Banana Kiss: A Participatory Interactive Installation to Enhance Intimacy with Kiss Interaction

Sanghyun Yoo
School of Arts, Media and Engineering
Arizona State University
Tempe, AZ 85287 USA
cooperyoo@asu.edu

Varsha Iyengar
School of Arts, Media and Engineering
Arizona State University
Tempe, AZ 85287 USA
varsha.iyengar@asu.edu

Abstract

Kissing has been a vital part of human communication since the beginning of time. *Banana Kiss* is a participatory interactive installation that explores how to enhance intimacy using kissing behavior. After presenting the motivation for using kissing as a tool for human-computer interaction, we describe the design process that led to an intuitive interactive system for naive users in public spaces. The installation further explores the role of participation and intimacy in participatory installations.

Figure 1. Footage of *Banana Kiss*

Author Keywords

Kiss; human gesture; embodiment; nature based interface; interactive system; novel interaction;

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): User-centered design.

Introduction

Kissing is one of the most important human communication tool used to express intimacy and love. It is a natural behavior between close relationships such as friends or romantic and marital lovers. Moreover, kissing is understood to people of all ages, cultures, and backgrounds. However, the behavior is a more confidential and private act in public space. We focused on these unique features of our everyday

behavior. How can we use kissing in participatory media installations?

We hypothesized that using this natural human interaction method for a participatory interactive installation would support to relate a computational system and a large group of people in public spaces. Our main goal of presenting our early piece *Banana Kiss* is to develop the use of kissing and interaction techniques as a medium for encounter and conversation among people in public space.

Related Work

Recent developments in the field of novel interactions explore intimate relationships between person-person and person-machine [1]. *Intimate Door Lock* [2] investigates intimate relationships in a man-machine interaction by installing a mirror as a door lock that needs to be kissed in order to open the door. The study confirms a positive and delightful experience in aiming to improve the self-esteem of a person. *Banana Kiss*, however, celebrates intimacy in various person-person relationships in a public setting that induces a delightful experience for the participants as well as the onlookers. This notion comes from the well-known social game in major sports events, *Kiss Cam*, which is intended as a light-hearted diversion to the main event such as sports. A kiss is traditionally rewarded by cheers, whilst a refusal to kiss is booed [3]. *Banana Kiss* is installed in a similar way, though tweaked for particular research goals.

There have been several projects and prototypes that aim to aid and increase intimacy in relationships using a myriad of devices. Projects like the *Kissenger* [4] aim to fill a void between long distant relationships by

creating an interactive device that provides a physical interface for transmitting a kiss between two remotely connected people. Hemmert et. al., [5] rightly uses the notion of direct contact, rather than the symbolic notion of physical interaction. Their paper describes a means of communication where kissing is transmittable, making telecommunication more tangible for the users. IDEO's *Kiss Communicator* [6] uses breath to metaphorically signify a kiss that maps to LED light responses. Projects such as the *Tongue Music* [7], however, focus on expanding affection between people. Drawing from the above projects, we aim to reveal and celebrate the different relationships among people. Banana Kiss is designed to be used in a social context between couples, parent and child as well as participants and the crowd.

Design of Banana Kiss

Intuitive interaction for public space
Designing interfaces that are intuitive and user-centered are one of the most crucial aspects when it comes to digital interventions in public spaces. [8] By their nature, public spaces present challenges regarding crowd management and installation for people of all ages and abilities. To satisfy big portion of participants, the system needs to target users with less understanding of the technology. Methods to reduce the sense of alienation for the users are one of the key factors of success.

Novel interaction without instructions
As kissing is not a common way of interacting with a computational system, participants may be confused if they need to go multiple steps in the system. In Banana Kiss, we tried to make the experience as simple and intuitive as possible. We used a simplicity design so
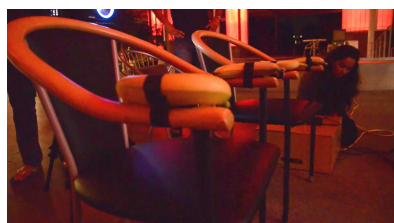
Figure 2. Early set up of *Banana Kiss*

Figure 3. Four bananas attached to armrests

that the users focus on the core experience that is controlling the computational system with an unexpected but natural behavior.

Similar to a common photo booth set up (See Figure 2), basic setup of Banana Kiss is two chairs in front of a camera, two lightings, and a projection screen. Participants easily understood that they are supposed to sit on the chairs and face the camera and projection screen. The projection screen is designed to look similar to a Kiss Cam screen layout design in major sports events. The screen shows the previous image of the last participants, which allows participants to intuitively understand what they are expected to do. Just hold the banana, and Kiss!

In our system, both participants need to keep touch a conductor material connected to the circuit board when they kiss each other. The second challenge of our design is to induce participants to kiss each other but not touch each other with other parts of the skin. We tested several different objects such as 3D printed hands, bare wires covering the chair, plastic toy figures, stress balls, and fruits to find the best object that leads participants to touch. Our final decision was to use a banana that is a good conductor material and bring participant's interest by placing an unexpected object on a familiar photo booth setup. Bananas were placed on top of the armrest where people usually place their hands (See Figure 3).

