studies on the effects of visibility to the in-group. *British Journal of Social Psychology, 37,* 15-40.

Rezabek, L. L., & Cochenour, J. J. (1998). Visual cues in computer-mediated communication : Supplementing text with emoticons. *Journal of Visual Literacy, 18,* 201-215.

Rice, R. E. (1990). Computer-mediated communication system network data: theoretical concerns and empirical examples. *International Journal of Man-Machine Studies, 30,* 1-21.

Rice, R.E., & Love, G. (1987). Electronic emotion: Socioemotional content in a computer-mediated network. *Communication Research, 14,* 85-108.

Rimé, B. (1989). Le partage social des émotions. In B. Rimé, & K. Scherer (Eds.), *Textes de base en psychologie: Les Émotions* (pp. 271-303). Lausanne : Delachaux et Niestlé.

Rimé, B., Corsini, S., & Herbette, G. (2002). Emotion, verbal expression, and the social sharing of emotion. In S. R. Fussell (Ed.), *The verbal communication of emotions: Interdisciplinary perspectives* (pp. 185-208). Mahwah, NJ: Lawrence Erlbaum Associates Inc.

Rimé, B., Finkenauer, C., Luminet, O., Zech, E., & Philippot, P. (1998). Social sharing of emotion : New evidence and new questions. *European Review of Social Psychology, 9,* 145-189.

Rimé, B., Mesquita, B., Philippot, P., & Boca, S. (1991). Beyond the emotional event: Six studies on social sharing of emotion. *Cognition and Emotion, 5,* 435-465.

Rivera, K., Cooke, N. J., & Bauhs, J. A. (1996). The effects of emotional icons on remote communication. *Computer Human Interaction, interactive poster.*

Rodino, M. (1997). Breaking out of binaries: Reconceptualizing gender and its relationship to language in computer-mediated communication. *Journal of Computer-Mediated Communication, 3*(3). Retrieved August 11, 2006 from http://jcmc.indiana.edu/vol3/issue3/rodino.html

Roseman, I. J., Wiest, C., & Swartz, T. S. (1994). Phenomenology, behaviors, and goals differentiate discrete emotions. *Journal of Personality and Social Psychology, 67,* 206-221.

Rutter, D. R. (1987). *Communicating by telephone.* Oxford: Pergamon Press.

Rutter, D. R. , & Stephenson, G. M. (1979). The role of visual communication in social interaction. *Current Antrophology, 20,* 124-5.

Sanderson, D.W. (1993). *Smileys.* Sebastopol, CA: O'Reilly.

Sasaki. M. U., & Ohbuchi, K. (1999). Conflict processes on computer-mediated communication. *Tohoku Psychologica Folia, 58,* 50-55.

Savicki, V. (1996). Gender language style and group composition in internet discussion groups. *Journal of Computer-Mediated Communication, 2*(3). Retrieved August 11, 2006 from http://jcmc.indiana.edu/vol2/issue3/savicki.html

Savicki, V., & Kelley, M. (2000). Computer mediated communication: Gender and group composition. *CyberPsychology & Behavior, 3*(5)*,* 817-826.

Scherer, K. R., Schorr, A., & Johnstone, T. (2001). *Appraisal processes in emotion: Theory, methods, research.* New York: Oxford University Press.

Schoutrop, M. (2000). *Structured writing in processing traumatic events.* Doctoral thesis, University of Amsterdam.

Shaw, M.E. (1981). *Group Dynamics: The Psychology of Small Group Behavior.* New York: McGraw-Hill.

Short, J., Williams, E., Christie, B. (1976). *The social psychology of telecommunication.* London: Wiley.

Siegel, J., Dubrovsky, S., Kiesler, S., & McGuire, T. (1986). Group processes in computer-mediated communication. *Organizational Behaviour and Human Decision Processes, 37,* 157-187.

Smyth, J. M. (1998). Written emotional expression: Effect sizes outcome types, and moderating variables. *Journal of Consulting and Clinical Psychology, 66,* 174-184.

Sonnby-Borgström, M. (2002). Automatic mimicry reactions as related to differences in emotional empathy. *Scandinavian Journal of Psychology*, *43*, 433-443.

