More than Words: The Effect of Emoticons in Electronic Negotiations

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Abstract. While affect plays a similar fundamental role in both, electronic and face-to-face negotiations, the expression of emotions in computer-mediated communication differs considerably from face-to-face settings. The aim of this experimental study is to analyze how the systematic use of emoticons – facilitated with software – affects negotiation behavior in alternative computer-mediated negotiation settings. With a 2x2 design comparing system-induced emoticon use with a text-only condition in synchronous chat or asynchronous e-mail mode we isolate effects of emoticons in these different communication settings. Results show that emoticons are used in different functions, i.e. mainly to supplement and support text messages and less often to mitigate its content. Furthermore, emoticon support increases the communication of positive affect in asynchronous negotiations while it decreases communication of negative affect and distributive negotiation behavior in synchronous negotiations. These findings propose that advancing communication quality via contextualization of affective information in negotiation support systems is promising.

Keywords: emoticons, contextualization of information, emotions, negotiations

1 Introduction

New information- and communication technologies provide a variety of different media for synchronous and asynchronous communication within and between individuals and private and public entities. E-mail, social networks, chat systems, electronic diaries, and similar technologies are used to coordinate day-to-day business, to interact with colleagues and customers at different locations, and also to a great extent to conduct negotiations. There has been a historic dispute on whether or not computer-mediated communication (CMC) has similar socio-emotional qualities compared to face-to-face communication (F2F). Researchers representing a cues-filtered-out perspective [1, 2] propose that with reduced media bandwidth, social presence is reduced: Due to missing non-verbal and para-verbal cues in CMC contextual information and emotions are filtered out resulting in less friendly, less emotional and less personal communication. This has been opposed particularly by the social information processing (SIP) model [3, 4] which advances that

communicators in CMC may need more time to compensate the missing non-verbal and para-verbal cues in order to bring relational effects to similar levels compared to F2F. A recent review of empirical evidence concludes, that "*there is no indication that CMC is a less emotional or less personally involving medium than F2F*" [5, p.766]. Nevertheless, communication technologies affect how we communicate and what we communicate [6]. While more traditional approaches like the Media Richness theory postulate that communicators should base their media choice on task characteristics [7, 8], more recent theories advance that communicators should adapt their communication strategy according to task characteristics and the communication process, including the communication goal and strategy, the medium and message form, and communication complexity [6]. For instance, in case communicators need to resolve a conflict with less rich media, e.g. e-mail, they have to contextualize task-oriented communication with relational or emotional information to compensate for the lean medium. Information- and communication systems should be designed to support these processes [9, 10]. Therefore, a particular focus is now laid on emotion encoding as well as on contextualization in CMC since these aspects shape interpersonal communication aiming for mutual understanding and relationship management [6].

One possibility to contextualize and encode emotions in CMC is the use of emoticons (standing for *emotion* and *icon*), which are referred to as relational icons, visual cues or pictographs serving as surrogates for non-verbal communication to express emotion and adding a para-linguistic component to a message [11]. Within the last decade, there has been some empirical research analyzing the effect of emoticons in CMC in general (for an analysis see e.g. [12]) which shows that emoticons - beyond serving as paralanguage - are morpheme-like structural markers with illocutionary force [12].

Yet, in electronic negotiation research, the analysis of the influence of emoticons on negotiation behavior, processes and outcomes is lagging. Since the significance of emotions in negotiations is undisputed, the aim of this experimental study is to analyze how the systematic use of emoticons affects negotiation behavior in computer-mediated negotiation settings. Referring to Media Richness Theory and its three dimensions [7, 8], i.e. (1) multiple information cues, (2) personal address, and (3) feedback immediacy, we are particularly interested in how feedback immediacy and emoticons interrelate in negotiations. With a 2x2 design comparing system-induced emoticon with a text-only condition in both modes, synchronous chat and asynchronous e-mail mode, we can isolate effects of emoticons in different communication settings. A more profound understanding of the effects of emoticons on synchronous and asynchronous electronic negotiation processes and outcomes will contribute to the further development of communication support for negotiations.

The remainder of this paper is organized as follows: the next section reviews the literature on computer-mediated communication, system design and the role of affect in communication. Based on the state of the art, we formulate hypotheses for the experimental study. In section three the experiment and methods of data analysis are introduced. Results are presented in section four and in section five we discuss the findings and limitations of this study and provide suggestions for future research.

