

Shadow systems: Communicability support technology to promote co-creation

In a co-creation, many people of varied backgrounds and values are required to act in complement and simultaneously, like players in an improvised drama. ("Ba" and Co-creation. 2000)



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MESSAGE

"Telecommunications requires "inseparable subject-object" media to express the existence of others to self-organize personal spaces, as described in proxemics by Edward Hall. We realize this by a shadow. "

CAREER

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RESEARCH KEYWORDS

- "Ba" and co-creation
- Co-existing communication systems
- Embodiment, mind, and communicability

AWARDS

- 1986 | MOËT HENNESSY, Best Scientist Award
- 2004 | IPSJ Symposium Interaction 2004, Best Paper Award
- 2006 | Human Interface Society, Best Paper Award

BOOKS / PAPERS

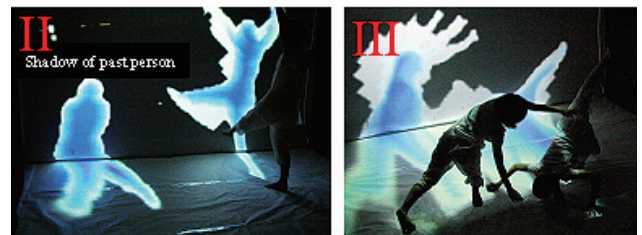
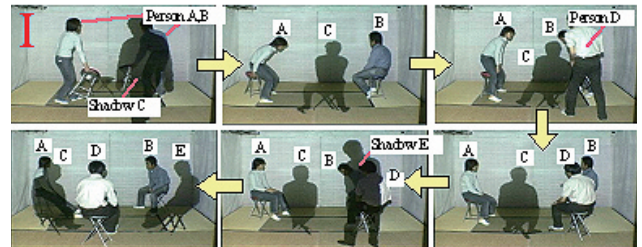
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- Miwa Y., Ishibiki C.; "Shadow Communication: System for embodied interaction with remote partners"; Proceeding of CSCW 2004, pp.467-476, 2004.11

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The stage on which each player positions his existence is called a "Ba." For example, in a soccer match, soccer players are drama players, the soccer field on which the players play is "Ba," and its entire situation constitutes the context of the "Ba." Hence, co-creation on the soccer field can be realized when each player continues their soccer play in a manner corresponding to the ever-changing context of the "Ba."

In contrast, the current communication system does not account for the context of the "Ba," since its design is based on Shannon's theory of communication. As a result, it is generally very hard for people in geographically remote locations to co-share a context for developing a co-creative drama. To solve this problem, we developed a communication system in which we employ a body shadow as one's own agent. When a plurality of system is present at various remote places, these systems enable a remote person's shadow to be projected on the screen corresponding to his/her standing position.



I; Generation of spatial relationship "Maai" among groups
II; An example of archive of "Ba" (Reproduction of the past actual field by shadow)
III; An example of supporting system for image creation (shadow expression using residual image)

As a result, we find that a human has the capacity to sense the existence of another's body shadow, just as with a real person in the same space. We also found that the shadow's implicit function creates a feeling of co-existence with remote individuals, allowing the co-creation of the context of the "Ba." Based on these findings, in dramatic contrast to conventional videoconferencing, remote participants can integrate a common actual field ("Ba") where he or she can be positioned. This allows remote groups of people to co-exist as if present on the same stage ("Ba"). 3D bodily performances between remote groups can be realized in complement and simultaneously (see Figure I). Furthermore, shadows (past actual fields) can be recorded and its recorded shadows re-displayed. These will allow current people to encounter past people beyond time and space through the shadow and to co-share mutual experiences with past people. (see Figure II).

On the other hand, by generating an ontological gap in a temporal and spatial relationship between the shadow and a body (see Figure III), our recent study indicates that we can elicit a sense of body expansion and awareness. Since such awareness can be used to integrate each individual's image to promote a communicability, the recent findings suggest a promising system as novel support for co-creative expression.