Spears, R., & Lea, M. (1992). Social influence and the influence of the 'social' in computer-mediated communication. In M. Lea (Ed.). *Contexts of computer-mediated communication.* (pp. 30-65). Hemel-Hempstead: Harvester-Wheatsheaf.

Spears, R., & Lea, M. (1994). Panacea or panopticon? The hidden power in computer-mediated communication. *Communication Research, 21,* 427-459.

Spears, R., Lea, M., Corneliussen, R. A., Postmes, P., & Ter Haar, W. (2002). Computer-mediated communication as a channel for social resistance. The strategic side of SIDE. *Small Group Research, 33* (5), 555-574.

Spears, R., Postmes, T., Lea, M., & Watt, S. E. (2001). A SIDE view of social influence. In J. Forgas & K. Williams (Eds.) *Social influence: Direct and indirect processes.* (pp. 331-350). Philadelphia: Psychology Press.

Spears, R., Postmes, T., Lea, M., Wolbert, A. (2002). When are net effects gross products? The power of influence and the influence of power in computer-mediated communication. *Journal of Social Issues, 58*(1), 91-107.

Sproull, L., & Faraj, S. (1997). Atheism, sex and databases: The Net as a social technology. In S. Kiesler (Ed.), *Culture of the Internet* (pp. 35-51). Mahwah, NJ: Lawrence Erlbaum.

Sproull, L., & Kiesler, S. (1986). Reducing social context cues: Electronic mail in organizational communication. *Management Science, 32,* 1492-1512.

Steinfeld, C. W. (1986). Computer-mediated communication in an organizational setting: Explaining task-related and socioemotional uses. In M. L. McLaughlin (Ed.), *Communication yearbook 9* (pp. 777-804). Newbury Park, CA: Sage.

Stel, M. (2005). *The social functions of mimicry. On the consequences and qualifiers of facial imitation.* Doctoral dissertation, Radboud University Nijmegen.

Stoppard, J. M., & Gunn Gruchy, C. D. (1993). Gender, context, and expression of positive emotion. *Personality and Social Psychology Bulletin, 19,* 143-150.

Streeck, J., & Knapp, M. L. (1992). The interaction of visual and verbal features in human communication. In F. Poyatos (Ed.), *Advances in nonverbal communication* (pp. 3-23). Amsterdam, Netherlands: Benjamins.

Thompson, P. A., & Ahn, D. (1992). *To be or not to be: an exploration of E-prime, copula deletion and flaming in electronic mail.* Paper presented at the Western States Communication Association Convention, Boise, Idaho.

Thompson, P. A., & Foulger, D. A. (1996). Effects of pictographs and quoting on flaming in electronic mail. *Computers in Human Behavior, 12,* 225-243.

Tidwell, L. C., & Walther, J. B. (2000). *Getting to know each other a bit at a time: Computer-mediated communication effects on disclosure, impressions, and interpersonal evaluations.* Paper presented at the International Conference on Language and Social Psychology, Cardiff, Wales.

Tiedens, L. Z., & Leach, C. W. (2004). *The Social Life of Emotions.* New York: Cambridge University Press.

Timmers, M., Fischer, A.H., & Manstead, A. S. R. (1998). Gender differences in motives for regulating emotions. *Personality and Social Psychology Bulletin, 24 (9),* 974-985.

Van Baaren, R. B., Maddux, W.W., Chartrand, T. L., de Bouter, C., and van Knippenberg, (2003). It takes two to mimic: Consequences of self-construals. *Journal of Personality and Social Psychology, 84,* 1093-1103.

Van den Berg, M., Kortekaas, R., & Vingerhoets, A. J. J. M. (1992). Huilen in psychologisch perspectief. [Crying in psychological perspective]. *Gedrag en Gezondheid, 20,* 23-31.

Wagner, H. L., & Lee, V. (1999). Facial behavior alone and in the presence of others. In P. Philippot, R. S. Feldman, & E. J. Coats (Eds.), *The social context of nonverbal behavior* (pp. 262-286). Cambridge: Cambridge University Press.

Wagner, H. L., Lewis, H., Ramsay, S., & Krediet, I. (1992). Prediction of facial displays from knowledge of norms of emotional expressiveness. *Motivation and Emotion, 16,* 347-362.