2 Theoretical Background

2.1 Cognitive-Affective Model of Organizational Communication

The so-called "Cognitive-Affective Model of Organizational Communication" is based on the notion that the main objective of interpersonal communication is to reach mutual understanding between the communicators and to manage the relationship [6]. The degree to which communicators are able to reach these objectives depends on communication inputs, the communication process, and communication complexity. While the communication inputs describe antecedents of the process such as task characteristics, in the communication process the communicators' goals define their strategies, which in turn interact with the use and the characteristics of the medium and the specific message form. These interactions are shaped by the communication complexity surrounding the entire construct (see Fig.1). Communication complexity consists of three elements acting as barriers to mutual understanding and relationship management: (1) cognitive complexity as a function of information intensity, multiplicity of views and incompatibility between information representation and use, (2) dynamic complexity referring to feedback processes and time constraints and (3) finally, affective complexity which refers to the sensitivity and change of attitudes towards the communication partner or the subject matter. Affective complexity considers relational aspects in the communication process including affective behavior and trust building. Low levels of trust and a lack of an appropriate normative context in which the communication is embedded impede reaching mutual understanding and the establishment of a good relationship.
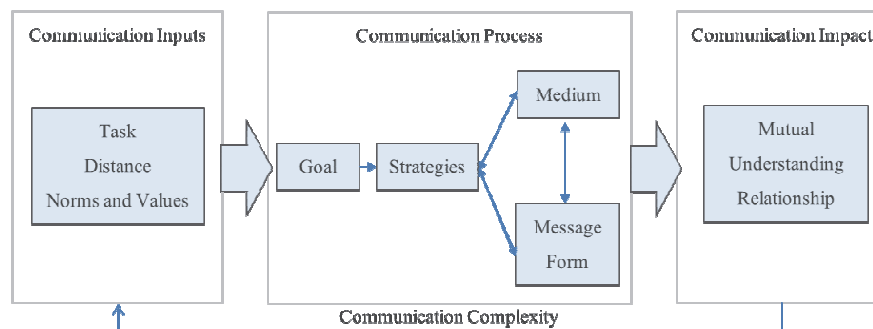

Fig. 1. Cognitive-Affective Model of Organizational Communication (adapted from [6], p. 256)

Negotiations are described as a process of conflict resolution between parties who interact with each other shaping their outcomes and their relationship [13]. Mutual understanding and a good relationship are important prerequisites to reach integrative solutions satisfying the needs and interests of the involved parties [14]. Negotiations are tasks in which all three dimensions of complexity are reflected. Therefore, handling the affective complexity is closely related to providing the basis for

integrative negotiations. Communication directed at the management of affective complexity requires the inclusion of explicit affective statements typically requiring higher channel capacity [6]. Alternatively, negotiators can externalize the provision of additional affective information to the communication system [10].

2.2 Emotion as Social Information in (Electronic) Negotiations

In either way, emotion management in negotiations is a very promising avenue. The impact of emotions on negotiation processes between inherently social and emotional human beings is well established. Emotions can induce both, competitive or cooperative behaviors: negative emotions tend to increase competitiveness, while positive emotions tend to increase cooperation (e.g. [15, 16]). Nevertheless, positive emotions may also negatively affect negotiations. They may induce irrational behavior [17] and lead to biased judgments [18] or expectations [19, 20]. Similarly negative affect can also have positive effects: Empirical studies show that negative affect may motivate or induce negotiators to provide information [20, 21], help to overcome a crisis if power differences between negotiators exist [21, 22] or induce cooperative behavior [23].

The analysis of emotions has also found some attention in electronic negotiations research. It has been shown that in the restricted environment of CMC, emotions provide important contextual meaning for the interpretation of messages [24]. Furthermore, affect is contagious and tends to be reciprocated also in CMC [22]. However, the presence of emotions is not always salient and their particular influence may differ from F2F-negotiations. Earlier research has suggested that emotions contribute to a form of "hyperpersonal" communication [25] or to extreme behaviors like flaming [1]. Therefore, researchers have pointed out that more work is needed in order to develop a more comprehensive understanding of how emotions work and evolve in virtual environments [26].

[27, 28] proposed the Emotion as Social Information (EASI) Model to predict the effect of emotion on communication processes: according to the EASI model observers draw inferences from others' emotional expressions, which in turn guide their own behavior and/or response. In negotiations, the specific social effects of positive and negative emotions depend on whether negotiations are embedded in a more competitive or more cooperative context. In a competitive context the display of anger reflects that the negotiator expressing anger has reached her limits, e.g. her aspiration level, and is not willing to give in anymore. Therefore, negative emotions are more likely to induce the counterpart to react with more cooperative behavior. Conversely, in a cooperative environment the expression of negative emotions is more likely to reduce cooperative behavior as it conveys adverse signals and elicits similar emotions in the counterpart.

