

Evoking an Affection for Communication Partner by a Robotic Communication Medium

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Abstract—Robotic communication media can be an avatar of communication partner. Therefore, the operative motions for the media may alter the feeling towards the communication partner. In recent studies with “Hugvie”, which is a human-shaped medium for talking in a hugging state, we have found that a favorable feeling towards conversation partner is evoked in Hugvie users when they speak to the partner. In this study, we will investigate how the user-media interaction influences the feeling of the user towards his communication partner.

Index Terms—Tele-operated robot, Robotic media, Sense of presence, Hugging, Affection.

I. RESEARCH MOTIVATION

When we use a tele-operated humanoid robot as a communication medium, we can get a feeling that the robot is the person we are talking as if we have a face-to-face conversation with a real person. The important trait of robotic media is that a user can virtually have physical interaction with other person. Focusing on this effect, it is possible to induce a strong sense of presence through a simpler device.

We then have developed Hugvie, a “hug pillow” type of communication media for talking in a hugging state (Fig.1.) Its body is mainly a cushion that is formed in the shape of simplified human to convey a sense of human existence. While hugging it, users speak to people in far locations through their cellphones inserted into a pocket in its head.

In recent studies with Hugvie, we have found that a favorable feeling towards a communication partner is evoked in the user who is talking with his/her partner while hugging Hugvie, even though the partner is stranger to him/her [1]. Robotic media is a communication tool but can be also an avatar of communication partner; therefore, the operative motions for the media may be confused with the behaviors towards the partner. A hug is a behavior to show affection; therefore, we infer that the person hugging Hugvie mistakenly thinks he/she has a liking for the partner since he/she has a sense of hugging the partner. In other words, his/her cause of action for the media (hold Hugvie to use it) is misattributed to different cause (to show affection to the partner.) The misattribution of arousal says that when a person is emotionally aroused by something, the cause of arousal can be misattributed to something else



Fig. 1. “Human presence” transfer media “Hugvie™.”

that is also emotionally arousing (it is known as “Love on a Suspension Bridge”[2].) In Hugvie case, it can be explained as the misattribution of behavior. In this study, we will investigate how the user-media interaction influences the feeling of user towards his communication partner.

II. RELATED WORKS

Some studies have dealt with a hug in tele-communication; however, most of them have focused on development of devices to allow a person to feel a hug from another person in a remote place [3]. These devices aim at effects of being hugged by the remote person but not hugging the remote person. Some other studies have tried to control an affective feeling by using artificial stimuli. For example, Nishimura et al. [4] have shown that a preference towards female photos can be enhanced by a heightened heartbeat controlled by vibration stimulus. Differing from these studies, we focus on evoking an affective feeling by user-robotic media interaction.

III. SUMMARY AND FUTURE WORKS

Hugvie is a robotic communication medium that is effective for intimate communication despite its simple feature. We will study how the user-robotic media interaction alters the feeling of the user. Hugvie can be an effective communication media to support intimate interaction since robotic media can facilitate close interaction (e.g, touch and hug).

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