Wagner, H. L., & Smith, J. (1991). Facial expression in the presence of friends and strangers. *Journal of Nonverbal Behavior, 15,* 201-214.

Wallbott, H. G. (1988). Big girls don't frown, big boys don't cry—Gender differences of professional actors in communicating emotion via facial expression. *Journal of Nonverbal Behavior, 20,* 98-106.

Walther, J. B. (1992). Interpersonal effects in computer-mediated interaction. A relational perspective. *Communication Research, 19*(1)*,* 52-90.

Walther, J.B. (1995). Relational aspects of computer-mediated communication: Experimental observations over time. *Organizational Science, 6,* 186-203.

Walther, J. B., Anderson, J. F., & Park, D. W. (1994). Interpersonal effects in computer-mediated interaction. A meta-analysis of social and antisocial communication. *Communication Research, 21*(4)*,* 460-487.

Walther, J. B. & Burgoon, J. K. (1992). Relational communication in computer-mediated communication. Human Communication Research,19(1), 50-88.

Walther, J.B., & D'Addario, K.P. (2001). The impacts of emoticons on message interpretation in computer-mediated communication. *Social Science Computer Review, 19,* 324-347.

Walther, J. B., Loh, T., & Granka, L. (2005). Let me count the ways. The interchange of verbal and nonverbal cues in computer-mediated and face-fo-face affinity. *Journal of Language and Social Psychology, 24* (1), pp. 36-65.

Walther, J. B., & Parks, M. R. (2002). Cues filtered out, cues filtered in: Computer-mediated communication and relationships. In M. L. Knapp, & J. A. Daly (Eds.), *Handbook of interpersonal communication* (3rd ed., pp. 529-563). Thousand Oaks, CA: Sage.

Walther, J.B., & Tidwell, L.C. (1995). Nonverbal cues in computer-mediated communication, and the effect of chronemics on relational communication. *Journal of Organizational Computing, 5,* 355-378.

Witmer, D. F., & Katzman, S. L. (1997). On-line smilies: Does gender make a difference in the use of graphic accents? *Journal of Computer-Mediated Communication, 2*(4)*.* Retrieved August 11, 2006 from http://jcmc.indiana.edu/vol2/issue4/witmer1.html

Wolf, A. (2000). Emotional expression online: Gender differences in emoticon use. *CyberPsychology and Behavior, 3*(5)*,* 827-833.

Zaalberg, R., Manstead, A. S. R., Fischer, A. H. (2004). Relations between emotions, display rules, social motives, and facial behaviour. *Cognition and Emotion, 18* (2), 183-207.

Zech, E. (1999). Is it really helpful to verbalise ones emotions? *Gedrag & Gezondheid, 27,* 12, 42-47.

Summary

;-)

Summary

The present dissertation examines the use of emoticons in text-based computer-mediated communication (CMC). Emoticons are short symbols that resemble facial displays. Today an increasing amount of social interaction between people takes places on the Internet. It is implicitly assumed that CMC can replace face-to-face (F2F) communication. A specific characteristic of CMC is that it is largely text-based which implicates that there is a lack of nonverbal cues. When these nonverbal cues are not available, interactants substitute the expression of relational messages into cues available in CMC (e.g., social content, emoticons, style, and timing of verbal messages). Emoticons are prevalent in CMC which implies that CMC users do have a need to express their emotions with short symbols rather than text. This dissertation is entitled "the missing wink". This refers to the fact that people replace nonverbal expressions (real winks) with CMC indicators (emoticon winks). By using emoticons people believe it is possible to express feelings in CMC and to become acquainted with other people in the virtual world. Therefore, emoticons seem to be the missing links between familiarity with cyberspace and the formation of friendships in the virtual world. In reviewing the research field of emotion in CMC we have to conclude that there are few empirical studies on emoticons and on the role of emotion in CMC. Therefore, this dissertation aims to figure out how the expression of emotions is affected by the lack of nonverbal cues and if emoticons can give extra emotional meaning to messages.