Empirical evidence on the EASI model proves that both the verbal expression [15, 29] as well as the nonverbal expression [30] of emotions can be used strategically to influence others in face-to-face settings. In CMC, emotions are (implicitly) conveyed in text messages by the wording and phrasing of utterances [31]. [32] provide a comprehensive linguistic discussion of threats and promises in negotiations demonstrating how semantic and syntactic features of the speech acts influence their

perception and effectiveness. They show that specifically language intensity and language immediacy reveal the strength and the direction of a negotiator's affect. While language intensity is determined by the lexical choice, language immediacy is not expressed explicitly but is an unconscious process in which a speaker's affective states influence his or her lexical and syntactic choices [32, p. 162]. Additionally, communicators can use contextualization cues such as non-standard spelling, letter and punctuation mark repetition (e.g. ???) or lexical surrogates (e.g. hmmm) and the like as linguistic form to express affect. These cues contribute to the signaling of "contextual presuppositions" that allow for inferences about the meanings people intend to convey in a specific situation (Gumperz, cited in [33], p. 142). Particular forms of contextualization cues are emoticons. They are considered to be the socio-emotional suppliers in CMC (e.g. [33]). Compared to verbal description of emotions or implicit conveyance through specific lexical choices, emoticons provide a direct, precise and convenient way of emotional expression in CMC. Because of this they have received a worldwide acceptance [5] and several CMC software programs, such as for example MSN, ICQ, Hotmail, etc. have embedded an emoticon function (converting ASCII based character strings into pictograms). They are mostly used to express emotions, to strengthen a message or to express humor [34]. Their use also affects impression formation in relationships: when communicators use positively valenced emoticons their personality is perceived to be more extrovert [35], friendlier and warm [36].

In principle, emoticons can be classified in pictorial emoticons, e.g. Santa Claus *<\:-) or emotional-attitudinal emoticons [37] that represent[1]:

(a) *facial expressions:* happy :-), laughing :-D, sad :-(, angry :-{, wink ;-)…
(b) *action:* kiss :-*, yawn 1-O, screaming :-@, big hug ((H))… or
(c) *appearance:* big nose :o), wearing glasses B-)…

The use of emoticons in CMC differs from medium to medium and shows even a huge variety within different types of media: [38] analyzed emails on listservs and found that they were used between 1 to 25% of the emails depending on the listserv. [39] found in a longitudinal analysis of text messaging from smartphones that only 4% of messages contained at least one emoticon. [40] investigated emoticons in instant messaging discourses and found that out of the eighteen different emoticons which were used at all, just three of them – all with a positive valence – were used in 75 % of all cases. Furthermore, emoticons tend to be used more often in synchronous than in asynchronous communication [34] and – in accordance with Hall's theory of contextuality of cultures - are used more by users coming from high-context cultures [41]. There also seems to be a gender difference in emoticon use [12].

2.3 Hypotheses

It has been proposed that verbal and nonverbal cues are equally important for text interpretation in CMC [42]. Furthermore, the interpretation of non- and para-verbal cues is analogue to F2F encounters context-sensitive, see e.g. [33, 42, 43]. Emoticons

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[1] There are hundreds of emoticons which have been catalogued in dictionaries and on Websites (e.g. Wikipedia).

and other CMC cues interact with other verbal and nonverbal cues and have – depending on the context of communication – mainly the following three different functions [11, 12, 37]:

i. *Supplement*: When emoticons are added as paralinguistic in order to convey an important aspect of a linguistic utterance, they help to clarify the meaning of a text and to eliminate misunderstandings: e.g. "When I returned home, she was already there :-(". The textual message could be understood both, in a positive and negative way. With the added emoticon the meaning is clarified unequivocally. Here, the emoticon is used as an illocutionary force [12] that augments the meaning of textual message by substituting non-verbal cues.

ii. *Support*: Emoticons are also used to support a text message: e.g. "*I am happy :-)*". In this case, there is a denotative correspondence (congruence) between the text and the emoticon.

iii. *Antiphrasis*: When emoticons are used to contradict or annul the verbally expressed meaning, they produce ambiguity. Used in this way, they are used to express sarcasm: "*I am happy :-(*", irony: "*This has to be taken very seriously ;-)*", or to mitigate disagreement: "*Sorry, but I do not agree :-)*"

