Chapter 7
Populist Human–Computer Interface:
Kissenger

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ABSTRACT

With advances in HCI and AI, and increasing prevalence of commercial social robots and chatbots, humans are communicating with computer interfaces for various applications in a wide range of settings. Kissenger is designed to bring HCI to the populist masses. In order to investigate the role of robotic kissing using the Kissenger device in HCI, the authors conducted a modified version of the imitation game described by Alan Turing by including the use of the kissing machine. Results show that robotic kissing has no effect on the winning rates of the male and female players during human-human communication, but it increases the winning rate of the female player when a chatbot is involved in the game.

INTRODUCTION

This paper examines the role of intimate interpersonal touch in the context of human computer interaction, and how a kissing machine, Kissenger, could bring HCI to the populist masses. Modern communication networks offer a seemingly limitless amount of information exchange in the forms of text, visual and audio data. However such information is often insufficient for conveying emotions that are expressed through non-verbal behaviour communicated during physical interaction. Interpersonal touch such as kissing and hugging is believed to be crucial in establishing bonds

and empathy between humans (Hughes et al., 2007; Light et al., 2005,). Even in human-robot interaction, with advances in realistic humanoid robots, artificial intelligence, and the increasing prevalence of social robots and chatbots, physical touch is becoming a necessary communication channel to consider. Communication between humans and machines has become more 'social' than 'functional'. The increasing personalisation of robots means that people seek to interact with machines not only for information exchange or task-specific services, but also as a form of socialisation and means of emotional connection very much similar to communication among humans (Dautenhahn, 2007).

When we explore the dimensions of modern digital communication, be it between humans and humans or humans and machines, intimate touch emerges as the missing element that people often desire in remote relationships. In order to fill in this gap, we built a kissing machine that aims to extend the sensory channels in remote digital communication to include intimate haptic interaction. The kissing machine, Kissenger, can transmit haptic sensations of lip kissing over the Internet when people chat on their mobile phones with the device attached. The machine has a lip-like surface that covers an array of force sensors, which measure lip pressure during the transmission of a kiss. One linear actuator is attached to each force sensor to reproduce force feedback on lips.

BACKGROUND

Kissing is a universal gesture practised in almost every culture. Whether it is a kiss on the cheek, a peck on the lips or a passionate French kiss, kissing is the most direct expression of affection and acceptance in both sexual and non-sexual human relationships. The types and functions of kissing vary from culture to culture. In many Western cultures, people kiss as a form of greeting or farewell whereas many oriental cultures (China, Japan etc.) do not seem to practice this custom (Tian, 2010). However, kissing between family members as a way of bonding and affection occurs in most cultures although the frequency varies with the social complexity of the culture (Jankowiak et al., 2015). Kissing is not just exclusive to human interactions. Many people kiss their pets and even inanimate objects such as dolls to express their attachment and affection. Some non-human primates such as chimpanzees and bonobos also exhibit the behaviour of kissing (De Waal, 2000).

Kissing is an act of physical touch, which is a visceral need for both human and non-human primates (Harlow, 1958). Families and friends engage in kissing as an intimate way to express emotions and strengthen bonds. The lips are an extremely sensitive and sensual part of our body packed with nerve endings. Women's lips are often one of their erogenous zones and considered as a symbol of sexuality

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