In Chapter 1 the two central issues underlying this dissertation are presented. First, the consequences of the lack of nonverbal cues in text-based CMC for the expression of emotion are examined. Second, it is examined how far emoticons can serve the same functions as nonverbal behavior in F2F communication. Chapter 1 consists of a general introduction in which the rationale, aims, and objectives underlying the studies described in this dissertation are presented. Existing knowledge about the lack of nonverbal cues and its consequences for the expression of emotion are briefly discussed. Background information about emoticons and their function in CMC is presented.

Chapter 2 presents an overview of the literature on the role of emotion in CMC. Studies on differences between CMC and F2F interaction with respect to the expression of emotion are reviewed. There are few empirical studies on the role of emotion in CMC. Therefore, relevant theoretical insights with respect to emotion communication in F2F communication are applied to CMC. To what extent are emotions communicated to the same degree and in the same way in CMC as in F2F communication? Furthermore the role of emoticons in CMC is examined. The main conclusion of this review is that emotional communication online and offline seem to be surprisingly similar. Emotions are

prevalent in CMC and there are no indications that CMC is an impersonal medium. Apparently people cope with the restrictions of text-based CMC by accepting that there is more time needed to transfer the same amount of information as in F2F communication, and messages are imbued with emoticons to fill the conversational gaps and to give additional social meaning to their messages.

Chapter 3 reports the results of an empirical study on the importance of social context on emoticon use in CMC. Short internet chats are presented to secondary school students (N =158). The valence of these chats (positive vs. negative) and the social context (socio-emotional vs. task-oriented) are manipulated. The results of this study indicate that participants use more emoticons in socio-emotional contexts than in task-oriented contexts. There are no differences in emoticon use with regard to the valence of the context. Furthermore, participants use more positive emoticons in positive contexts and more negative emoticons in negative contexts. The results are related to research about the expression of emotion in F2F interaction. The general conclusion of this study is that social context matters in CMC and that there are similarities between the expression of emotion (by emoticon use) in CMC and the expression of emotion in F2F communication.

Chapter 4 reports an online study about the role of emoticons in CMC. The study consists of a questionnaire assessing the motives for emoticon use and an experimental part in which participants (N=1251) have to respond to short internet chats. The valence of the context (positive vs. negative) and the interaction partner (good friend vs. stranger) are manipulated. Participants are asked if they feel the need to add an emoticon to their reaction (spontaneous emoticon use) as well as how plausible it is that they will use a specific emoticon in the given situation (intentional measurement). In line with the view that the internet provides a safe environment to express positive as well as negative emotions marginal effects in the frequency of emoticon use in actual behavior are expected. In the intentional part there might be a larger influence of display rules, because people consciously decide whether they would use a certain emoticon in a given context. We expect an effect of context in the *intention* in using more emoticons in a positive versus a negative context, but a weaker effect of context on emoticon use in the spontaneous reactions of participants. Results show that "expressing emotion", "strengthening a message" and "expressing humour" are the most common motives for emoticon use. Furthermore, most emoticons are used towards friends compared to strangers. Finally, more emoticons are used in positive contexts than in negative contexts (spontaneously as well as intentionally). In spite of the differences between F2F communication and CMC, participants seem to use emoticons in a similar way as facial behavior in F2F communication, at least with respect to social context and interaction partner.

112

Chapter 5 reports the results of two experimental studies on the impact of emoticons on online message interpretation. Furthermore, the perceived motives for emoticon use from a receiver's perspective are examined. Study 1 (*N*= 80) is conducted among psychology students in a behavioral lab. Study 2 (*N*= 105) replicates the paradigm of study 1 in a more natural setting and with secondary school students as participants. The results imply that emoticons can serve as nonverbal surrogates for visual cues in F2F communication and certainly have an impact on online message interpretation. Emoticons are useful in strengthening the intensity of a verbal message. Additionally they can create ambiguity and express sarcasm online by varying the valence of the emoticon and the valence of the message. Overall, we can conclude that emoticons can serve some of the same functions as actual nonverbal behavior. Finally, the interpretation of the motives for emoticon use is examined. In both studies, "expressing emotion", "strengthen the message", "regulation the interaction" and "putting into perspective" are the most regular interpretations of the motives.

