Face-to-Face Communication over the Internet

Social platforms such as MySpace, Facebook and Twitter have
rekindled the initial excitement of cyberspace. Text-based,
computer-mediated communication has been enriched with
face-to-face communication such as Skype, as users move
from desktops to laptops with integrated cameras and related
hardware. Age, gender and culture barriers seem to have
crumbled and disappeared as the user base widens dramatic-
ally. Other than simple statistics relating to email usage, chat
rooms, and blog subscriptions, we know surprisingly little
about the rapid changes taking place. This book assembles
leading researchers on nonverbal communication, emotion,
cognition and computer science to summarize what we
know about the processes relevant to face-to-face communi-
cation as it pertains to telecommunication, including video
conferencing. The authors take stock of what has been learned
regarding how people communicate, in person or over dis-
tance, and lay the foundations for solid research helping to
understand the issues, implications, and possibilities that lie
ahead.

Arvid Kappas is Professor of Psychology in the School of
Humanities and Social Sciences at Jacobs University Bremen.

Nicole C. Krämer is Professor of Social Psychology, Media
and Communication at the University of Duisburg-Essen.

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Face-to-Face Communication over the Internet

Emotions in a web of culture, language and technology

Arvid Kappas
Nicole C. Krämer

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Dedicated to Harald Wallbott – our esteemed colleague – who
would have loved to contribute to the book. We miss him.

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Preface

In 2010, almost all laptop computers are sold with built-in cameras and microphones. Together with bundled software, such as Skype, everybody with access to a fast connection can easily engage in face-to-face communication over the internet. FaceTime, in conjunction with Apple's iPhone, provides a convenient and portable face-to-face application. Other solutions have been announced and will be released at a rapid pace. Thus, while text-only, computer-mediated communication (CMC) is likely to have its place for years to come, face-to-face mediated communication is here for real and it is here to stay. Concurrently, threats to global mobility, due to the environmental consequences of air travel, or challenges to air travel, such as the global disruptions caused by threats of terrorism and natural disasters, have led to increased calls to use alternative ways to achieve communication and collaborative work goals that so far had been mainly dealt with in physical, face-to-face interaction. At the same time, social networks meld many-to-many communication with one-to-one communication in different chat systems, with and without video. In other words, mediated face-to-face communication has become a commodity in business and private contexts. Thus, a volume dealing with different facets of internet-based, face-to-face communication is timely and we hope it will be of interest to readers who want to learn more about the topic. One goal of the present volume is also to stimulate further research on this topic.

It is possibly strange to think that, just a few years ago, mediated face-to-face communication seemed an exotic topic. The costs of hardware, software, and fast internet connections were high, and professional video-conferencing systems in business contexts were rather an exception and notorious for their incompatibilities and complexity. About 25 years ago, in the context of my master's thesis, I was interested in presenting face-to-face communication in a believable way on video with somebody looking into the eye of the experimental subject to test the effects of nonverbal behavior on the attribution of emotions and attitudes. The idea of videophones was then already old,

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so participants in the study could probably well imagine such a system, despite the fact that they had never seen one for real. Attempts to introduce videophones had failed for many reasons – cost was always one of the most cited. However, indications of their socially problematic nature were obvious to everybody who thought about the implications of having a moving image accompany a telephone-like conversation.

I have very clear memories of watching the German science fiction TV series *Raumpatrouille* as a child in the 1960s. The series predated *Star Trek* slightly and, while looking a bit quaint by today's standards, has gained cult status in Germany and still sells on DVD. The episodes contained many futuristic elements, ranging from humanity living under water due to the effects of global warming (!) to various technological advances, including a videophone communication system called *visiophone*. The following scene comes from the fifth episode of the series called "Kampf um die Sonne," first televised in November 1966 (script by Honold and Larsen). From his apartment, Commander Cliff McLane calls his security officer Tamara Jagellovsk on the visiophone. She answers "Hello?" but the screen of the visiophone remains dark. Surprised and a bit irritated, McLane starts, "Is that you, Tama——Lieutenant Jagellosvk?" and after she identifies herself, he asks Tamara why she does not switch on the screen. She replies that he might guess, and he, apparently a bit embarrassed, says, "Oh, you are probably not alone." She laughingly says that it is nothing like that but that she has just run a bath, to which he replies that this is a silly concern because he could, in any case, see only her head and neck. She answers, embarrassed, that she would feel that her neck looked too exposed for a work-related conversation when she was not dressed. After he persuades her to put on a bathrobe, Tamara finally switches on her screen. At the end of the conversation, McLane compliments her on her bathrobe. She answers, "Why, thank you!" to which he replies, "Particularly if you forget to close it completely." Flustered, Tamara terminates the connection. Apart from the fact that this little scene underlines McLane's reputation as a flirt and tease, there is much interesting here regarding communication via videophone: (1) having a visual connection has an influence on identifying the interaction partner, avoiding the type of misidentification that happens occasionally on the telephone; (2) if the video channel is available but not used, the interaction partner is likely to have suspicions as to the motivation; (3) at times, one might not feel comfortable in using the video channel (particularly with superiors when one is undressed, apparently); and (4) mixing different contexts involving dress, makeup, and the like that are not an issue when taking a voice-only call becomes relevant if the visual channel is added.