These functions have been analyzed in empirical studies which show that emoticons indeed can strengthen the impact of a verbal message [11, 34, 43], help to emphasize a meaning during message creation and interpretation [38, 43], and to clarify textual messages [11]. Furthermore, emoticon use is significantly correlated to perceived information richness and perceived usefulness [44]. [44] also shows that emoticon use increases enjoyment and personal interaction by eliminating difficulties in expressing feelings in words. In this light, emoticons fulfill similar functions as non-verbal displays in F2F communication [5, 38]. We therefore expect that negotiation processes that are facilitated with systems enforcing users to complement their textual messages with emoticons will differ in several aspects to negotiation processes without emoticon support.

First of all, we expect that negotiators provided with emoticon support write less text, i.e. exchange less thought units. The emoticons serve as supplements to written text:

H1: **Emoticons serve as supplement to text messages in electronic negotiations.**

Most research concerning the influence of positive and negative emoticons on the message interpretations supports the idea that positive emoticons make the message more positive and negative more negative correspondingly [11, 45]. Consequently, we hypothesize that positive emoticons will support cooperative behavior and negative emoticons will support competitive behavior. We therefore expect a positive correlation between use of positive emoticons (happy, laughing) text messages containing agreement or concession and a positive correlation between the use of negative emoticons (sad, angry) with text messages containing rejection or disagreement, respectively.

H2: **Emoticons are used to support textual messages (congruence)**

Although it can be assumed that emoticons are more often used to supplement or support text messages, we expect that we also find communication in which emoticons are used as antithesis. [42] found in her analysis that emoticons and other

CMC cues are sometimes used to mitigate or aggravate disagreement. Emoticons can be used to create ambiguity and to express sarcasm varying the valence of the emoticon and the valence of the message [46]. When used as antiphrasis, positive emoticons (happy, laughing) are used to mitigate textual disagreement (e.g. *"I am sorry, but this offer does not meet my expectations :-)"*. Negative emoticons (sad, angry) used with agreement in text messages are used to express sarcasm (e.g. this is really a wonderful offer :-(, 'winking' and 'eat my shorts' emoticons used with positive/negative agreement are used to express irony/sarcasm (e.g. *"Your competitive offers make me very happy ;-)"*.

> **H3:   Emoticons are used to mitigate disagreement or to express sarcasm (antiphrasis)**

The use of the smile emoticon has been found to be a positive politeness strategy that creates a collaborative work environment [33]. Also [42] finds in her analysis of chat negotiations, that emoticons and CMC cues were used mainly in the service of politeness. However, we assume that this effect is mediated by communication mode as this impacts feedback immediacy. Communication media with low feedback immediacy (asynchronous media) are less adequate to handle high affective communication complexity [6]. Furthermore, in the context of e-negotiation, negative emotions can be better controlled in asynchronous communication modes [47]. Thus, we hypothesize a positive effect of emoticon support particularly in asynchronous negotiations. Since asynchronous negotiations tend to be less emotional, the threat of escalating emotional statements is limited and emoticons can unfold their supportive function. In synchronous negotiations, on the contrary, we expect that the use of emoticons boosts (negative) emotions. We assume that this eventually results in more competitive behavior.

> **H4:   Emoticon support facilitates integrative negotiation behavior in asynchronous but not in synchronous negotiations.**

Referring to F2F negotiations, researchers use emotional states as predictors of negotiation outcomes [48]. For instance, [48] find that negotiators were more likely to accept a proposal from a negotiator displaying positive emotion than from a negotiator displaying negative emotion. Due to the expected increase in integrative behavior – in particular in asynchronous negotiations – and the increased mutual understanding combined with a better handling of the relationship, should also influence the likelihood to reach an agreement.

> **H5:   Emoticon support leads to more agreements in asynchronous but not in synchronous negotiations.**

3   Methodology

To test our research questions, we collected data in a 2x2 laboratory experiment at two European Universities (within one country). The 2x2 design varies the communication mode (synchronous/asynchronous) and the availability of emoticon support (available/not available) (see Table 1). The used negotiation case described a situation in which the subjects had to decide in bilateral negotiations on a Friday

evening program considering three alternatives following predefined and conflicting preferences.