Chapter 6 integrates the findings of the reported studies and discusses the theoretical and practical implications of the results. With respect to the first central issue the main conclusion is that emotional communication online and offline seem to be surprisingly similar. Emotions are ubiquitous in CMC and there are no indications that CMC is a cold and impersonal medium. Apparently people cope with the restrictions of text-based CMC by accepting that there is more time needed to transfer the same amount of information as in F2F communication, and messages are imbued with emoticons to fill the conversational gaps. Regarding to the second central issue it can be concluded that the analogy between nonverbal cues in face-to-face communication and emoticons in CMC is established on several aspects. Emoticons depend on social context, in a similar way as nonverbal cues in F2F communication. The influence of the interaction partner on emoticon use in CMC is also comparable with the display of nonverbal cues in F2F communication. The social motives for emoticon use are in line with the evidence in F2F communication in that facial displays are affected by both emotional and social factors. In message interpretation, emoticons can at least serve the functions of complementing and enhancing verbal messages. Finally strengths and limitations of the reported studies and implications for future research are discussed.

Samenvatting

;-)

Samenvatting

Dit proefschrift gaat over het gebruik van emoticons in internetcommunicatie. Emoticons zijn grafische symbolen die gezichtsuitdrukkingen weerspiegelen. Vandaag de dag vindt steeds meer sociale interactie tussen mensen plaats via het Internet en met gebruik van emoticons. Er wordt impliciet aangenomen dat internetcommunicatie de dagelijkse face-to-face (F2F) communicatie volledig kan vervangen. Een kenmerk dat specifiek van toepassing is op internetcommunicatie is dat het voor een groot deel tekstueel is. Dit houdt vanzelfsprekend in dat er geen non-verbale kenmerken aanwezig zijn. Wanneer deze non-verbale cues niet aanwezig zijn, vervangen internetters deze door cues die wel beschikbaar zijn binnen internetcommunicatie (bijvoorbeeld, sociale inhoud, emoticons, stijl en de timing van verbale boodschappen). Emoticons worden veel gebruikt in online communicatie, wat betekent dat mensen de behoefte hebben een deel van hun emoties te uiten met symbolen in plaats van alleen met tekst.

De titel van dit proefschrift "Exploring the missing wink", refereert naar link die emoticons leggen tussen de reële wereld en de virtuele wereld. De internetter creëert een nieuw symbool, een emoticon, om uiting te geven aan een oude, fundamentele emotie. De emoticon fungeert dan als missing link tussen de non-verbale expressie van emotie in het F2F leven en de emotie die in internetcommunicatie beleefd wordt. Door emoticons te gebruiken is het mogelijk om uiting te geven aan gevoel in internetcommunicatie en op die wijze verbonden te worden met andere mensen in de virtuele wereld.

Er zijn slechts weinig empirische studies gedaan naar emoticons en de rol van emoties in internetcommunicatie. Dit proefschrift heeft als doel bij te dragen aan de kennis over hoe de expressie van emoties beïnvloed wordt door het gebrek aan non-verbale cues. Het onderzoekt of emoticons toegevoegde waarde hebben aan de tekstuele betekenis van boodschappen.

In hoofdstuk 1 worden twee centrale onderzoeksvragen gepresenteerd die ten grondslag liggen aan dit proefschrift. De eerste vraag is wat de gevolgen zijn van het gebrek aan non-verbale cues op de expressie van emoties in online communicatie. De tweede vraag is in hoeverre emoticons dezelfde functies kunnen vervullen als non-verbale cues in F2F communicatie. In het eerste hoofdstuk komen de bestaande kennis over het gebrek aan non-verbale cues en de gevolgen daarvan voor de expressie van emoties kort aan de orde. Verder wordt er achtergrondinformatie gegeven over emoticons en hun functie in internetcommunicatie.