Figure 0.1 Participants of the ESF Workshop, Face-to-Face Communication Over the Internet: Emotions in a Web of Culture, Language, and Technology, April 6–7, 2002, Hull, UK. First row from left to right: Malathy Rengamani, Eva Krumhuber, Pierre Philippot, Arvid Kappas, Pio Enrico Ricci Bitti, Monique De Bonis. Second row from left to right: Gary Bente, Karl Grammer, Nicole C. Krämer, Brian Parkinson, Antony S. B. Manstead. Third row from left to right: Veikko Surakka, Arto Mustajoki (SCH representative), Harald Wallbott, José-Miguel Fernández-Dols.

Inspired by these childhood memories from the 1960s, my own research in the 1980s (see Hess *et al.*, 1988) and the discussions with Harald Wallbott, then working in Klaus Scherer's group at the University of Giessen, I felt at the outset of the new millennium that the time had come for a concerted effort to focus research on such a medium. In 2002, I convened an exploratory workshop "Communication over the Internet: Emotions in a Web of Culture, Language and Technology," funded by the Standing Committee for the Humanities of the European Science Foundation, inviting eleven researchers from nine European countries to identify the issues involved in face-to-face communication over the internet. The workshop was held on April 6–7 and concluded with the intention to produce a book that would address several of the issues identified. Most of the authors in this volume participated in this workshop (see Figure 0.1).

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Some time after the workshop, the idea of an edited volume came into being, and I was truly happy to recruit Nicole C. Krämer, who had attended the workshop as a junior member, as a co-editor for this task. Many people have helped this project along the way, ranging from the local support during the workshop by Eva Krumhuber, Dimitrios Xenias, and Malathy Rengamani, to several student assistants who helped with the editing. I am particularly indebted to the reviewers who have graciously given their time and of course to the European Science Foundation for their support early on, specifically Philippa Rowe. Our partners at Cambridge University Press have always been very helpful and patient, and we hope they like the finished product. I would like to thank particularly Sarah Caro for help in the early stages and, more recently, Hetty Reid.

One of the participants in the workshop, Harald Wallbott, a pioneer in nonverbal communication research with a particular interest also in social psychological processes in mediated communication, died unexpectedly in 2003. It was Harald who was supposed to write the first chapter, highlighting some of his early research, such as the relevance of image size to the perception of emotions (e.g., Wallbott, 1992). All authors agreed that this volume should be dedicated to his memory. Those who knew him appreciated his sense of humor and creative spirit. His death is a loss to our science.

Arvid Kappas
Bremen, June 2010

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Contributors

Gary Bente,
University of Cologne, Germany

Pilar Carrera,
Universidad Autonoma de Madrid, Spain

Céline Douilliez,
University of Lille 3, France

José-Miguel Fernández-Dols,
Universidad Autonoma de Madrid, Spain

Agneta Fischer,
University of Amsterdam, The Netherlands

Pier Luigi Garotti,
University of Bologna, Italy

Jeannine Goh,
University of Manchester, UK

Karl Grammer,
University of Vienna, Austria

Martin Lea,
University of Manchester, UK

Antony S. R. Manstead,
Cardiff University, UK

xiv   *List of contributors*

Elisabeth Oberzaucher,
University of Vienna, Austria

Brian Parkinson,
University of Oxford, UK

Pierre Philippot,
Université de Louvain, Belgium

Pio Enrico Ricci Bitti,
University of Bologna, Italy

Susanne Schmehl,
University of Vienna, Austria

Veikko Surakka,
University of Tampere, Finland

Toni Vanhala,
University of Tampere, Finland

Joseph B. Walther,
Michigan State University, USA

Abbreviations

2D	two-dimensional
3D	three-dimensional
AI	artificial intelligence
AU	action unit (see FACS)
CASA	computers are social actors paradigm
CAVE	cave automatic virtual environment
CMC	computer-mediated communication
DSM-IV	*Diagnostic and Statistical Manual of Mental Disorders*, 4th edition
ECG	electrocardiography
EDP	extended desktop platform
EEA	environment of evolutionary adaptedness
EMG	electromyography
FACS	facial action coding system
FNE	Fear of Negative Evaluation Scale
FTF/FtF	face-to-face
FTFC	face-to-face communication
GAQ	Geneva Appraisal Questionnaire
HCI	human–computer interaction
HMD	head-mounted display
HNF	Heinz-Nixdorf-MuseumForum
H.320	technical specification for videoconferencing services
IADS	international affective digitized sounds
IAW	integrated avatar workbench
ICQ	"I seek you" (instant messaging software)
IP	Internet Protocol
LifeFX	commercial software aimed at providing facial expressions to internet messages
MAX	Multimodal Assembly Expert (embodied conversational agent developed at the University of Bielefeld)
MNs	mirror neurons
MUD	multiuser dungeon
NVB	nonverbal behavior

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PA   pleasure and arousal
PAD   pleasure, arousal, and dominance
PANAS   Positive and Negative Affect Schedule
PD   panic attack disorder
RB2   Reality Built for Two
REA   Real Estate Agent (embodied conversational agent
          developed at MIT)
SIDE   social identity model of deindividuation effects
SMS   short message service
TCP-IP   Transmission Control Protocol-Internet Protocol
TIC   time-independent collaboration (asynchronous videocon-
          ferencing system)
VCE   virtual communication environment
VCR   videocassette recorder
VMC   video-mediated communication
VR   virtual reality
VVC   virtual videoconference