Direct feedback to both participants and spectators
The piece uses projection screen and photography lighting kits to bring immediate attention to both participants and nearby spectators. When participants kiss, the lighting kits flashes and the DSLR camera

takes a picture of the participants. After a moment, the projection screen changes its display to participant's picture of kissing. The reason we used lighting kits is not only for a better quality picture but for the direct feedback understood to various people around the installation including the participants. Because of this familiar but effective event, the piece could gather more passerby to become spectators and become active participants. Similar with Kiss Cam in massive sports events, the installation is used as medium of expression and communication between people around the piece.

Implementation
The detailed implementation as shown in Figure 4 is as follows. We used the *Makey Makey* toolkit to connect the circuit between the two chairs with bananas on the armrest and a computer. *Makey Makey* is an electronic invention kit that uses closed loop electrical signals to send the computer keyboard stroke. [9] It allows users to connect ordinary, everyday objects to computational programs. Once the participants kiss, the circuit is complete inducing a trigger.

The computer then triggers image capture on the Nikon DSLR camera with the *Sofortbild* application that additionally saves all the captured application. Finally, the images are retrieved in sequence and mapped onto the screen via a projector through a custom program written in Max/MSP. In a nutshell, the closed loop is formed of the *Makey Makey*, the kiss and the picture taken by the camera. The image of the kiss on the projector acts as the feedback loop of experience for the participants.
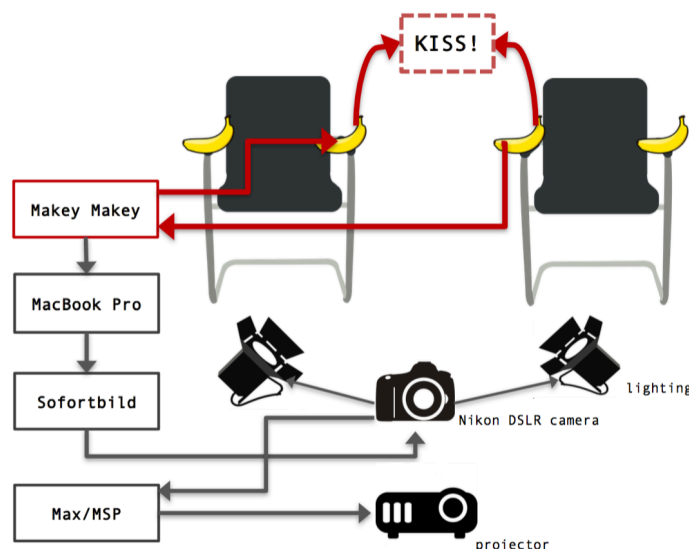
Figure 4. System diagram of *Banana Kiss*

Conclusion

In this paper, we presented the first iteration of the participatory installation Banana Kiss. We presented a novel interaction that allows users to make a kiss to interact both with the installation and with others.

Our ongoing research is to refine our approach to developing participatory interactive experiences using kiss and other natural human communications to enhance enjoyment, excitement, and intimacy between people.

Acknowledgements

The authors thank all the audience participated in our experience. And we would like to thank David Tinapple, Ed Finn, Shahab Sagheb, Pand School of Arts, Media and Engineering faculties and colleagues, for their support on the project.

References

[1]   Zhang, Emma Yann, and Adrian David Cheok. "Forming Intimate Human-Robot Relationships Through A Kissing Machine." *Proceedings of the Fourth International Conference on Human Agent Interaction.* ACM, 2016.

[2]   Roy, Miriam, Fabian Hemmert, and Reto Wettach. "Living interfaces: the intimate door lock." *Proceedings of the 3rd International Conference on Tangible and Embedded Interaction.* ACM, 2009

[3]   Kiss cam. In *Wikipedia*. Retrieved November 10, 2016 from https://en.wikipedia.org/wiki/Kiss_cam

[4]   Samani, Hooman Aghaebrahimi, et al. "Kissenger: design of a kiss transmission device." *Proceedings of the Designing Interactive Systems Conference.* ACM, 2012.

[5]   Hemmert, Fabian, et al. "Intimate mobiles: grasping, kissing and whispering as a means of telecommunication in mobile phones." *Proceedings of the 13th International Conference on Human Computer Interaction with Mobile Devices and Services.* ACM, 2011.

[6]   Buchenau, Marion and Fulton Suri, Jane: *Experience Prototyping*; IDEO

[7]   Nam, Hye Yeon, and Carl DiSalvo. "Tongue music: the sound of a kiss." *CHI'10 Extended Abstracts on Human Factors in Computing Systems.* ACM, 2010.

[8]   Hespanhol, Luke, and Martin Tomitsch. "Strategies for intuitive interaction in public urban spaces." *Interacting with Computers (2015):* iwu051.

[9]   Collective, Beginner'S. Mind, and David Shaw. "Makey Makey: improvising tangible and nature-based user interfaces." *Proceedings of the sixth international conference on tangible, embedded and embodied interaction.* ACM, 2012.

[10] Sofortbild. Tethered Shooting. Retrieved November 10, 2016 from http://www.sofortbildapp.com/