Hoofdstuk 2 bevat een overzicht van de sociaal-psychologische literatuur over de rol van emoties in internetcommunicatie. Het onderzoek met betrekking tot de verschillen tussen internetcommunicatie en F2F communicatie wordt besproken. Er blijkt

slechts een gering aantal empirische studies te bestaan naar de rol van emotie in internetcommunicatie. Dat is de reden dat de oriëntatie van dit hoofdstuk ligt op het toepassen van relevante theoretische inzichten met betrekking tot de communicatie van emoties in F2F communicatie op internetcommunicatie. In welke mate worden emoties in dezelfde mate en op dezelfde manier geuit in internetcommunicatie als in F2F communicatie? Verder gaat de aandacht in dit hoofdstuk uit naar de rol van emoticons in internetcommunicatie. De belangrijkste conclusie van dit overzicht is dat de communicatie van emoties in internetcommunicatie en F2F communicatie verrassend veel op elkaar lijken. Emoties komen veelvuldig voor in internetcommunicatie en er zijn geen indicaties dat internet een koud en onpersoonlijk medium is. Blijkbaar hebben mensen een manier gevonden om met de beperkingen van internetcommunicatie om te gaan. Ze accepteren dat er meer tijd nodig is om dezelfde hoeveelheid informatie over te brengen dan in F2F communicatie. En ze larderen hun berichten met emoticons om gaten in de conversaties op te vullen en extra sociale betekenis aan hun berichten te geven.

Hoofdstuk 3 beschrijft de resultaten van een empirisch onderzoek naar het belang van sociale context op het gebruik van emoticons. Korte internet chats zijn voorgelegd aan middelbare scholieren (N = 158). De valentie (positief vs. negatief) en de sociale context (socio-emotioneel vs. taakgericht) van deze berichten is gemanipuleerd. De resultaten van dit onderzoek tonen dat de participanten meer emoticons gebruiken in socio-emotionele contexten dan in taakgerichte contexten. Er zijn geen verschillen in emoticongebruik met betrekking tot de valentie van de context. Wel stemmen participanten hun emoticon gebruik af op de context. Ze gebruiken meer positieve emoticons in positieve contexten en meer negatieve emoticons in negatieve contexten. De resultaten zijn gerelateerd aan onderzoek naar de expressie van emotie in F2F communicatie. De algemene conclusie van dit onderzoek is dat sociale context van invloed is in internetcommunicatie en dat er overeenkomsten zijn tussen het uiten van emoties (door het gebruik van emoticons) in internetcommunicatie en het uiten van emoties in F2F communicatie.

Hoofdstuk 4 rapporteert een online onderzoek naar de rol van emoticons in internetcommunicatie. Het onderzoek bestaat uit een vragenlijst die de motieven achter het gebruik van emoticons onderzoekt en een experimenteel deel waarin participanten (N=1251) gevraagd zijn te reageren op korte internet chats. De valentie van de context (positief vs. negatief) en de interactiepartner (goede vriend vs. onbekende) zijn in dit onderzoek gemanipuleerd. Deelnemers is gevraagd of ze de behoefte hebben om een emoticon toe te voegen aan hun reactie (spontaan emoticon gebruik) en hoe plausibel het is dat ze een bepaalde emoticon zouden gebruiken in de gegeven situatie (maat voor intentie). De verwachting is dat deelnemers meer emoticons gebruiken tegenover vrienden dan tegenover vreemden en dat ze spontaan meer emoticons gebruiken in

118

positieve contexten dan in negatieve contexten. We verwachten verder dat dit contexteffect zwakker zal zijn vanwege het anonimiteitaspect van internetcommunicatie welke het eenvoudiger maakt negatieve emoties te uiten. Uit de resultaten komt naar voren dat het "uiten van emoties", het "kracht bijzetten van een boodschap" en het "uiten van humor" de meest gangbare motieven voor emoticon gebruik zijn. Verder worden er meer emoticons gebruikt ten opzichte van vrienden dan ten opzichte van onbekenden. Tenslotte worden er meer emoticons gebruikt in positieve contexten dan in negatieve contexten, zowel spontaan als intentioneel. Ondanks de verschillen tussen F2F en internetcommunicatie blijken deelnemers emoticons op een vergelijkbare wijze te gebruiken als non-verbaal gedrag in F2F communicatie, tenminste wat betreft sociale context en interactiepartner.