Table 1. Treatments (n = number of participants)

	Emoticons	No Emoticons
Synchronous	n = 24	n = 32
Asynchronous	n = 26	n = 16

The treatments of the design were implemented in a text-based electronic communication support system N-SWAN, which facilitated participants to exchange, store and retrieve messages. The implemented emoticon feature forced users in the "emoticon treatment" to tag each text message with an emoticon; otherwise users could not send the text message. Negotiators could choose among six different types of emoticons: 'happy' & 'laughing' are emoticons with a positive valence whereby the latter one expresses stronger arousal than the former, 'sad' & 'angry" are emoticons with a negative valence whereby the latter expresses a stronger arousal than the former, and finally two emoticons 'winking' & "eat my shorts'. Winking has a positive valence, while "eat my shorts" has a strong negative valence. We decided to use pictograms instead of ASCII-based character strings, because empirical evidence points to a somewhat stronger impact of pictograms on communication [35]. In the experiment, negotiations in the synchronous communication mode could last up to one hour whereas asynchronous negotiations were allowed to take up to a maximum period of three days. Demographic data was collected at the beginning of the experiments via questionnaires, while exchanged messages and emoticons were recorded by the system.

Table 2. Category Scheme

	Integrative	Distributive
Action	(1) Agree, Accept, Concede	(4) Reject or Disagree
	(2) Show Positive Emotions	(5) Show Negative Emotions
	(3) Make a new Offer	(6) Use Tactics or Threats
Information	(7) Provide Information	(9) Use Persuasive Arguments
	(8) Request Information	
Off-Task Categories	(10) System-Related Communication, (11) Off-Task communication, (12) Communication Protocol	

We applied content analysis as means to transform the 2,972 exchanged messages into quantitative data [49]. The text messages of all 49 negotiation transcripts were unitized into 3,686 thought units and coded into the pre-tested category scheme of [50] (see Table 2) by two independent coders (Guetzkow's U of 0.054, Cohen's kappa 0.848). Additionally, emoticon functions (supplement, support, antiphrasis) were also coded in reference to the text messages by two independent raters (Cohen's kappa 0.855).

4 Results

In the 895 text messages of the emoticon treatment, emoticons are overwhelmingly used as a supplement (766 times, 84.3%). Only 30 times (3.4%) emoticons were coded as being redundant to the text messages and in 110 cases (12.3%), the emoticon was used as antiphrasis to the text. While the use of the three functions differs significantly ($X^2(2) = 1059.27$, p <.001) they are distributed similarly between synchronous (supplements 87.1%, redundancy 1.7%, antiphrasis 11.3%) and asynchronous negotiations (supplements 80.2%, redundancy 5.9%, antiphrasis 13.8%). These results provide support for the notion that emoticons serve different functions. In the following, we further elaborate the data in more detail.

H1 suggests that emoticons are used to supplement text messages and therefore substitutes written text in messages. Therefore, we also test for differences in number of thought units in the respective treatments (see Table 3). Factorial ANOVA shows a significant main effect of emoticon support $F(1,94) = 19.012$, p <.001, a non-significant main effect of the communication mode, $F(1,94) = 1.432$, p = .234, and a non-significant interaction effect, $F(1,94) = .464$, p = .497 on the amount of exchanged thought units. ANOVA post-hoc tests verify that the differences between groups due to the used communication mode are significant, within the synchronous treatment, p <.01, as well as within the asynchronous treatment, p<.05, however, not between the two groups using emoticons, p >.1, and between the two groups not using emoticons, p > .1 [2]. Therefore, H1 is clearly supported.

Table 3. Number of Absolute Thought Units across the Four Different Treatments

Treatments		Mean	Std. Dev.
Emoticons	Synchronous	26.79	18.57
Emoticons	Asynchronous	24.04	13.46
No Emoticons	Synchronous	53.72	28.64
No Emoticons	Asynchronous	43.69	39.84

H2 and H3 propose that emoticons are also used to support text messages (congruence between text message and emoticon) or to mitigate disagreement, to express sarcasm or irony (antiphrasis of emoticon to text message). Therefore, we analyzed in addition to the frequency analysis reported above, whether emoticons are related to specific behavioral patterns reflected in the communication categories. On average, negotiators used most often the "happy"-emoticon (M= 11.70 per negotiation, SD = 12.30). The emoticons "sad" (M=2.28, SD = 4.11) and "winking" (M=2.74, SD = 2.77) were similarly often used. Every second negotiator used one time the emoticon "angry" (M = 0.50, SD = 1.39) or the "laughing" emoticon (M = 0.52, SD = 1.18). Negotiation dyads referred least frequently to the "shorts" emoticon (M = .16, SD = 0.47). To test whether emoticons are linked with specific communication patterns we ran correlation analysis using Spearman's rho and performed bootstrapping (n =

