

The Body In Communication

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ABSTRACT

HCI is slowly realizing that being aware of, and understanding the implications of, the body in communication and its extension through tools and technology is important to a wide range of research fields from virtual characters to co-located interaction around technology. Finding ways to illuminate the often subtle contributions of the body to communication in an HCI context can be challenging. Most of the literature is based in social science and unknown to an HCI audience. Perhaps more difficult is that many people are not aware of how their own body plays a role in communication and are therefore less likely to have good intuitions about when and how to explore it in a technologically-enhanced environment. Our workshop addresses these two issues before asking participants to apply this knowledge to their own domain of expertise.

General Terms

Performance, Design, Experimentation, Human Factors.

Keywords

Gesture, Posture, Body Language, Kinesics, Kinaesthetics, Performance, Extension, Skill, Emotion, multi-modal, collaborative technology.

1. TOPICS

The workshop addresses various topics on the body and communication that covers the range of the face, gestures, and the full body. These include topics on multi-modal interaction, non-verbal communication, posture and orientation, movement and synchrony (body language). Such aspects of bodily engagement engage human emotion, afford us collaborative possibilities, and allow us to develop experiential knowledge. How? Why? What are the relations between spatial and temporal aspects of the body in communication? How does the body influence joint attention and grounding? The workshop also covers topics on the extension of the body, such as physical prosthetics, sensory extensions (notably in interactive arts, and immersive performance (presence

interfaces), brain signal interfaces.

2. PROCEDURE

We will send out a call, asking participants to submit 2-3 pages that reflect their experiences of the body in interface design and/or use, and raise issues/investigations they consider to be important for developing the field of HCI further. We will ask participants to think both with and beyond the current technologies. The purpose of these submissions is for us to engage participants in the discussion prior to the workshop and provide us with an overview of their current understanding of the body in communication. The workshop is intended to be a practice-based experience, which balances theory and practice, addressing the fundamentals of the body in human engagement and how technological tools can, could or should afford this engagement. There will be no formal presentations by participants during the workshop.

3. THE BODY IN COMMUNICATION

The body plays a distinct and important role in communication. One that is often taken for granted as people are so fluent in its use. The unconscious use of the face, body-orientation, posture, gesture, vocal sounds, movement entrainment and formation all contribute to a person's ability to make sense of a situation and react accordingly. These might be used to gain attention and participate in an interaction, influence the communication tactics of another person, or to collaboratively generate an idea. Such bodily communication can also be extended through tools and technology. A blind person often perceives the world and reacts to it through a prosthetic stick as an extension of herself.

Finding ways to illuminate the often subtle contributions of the body to communication in an HCI context can be challenging. Most of the literature is based in social science and unknown to an HCI audience. Perhaps more difficult is that many people are not aware of how their own body plays a role in communication and are therefore less likely to have good intuitions about when and how to explore it in a technologically-enhanced environment. Our workshop addresses these two issues before asking participants to apply this knowledge to their own domain of expertise.

4. PROGRAMME

The first part of our workshop will take place during the open house evening and will consist of interactive installations that encourage participants to think about communication in different settings. These 'installations' will utilize different spaces and parts of the William Gates Building and ask people to carry out a specified conversation in which some part of the body is inhibited. For example, people will be asked to converse on opposite sides

of a glass door. Although they will not have difficulty hearing or seeing each other, we are sure that participants will find the experience jarring.

The idea behind these installations is to reflect on our engagement and communication with and via interfaces that mediate our bodily cues, and thereby our sense-making.

The second part of our workshop, a half day event, would be suitable to the Saturday afternoon following the main conference. We will begin by addressing pertinent research on the body in communication from social and cognitive science. We will use this context to discuss participants' experiences with the 'installation' activities and then draw the conversation to how this might affect their current research areas. The last part of the workshop will be case studies of particular technologies or applications. In groups, we will ask the participants to pinpoint the implications of our previous discussion and how one might study the role of the body in that application design and/or use.

One possible outcome of the workshop would be an invitation to participants to submit collaboratively produced papers for a special issue of a Journal, that arise from the experience of the workshop.

5. BACKGROUNDS OF PARTICIPANTS

The workshop is relevant to a wide range of HCI people, including those working with virtual characters and environments, mobile technologies, co-located technologies, affective technologies, and tangible or embedded technologies. We hope to gain a wide range of people in order to make the discussion as lively as possible. We would ideally have 15 people but could accommodate 20.

5.1 Organisers

Cecily Morrison research is on how the presence of technology disrupts or enhances interpersonal interaction. Her research focuses on how we design and evaluate collaborative technologies for small, co-located groups. Her background includes dance performance, and she is developing a coding system for spatial

orientation of the body and tools/technologies for affording communicative possibilities. Her case studies include the uses of technologies as part of intensive care practices in the hospital setting, and the physicality of body interfaces.

Satinder Gill's background is in human-centred systems, and her research is on the pragmatics of gesture and multimodal interaction, focusing on prosody, kinesics, and kinaesthetics. She has developed a coding system of the temporal rhythms of body and speech synchrony for affording sense-making and tacit knowledge in communication. Her work draws on understanding the relations between music, gesture/body, and language. Her interest in the body interface is set against her experiences of technologies ranging from knowledge based systems, audio-visual communications technologies, multi-modal interactive systems, interactive workspaces, immersive responsive media spaces.

Shazia Afzal's background is in Computer Science and she is conducting research on the potential of facial expression analysis for emotion recognition and inference of user experience in computer-assisted learning environments. She also studies social responses to affect-sensitive 'intelligent' machines and how they influence subsequent interaction and behaviour.

6. REFERENCES

- [1] Afzal S., Robinson P. 2008 Dispositional Expressivity and HCI, Emotion In HCI, British HCI, Liverpool, Sep, 2008
- [2] Gill, S.P. (2007). Knowledge as Embodied Performance. In Gill, SP (Ed.) *Cognition, Communication and Interaction*. Springer, London. pp.
- [3] Gill, S.P., Kawamori, M., Katagiri, Y., Shimojima, A. (2000). The Role of Body Moves in Dialogue. In the *International Journal for Language and Communication (RASK)*. Vol.12, April, 89-114.
- [4] Morrison, C., and Blackwell, A. 2007 Body Paint: A Physical Interface. Proceedings of the Second Workshop on Physicality 2007, 2-3 September, Lancaster University, UK