Hoofdstuk 5 bespreekt de resultaten van twee experimentele studies over de invloed van emoticons op de interpretatie van online boodschappen. Verder is de interpretatie van de motieven vanuit het perspectief van de ontvanger onderzocht. Studie 1 (N=80) is uitgevoerd onder psychologiestudenten in een gedragslab. Studie 2 (N=105) repliceert de opzet van onderzoek van studie 1 in een meer natuurlijke setting met middelbare scholieren als deelnemers. De resultaten duiden aan dat emoticons als non-verbale surrogaten voor visuele cues in F2F communicatie kunnen dienen en dat ze invloed hebben op de interpretatie van boodschappen. Emoticons zijn geschikt om de intensiteit van een boodschap te versterken. Verder kunnen ze ambiguïteit creëren en sarcasme uiten door de valentie van de emoticon en de valentie van de verbale boodschap te variëren. Tot slot is de interpretatie van de motieven achter het gebruik van emoticons onderzocht. In beide studies zijn het "uiten van emoties", het "kracht bijzetten van een boodschap", het "reguleren van de interactie" en het "in perspectief plaatsen van boodschappen" de meest gangbare interpretaties van de motieven om een emoticon te gebruiken.

Hoofdstuk 6 integreert de bevindingen van de gerapporteerde onderzoeken en bespreekt de theoretische en praktische implicaties van de resultaten. Met betrekking tot de eerste onderzoeksvraag kunnen we concluderen dat emotionele communicatie online en offline verrassend veel op elkaar lijken. Emoticons komen veel voor in internetcommunicatie en er zijn geen indicaties dat internet een koud en onpersoonlijk medium is. Blijkbaar kunnen mensen goed omgaan met de beperkingen van tekstgebaseerde internetcommunicatie door te accepteren dat er meer tijd nodig is om dezelfde informatie over te brengen dan in F2F communicatie. Verder vullen ze hun boodschappen aan met emoticons. Met betrekking tot de tweede onderzoeksvraag kunnen we concluderen dat de analogie tussen non-verbale cues in F2F communicatie en emoticons in internetcommunicatie voor verschillende aspecten opgaat. Sociale context is op een vergelijkbare manier van invloed op het gebruik van emoticons als het is op non-

verbale cues in F2F communicatie. De invloed van de interactiepartner op emoticongebruik is ook vergelijkbaar met het tonen van non-verbale cues in F2F communicatie. De sociale motieven achter het emoticongebruik zijn in lijn met vele resultaten uit F2F onderzoek dat gezichtsuitdrukkingen geaffecteerd worden door zowel emotionele als sociale factoren. In het geval van de interpretatie van boodschappen, kunnen emoticons op zijn minst functioneren in het aanvullen en vergroten van boodschappen. Tot slot, worden de mérites van dit proefschrift en de implicaties voor vervolgonderzoek besproken.

Dankwoord

;-)

Dankwoord

Er zijn heel wat mensen betrokken geweest bij de totstandkoming van dit proefschrift. De ene wat directer dan de andere maar daardoor zeker niet minder belangrijk. Ik wil graag beginnen met het bedanken van de mensen die niet met naam en toenaam in dit dankwoord vermeld worden, maar zeker wel op hun manier hun steentje bijgedragen hebben. Toch wil ik, met het risico dat ik mensen vergeet, een aantal mensen wat speciale aandacht geven op deze plek.

Om te beginnen mijn beide promotoren, Arjan en Jasper. Jullie hebben beide altijd het vertrouwen uitgestraald dat het wel goed zou komen met mijn onderzoek. Ik waardeer het zeer dat ik zoveel ruimte heb gekregen om mijn eigen ideeën uit te werken. Ik had het gevoel dat ik altijd bij jullie terecht kon, voor kritisch commentaar op mijn stukken maar ook voor een gezellig informeel gesprek. Jasper, jij was wat meer op de achtergrond gedurende het traject, maar als je er moest zijn, was je er altijd. En wat emails schrijven betreft, ben je ongeëvenaard. Arjan, wij zitten bijna altijd op één lijn en dat is wel zo prettig als je een gemeenschappelijk doel hebt. Daarnaast kan ik zo ook nog goed met je overweg. Ik ga ons overleg en email contact wel missen straks.

