The Meatbook: Tangible and Visceral Interaction

Blind for Review

ABSTRACT
The Meatbook, an interactive art installation, explores the use of a novel tangible interface to provoke a visceral response in the viewer. The Meatbook presents the symbiosis of the mechanical and the organic as it simultaneously juxtaposes the conflicting materiality of these media. Sensors, motors and other mechanics are used to animate the meat, generating movements specifically designed to produce visceral, even cathartic responses from the user. By simultaneously generating revulsion and fascination, the user undergoes an embodied experience in which the alien and the familiar come together in the form of a book.

Author Keywords
Tangible interfaces for artworks, organic-inorganic interfaces

ACM Classification Keywords
H5.2 User Interfaces: Haptic I/O, input devices and strategies, theory and methods.

INTRODUCTION
The Meatbook, an interactive art installation, explores the use of an unconventional tangible interface to provoke a visceral response in the viewer. Through the use of meat as a reactive surface, users are able to interact with an animated piece of flesh. The Meatbook presents the symbiosis of the mechanical and the organic as it simultaneously juxtaposes the conflicting materiality of these media. Sensors, motors and other mechanics are used to animate the meat, generating movements specifically designed to produce visceral, even cathartic responses from the user. The user becomes aware of the re-contextualization of flesh– no longer a source of food or the manifestation of physical being, but as something both alien and familiar: a book. It is in that moment is forced to confront deep philosophical questions about the essential nature of our technology and our bodies. In this moment, revulsion and fascination come together to generate an embodied experience for the user.

In order to fully explore the nature of flesh, the Meatbook was designed to function as a time-based art piece – the decomposing of the meat is an essential process of its existence. As the meat decays, the Meatbook becomes generative art as well as interactive art, changing shape, smell, color, and texture. The continual transformation of the meat also changes the behavior of the mechatronix, affecting the performance of the systems due to changes in the meat's thickness and tensile strength. The very standards by which we evaluate tangible interfaces are questioned as the physical interface transforms itself through time. Not only does the physical texture of the meat affect the user's overall perception of the interface, the decay fundamentally changes the relationship the user has with the book. Through this process, the Meatbook becomes an affective interface that distinctively changes during its lifespan.


Figure 1. User interacting with Meatbook

The environment in which the Meatbook is presented also enhances the interaction. While initially presented on a clean pedestal, the resultant decomposition of the dead meat creates a forensic blueprint on the stand, as residual liquids and rotten bits of meat spread across the surface. Additionally, rather than being a simple stand-alone exhibit, the Meatbook inhabits a deeply immersive environment that responds to each individual users' actions, further enhancing the overall experience.

BACKGROUND
While there has been some recent crossovers between research dealing with computational systems and research working in biotech, almost all of this research has been focused on living matter at a cellular level. Oron Catts and Ionat Zurr discuss this type of "in vitro life" in their paper "*Towards a New Class of Being:The Extended Body*". They describe this "in-vitro"life as "partial life and semi-living entities proliferated [which] are living and growing outside of the organisms from which they originated." [1] Other research involves the construction of models of organic structures from non-organic materials. Adam Brandejs'

"Animatronic Flesh Shoe" combines flesh-like appearance with electronic augmentation. [2]

Figure 2. Animatronic Flesh Shoe

A third category of researchers are involved in the construction of cultural and artistic artifacts using real organic flesh. Willet and Bailey, in their *Bioteknica* project, have approached flesh from two different perspectives constructing "teratomas" from store bought meat and human hair while simultaneously working in a lab with real teratoma cells. [3]
The Meatbook builds on these various projects, utilizing real flesh with a newly created electronic system and mechanization.

THE BOOK

The Meatbook is made from various types of meat sewn together following traditional bookbinding procedures. Unlike paper books, The Meatbook contains four pages that are always open. It sits upon a traditional book pedestal, and users can approach it from any side.

THE INTERACTION

The Meatbook uses sensors to determine the location of the user. It provides feedback based on the proximal distance of the viewer to the book – the book "quivers" as users approach. In addition, the location and numbers of users are measured to elicit various additional movements: sounds, twitching, pulsing, throbbing, stretching and gyrating. These movements are achieved using motors that attach to the underside of the Meatbook and implanted within each page.

IMPLICATIONS

The Meatbook confronts issues that are typically ignored by researches developing tangible interfaces.[4] By working with material that is organic and undergoes a specific degenerative cycle, attention is drawn to the implications of the materiality of technology. In particular, by using matter that was once living, the very nature of what is considered alive is brought to the forefront. In an ironic reversal, the meatbook actually becomes more alive as it rots in several ways. The electronics are programmed to become more alive as the meat rots. Moreover, certain electronics are covered with specially developed material to protect them from the wet flesh, while others strategically are not. Thus, some electronics and mechanics degrade as the book rots and exudes the chemical reactions of decay; this degredation and chemical change result in interesting and unexpected actions that make the MeatBook appear more alive as it rots. Finally, the MeatBook also becomes more literally alive as it attracts a conglomeration of insects and bacteria.

CONCLUSION

Working prototypes were presented to four groups of users (averaging 30-50 each). All presentations resulted in very positive feedback in terms of an artwork. However, the creators were surprised by the numerous queries users had about the interplay of organic material with inorganic technology.

The Meatbook presents the symbiosis of the mechanical and the organic as it simultaneously juxtaposes the conflicting materiality of these media. By forcing a simultaneous confrontation between the nature of technology and the nature of the body the user is made aware of each one's respective limitations. The material of the Meatbook is what we all become in death, yet through technology, the semblance of life can once again be restored. By re-contextualizing the interface in this way, the viewer is presented with numerous dichotomies: life-death, attraction-repulsion, familiar-alien. It is at these intersections that the immersive and embodied experience unfolds.

ACKNOWLEDGMENTS

Feral Computing Laboratory
Bio-V Laboratory

REFERENCES

1. Catts, O. and Zurr. I. "Towards a New Class of Being: The Extended Body." *Intelligent Agent.* June 2002.

2. Brandejs, Adam. *Animatronic Flesh Shoe* [2004 - 2005] *(Moving, twitching, pulsating.)* http://www.brandejs.ca/portfolio5/shoe.php

3. Willet, J. and Bailey, S. "BIOTEKNICA: Soft Experiments from the Laboratory." In *New Constellations: Art , Science, and Society*. Forthcoming, The MITPress, 2006.

4. Gromala, D. *Remediated Flesh: Organic Matter and Visceral Sensations in BioTechnology Research.* In Proceedings of Consciousness Reframed, Plymouth, England. 2006. 21-25.