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[2] All reported post-hoc tests in our manuscript are 2-tailed and based on bootstrapping, n = 1000, using either Bonferroni or Games-Howell comparisons in case that the Levene test indicates a violation of homogeneity of variances, p <.05

1000) to increase reliability of our confidence intervals. Results show that frequencies of used emoticons correlate with the relative frequencies of integrative and distributive action categories but only to a minor degree with information categories: The "happy" emoticon correlates positively with "agreeing, accepting, conceding", rs = .297, p < .1, and expressing positive emotions, rs = .325, p <.05, and negatively with communication used to reject or disagree, rs = -.225, p <.1, and expressions of negative emotions, rs = - .328, p <.05. The use of the "sad" emoticon is negatively linked to "agreeing, accepting, conceding", rs = -.281, p <.1, and expressing positive emotions, rs = - .257, p <.1. Similarly, the "angry" emoticon is less used in combination with the communication categories "agree, accept, concede", rs = -.284, p <.05, but rather with statements expressing negative emotions rs = .284, p <.1. The emoticon "winking" is related to providing information to the counterpart, rs = .238, p < .1. Last, the emoticon "shorts" is positively linked to expressions of rejection and disagreement, rs = .220, p < .1, and expressions of negative emotions rs = .329, p < .1. Consequently, we find empirical evidence for H2 proposing that emoticons are indeed used in congruence with text messages.

To evaluate how emoticons are used as antiphrasis (to mitigate the statement of the textual message or to express sarcasm or irony) we ran additional nonparametric group analyses. Of all 110 emoticons serving as antiphrasis, the happy emoticon is used 76 times, the sad emoticon 12 times, the winking emoticon 16 times, the laughing emoticon 5 times, and the shorts emoticon once, while the angry emoticon was used never as an antiphrasis. Considering this distribution, we only analyzed text messages with the happy or sad emoticon using the Holm-Bonferroni approach to control for type I errors. Results indicate that the sad emoticon is more often used than the happy emoticon in combination with categories "new offers", "tactics or threats" and "request information", (all p <.05). Furthermore, we find no differences in the used relative communication units when either the sad or the winking emoticon are used. Therefore, we find no clear pattern how emoticons are used as antiphrasis (H3).

In the next step we evaluate how emoticon support and communication mode affect communication behavior (H4). Investigating the effect of the use of emoticons in synchronous and asynchronous negotiations, we run a factorial MANOVA including all communication categories[3]. We find significant effects on the communication behavior depending on emoticon support, $F(12,83) = 2.271$, p <.05, communication mode, $F(12,83) = 1.944$, p <.05, and the interaction between both treatments, $F(12,83) = 3.103$, p <.005. Due to problems with assumptions of MANOVA[4], we additionally run individual factorial ANOVAs for the action- and information-oriented communication categories and additionally perform multiple comparisons with

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[3] Testing the assumption of normality, all relative subcategories show significant deviations from normality. To cope with the skewed data, we apply a Box Cox transformation anchoring all values at 1 and using a λ of -6.5. The transformation of the data is rendered necessary as initial calculations of F-values in MANOVAs are not supported by bootstrapping.

[4] Checking the assumptions of MANOVA, the Box's Test of equality of covariance matrices indicates a violation of the assumption of equality of covariance matrices (p < .000). Furthermore, the Levene test indicates that the assumption of equality for error variances is violated for several communication categories.

bootstrapping (n=1000) for the conditional main effects. The results indicate that the relative frequencies of integrative and distributive action- and information-oriented communication differs significantly in the treatments (see Table 4).

Table 4. Effect of Emoticons and Communication Mode on Communication Behavior (p° results based on bootstrapped multiple comparisons, n = 1000)