Daarnaast wil ik natuurlijk mijn OU collega's bedanken. In het bijzonder Hans, met wie ik veel promotieleed gedeeld heb, tijdens lunchwandelingen maar ook de vele keren dat ik bij hem thuis mocht aanschuiven bij het eten. Dat waren super gezellige avonden, Nel en de kids ook bedankt. Verder heb ik bijzondere herinneringen aan onze trainingen in wetenschappelijk engels. Dan nog de eerste man met wie ik de eer heb gehad een rekening te delen, Aart. Het proefschrift is volgens mij het enige waarin we niet samengewerkt hebben. Wat hebben we een lol gehad, in onze projecten, maar zeker ook in de feestcommissie.

Verder natuurlijk mijn (inmiddels ex) buurvrouwen, Nanda en Susan. Jullie zorgden mede voor de nodige ontspanning op de werkplek. Monique en Angelique bedankt voor alle ondersteuning, zowel fysiek als mentaal ;-). Jef voor de cryptische syntaxteksten die SPSS toch maar mooi lieten doen wat ik wilde. Sandra bedankt voor het mooie ontwerp dat nu op de voorzijde prijkt. En last but zeker niet least, mijn twee paranimfjes, Trijntje en Maartje. Ik vind het heel bijzonder dat jullie deze dag op deze manier met mij willen delen. Jullie enthousiasme is zo aanstekelijk dat ik toch nog iets van een feestje ga doen, hoewel ik altijd heb geroepen dat ik dat niet wil.

Ook mijn huidige DPA Supply Chain People collegae wil ik graag bedanken. Hier heb ik mijn stress die ook na het voltooien van het manuscript plaatsvindt kunnen ventileren.

Dank voor het aanhoren van de verhalen hoewel het toch een onderwerp is waar de meeste van jullie weinig affiniteit mee hebben. Max dank voor de bijdrage in de totstandkoming van de druk van het proefschrift. Ben nu toch blij dat het een boekje geworden is in plaats van een DVD.

Maaike, jij bedankt omdat je altijd meeleeft en belangstelling toont, zowel qua proefschrift als privé. Ik hoop dat onze vriendschap nog lang voort blijft bestaan.

Tot slot, de mensen die het allerdichtst bij me staan. Te beginne, mijn ouders. Pap en mam heel erg bedankt voor alles eigenlijk. Jullie zijn de basis van de persoon die ik nu ben. Niet alleen omdat jullie mijn opleiding gefaciliteerd hebben, maar ook omdat jullie me het vertrouwen en doorzettingsvermogen gegeven hebben dat nodig is om zo'n traject te doorlopen. Ik heb het gevoel dat ik altijd bij jullie terecht kan! Harm, ook jij hebt bijgedragen aan dit werk en bovendien heb je ervoor gezorgd dat de druk perfect geregeld is. Dan blijft er nog één persoon over die absoluut niet mag ontbreken in dit dankwoord, namelijk Bob. Lieffie, super bedankt voor je liefde, je begrip, je geduld, je belangstellende berichtjes en je onvoorwaardelijke steun. Ben super trots dat je op deze dag naast me staat.

Curriculum Vitae

;-)

Curriculum Vitae

Daantje Derks werd geboren op 28 oktober 1978 te Tegelen. Na het behalen van het Atheneum diploma in 1997 aan het Bouwens van der Boije college in Panningen, ging ze Psychologie studeren aan de UM te Maastricht. Bij het allereerste vak, sociale psychologie, wist ze al dat dit haar afstudeerrichting zou moeten worden. Helaas was dit in Maastricht niet mogelijk. Vandaar in 1998 de overstap naar de toen nog Katholieke Universiteit Nijmegen. Gedurende de studie heeft ze als student assistent binnen de vakgroep sociale psychologie diverse malen als begeleidster van onderwijsgroepen en practica opgetreden. In 2001 afgestudeerd met de scriptie: De invloed van achterdocht op evaluaties van verkopers een aankoopgedrag: slijmende verkopers weten zelfs achterdochtige kopers te overtuigen. In 2001 gestart bij de faculteit Psychologie van de Open Universiteit Nederland in de functie van junior docent binnen het IMTO project. 2 jaar later doorgestroomd naar een universitair docent functie. Vanaf 2007 is ze werkzaam als account manager bij DPA Supply Chain People te Amsterdam.