Integrative Action				Distributive Action			
Communication Category	Ind. Variable	F	p (p°)	Communication Category	Ind. Variable	F	p (p°)
Agree, Accept, Concede	Emoticon	1.522	.220 (.273)	Reject or Disagree	Emoticon	2.648	.107 (.148)
	Comm. Mode	0.041	.839 (.857)		Comm. Mode	0.122	.728 (.744)
	Interaction	7.061	.009		Interaction	1.203	.275
Positive Emotions	Emoticon	2.955	.089 (.085)	Negative Emotions	Emoticon	1.324	.253 (.194)
	Comm. Mode	0.263	.610 (.596)		Comm. Mode	9.129	.003 (.001)
	Interaction	5.987	.016		Interaction	6.458	.013
New Offer	Emoticon	0.639	.426 (.452)	Tactics or Threats	Emoticon	2.081	.152 (.170)
	Comm. Mode	3.405	.068 (.067)		Comm. Mode	0.124	.726 (.739)
	Interaction	0.369	.545		Interaction	0.001	.978
Integrative Information				**Distributive Information**			
Provide Information	Emoticon	3.640	.059 (.070)	Persuasive Arguments	Emoticon	11.366	.001 (.004)
	Comm. Mode	0.040	.841 (.851)		Comm. Mode	0.016	.898 (.903)
	Interaction	0.001	.970		Interaction	4.114	.045
Request Information	Emoticon	1.033	.312 (.310)				
	Comm. Mode	0.362	.549 (.533)				
	Interaction	0.423	.517				

In more detail, integrative negotiation behavior differs in the treatments (see Fig. 2): In the synchronous treatment, post-hoc tests show that negotiators in the emoticon support treatment express more often communication intended to "agree, accept or concede", p <.01. Furthermore, when negotiators have emoticon support, they use more communication for approval in the synchronous than in the asynchronous treatment, p <.05.
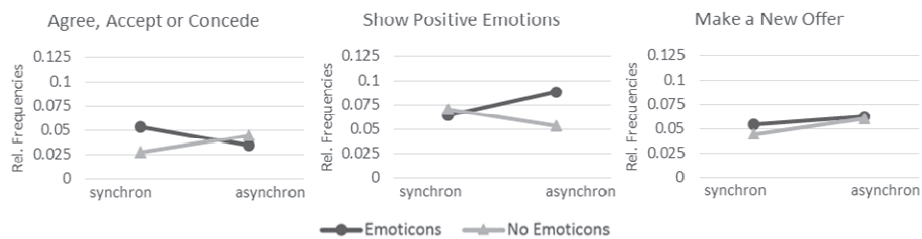

Fig. 2. Impact of Emoticons and Communication Mode on Integrative Communication Behavior

We also find a weak significant main effect of emoticon support (p<.1) and a significant interaction with communication mode (p<.05) on the expression of positive emotions in text messages. Within the asynchronous treatment, negotiators express more positive emotions when they have emoticons support compared to no emoticons support p<.05. Furthermore, when negotiators have emoticons support, they tend to express more positive emotions when engaging in asynchronous compared to synchronous negotiations, p <.1.

Regarding the exchange of offers, bootstrapped group comparisons find negotiators in the synchronous treatment without emoticons support to use less new offers, than in the asynchronous treatment with emoticons support, p<.05, as well as without emoticons support, p<.1.
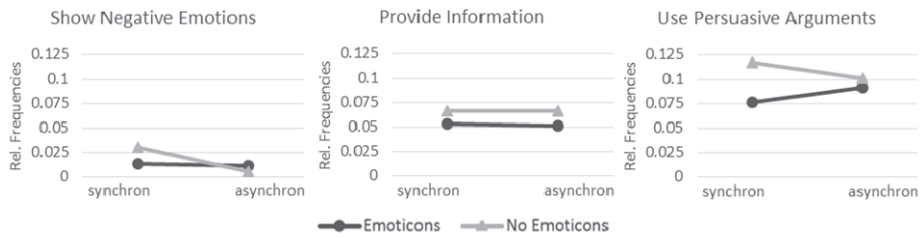

Fig. 3. Impact of Emoticons and Communication Mode on Distributive Communication Behavior

Furthermore, the expression of negative emotions is substantially influenced by the communication mode, p <.01, interacting with the emoticon support, p <.05. Negotiators in the synchronous treatment without emoticons support express most negative emotions (see Fig. 3). They express more negative emotions than negotiators in the synchronous treatment with emoticons support p <.05, and more than negotiators in both asynchronous treatments – with emoticons support, p <.01, and without emoticons support, p <.01. Furthermore, negotiators with emoticon support in the synchronous group express slightly more negative emotions than negotiators in the asynchronous group without emoticons support, p <.1.

Regarding the use of exchanged information, we find again a tendency for emoticons to act as substitute to the written exchange of information, p<.1, accompanied by a tendency that in synchronous negotiations without emoticons support more information is exchanged than in asynchronous negotiation with emoticons support, p <.1. Finally, the use of persuasive arguments differs substantially between groups. Negotiators in synchronous treatment without emoticons support use more persuasive communication than negotiators in both treatments with emoticons support (both, p <.01) as well as negotiators without emoticon support in asynchronous negotiations (p <.1). Subjects in asynchronous treatment without emoticons support engage in more persuasive behavior than subjects negotiating synchronously with emoticons support, p <.1.

Analyzing the effect of emoticon support and communication mode on the likelihood of reaching an agreement (H5), we find a significant association between our treatments and the agreement-rate, $X(3) = 6.330$, p <.05. This finding, however, is caused by the asynchronous communication mode that increases the agreement-rate, 17 out of 21 dyads reached an agreement in asynchronous negotiations, while in synchronous negotiations only 13 out of 28 dyads reached an agreement, $X(1) = 6.025$, p <.05, but not by emoticon support, 17 out of 25 dyads reached an agreement with emoticon support, while 13 out of 24 dyads reached an agreement without emoticon support, $X(1) = .987$, p =.387.

5 Discussion, Conclusion & Outlook

The management of affective complexity is fundamental for negotiators to reach mutual understanding in communication and a positive relationship [6]. We have proposed that integrative negotiations can be supported with communication tools that facilitate the contextualization of communication by providing emoticons. Results of the 2x2-designed laboratory experiment support this claim: First of all, emoticon support makes communication more effective. Our results show that negotiators with emoticon support need less words/text to reach agreements compared to negotiators without emoticon support (emotions are used to supplement text messages). Secondly, negotiators exhaust the full range of functions of emoticons by additionally using emoticons to support text messages (emoticons are used in congruence), to mitigate the content of text messages (emoticons are used as antiphrasis). Finally, emoticon support significantly changes negotiation behavior by facilitating integrative negotiation behavior.

However, the impact of emoticon support differs in communication modes related to feedback immediacy. Integrative negotiations are typically characterized by a dual focus on the task and the relationship, e.g.[14]. The contextualization of information via emoticons seems to mitigate effects of feedback immediacy of the medium: In asynchronous negotiations which are typically described as task-oriented and "cool conversations" [47] because of low feedback immediacy, emoticon support induces negotiators to more often express positive affect. Apart from using predominantly the happy emoticon to tag the messages, they also express more often positive emotions in the written text. In contrast to that, synchronous negotiations have been referred to "hot debates" [47]: high feedback immediacy induces negative affective and inhibited behavior. In synchronous negotiations, we have witnessed that emoticon support – again apart from supplementing text messages with positive affect through the happy emoticons – reduces distributive behavior reflected in less persuasive behavior and less expressions of negative emotions in the text messages. Furthermore, we also observe more integrative negotiation behavior with emoticon support reflected in more positive affective behavior. To put it in other words, emoticon support heats up (too cool) asynchronous communication with positive emotions, while it helps to cool down (too hot) synchronous communication. These results support the importance of contextualizing information in social interactions via lean media [6].

Recently more and more research areas traditionally rooted in more analytic approaches have created awareness that the consideration of behavioral human factors increases the ability of model-based problem solving to help decision makers [51]. Yet, in negotiation support, most systems still focus on traditional analytic support rooted in economic considerations of their designers. However, our results support the notion that system designers should give more weight to communication aspects of negotiations. Currently, only the system Negoisst puts a clear focus on communication support on the syntactic, semantic and pragmatic level [9]. The enrichment of text messages via a contextualization of factual context of a message similarly to Negoisst's communication enrichment should make affective dimensions of messages more explicit. While the necessity to develop affective systems is undisputed, given the current state-of-the-art, the use of text-based (pro-active) affective systems is a major challenge [10]. However, affective systems can already

be used for training purposes. In such an "emotional training" negotiators could be confronted with counterparts differing in their emotional reactions. Affective systems could use predefined sentences or entire text messages transmitting specific emotions, as already done for research purposes, see e.g. [15].

While our study delivers interesting insights, is not without limitations. Our results are based on one experiment using a single case and student subjects. The impact of the used emoticon support might also differ for varying degrees of conflict intensity. While the used case describes a realistic scenario for students rooted in the private life, business negotiations might require a different approach to contextualize affective information. Furthermore, in our analysis we have focused rather on integrative and distributive elements of the communication process and less on traditional economic elements of negotiations, like utility values used to e.g. compare characteristics of agreements. However, recent research directly comparing behavioral and economic support in negotiations postulates that effects of both support approaches are not limited to the respective support dimension, but actually show several spillovers [52]. Therefore, one promising avenue for future research is to untangle the relationship of contextualized information and its impact on economic dimensions of negotiations like concessions patterns and efficiency of agreements.

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