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# Tea with Crows: Towards Socially Engaging Digital Interaction

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**Figure1. Tea with Crows**  
Motion Interactive Sculpture

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## Abstract

"Tea with Crows" is a motion interactive sculpture composed of a shape-shifting tea table and a kinetic chandelier. It combines visually intriguing aesthetics and multimodal technology such as motion and sound interaction to stimulate audience participation. The sculpture also evokes a wide array of subjective responses, fosters social interaction, and creates meaning-making experiences. The empowering effect of the sculpture opens the possibility to adopt, reinterpret, and de-familiarize digital technology to extend imagination, self-expression and subjective purpose.

## Author Keywords

Art; Aesthetic Interaction; Shape Changing Sculpture; Motion interactive tea table

## ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous

## Introduction

"Tea with Crows" found its inspiration from observing everyday phenomena in which people are trying to connect with others through social networking using smartphones and laptop etc. By concentrating on their personal devices, it seems to build the invisible walls



**Figure3. Tea with Crows**

between peoples in that those physically close to one another are effectively able to ignore human beings in proximity in favor of remote interactions. This ironic isolation is perpetuated in our everyday life and it often prevents an intimate in-person interaction during the family dinner and social meetings. By reflecting on this social behavior, “Tea with Crows” is intending to create an aesthetic interaction which enables opening up of in-person dialogues, breaking the isolation and paying attention to the present moment and people nearby by drawing people together into a shared activity. Through the life-like kinetic motion, and the sound embedded in tea table and chandelier, the everyday object become an interactive medium that promotes experiential aesthetics in unexpected way.

### **Meaning making by dual-functionality**

“Tea with Crows” introduces an innovative design concept that plays a transformational role in this shape changing sculpture. “Tea with Crows” accentuates a dual function by creating a practical use dependent upon audience participation in the interactive system. If the audience does not engage with the assemblage, the piece remains to be a static white swan shape as a stand-alone sculpture, like a cluster of folded bird’ wings, however the wings spread opening widely in three directions and create a flat platform when a viewer approaches. Once activated by proximity, the sculpture transformation begins presenting a new possibility of use and reveals that it serves as a tea table containing three cups and dishes. [figure3] These instantly invite further interactivity and activate the crows on the chandelier. Ishii stated, functionality of the shape-changing interface can be understood by exploring the correlation between a transformable structure and the object’s use of gestural of positional

controls: “making objects physically adaptable to their function or context. No longer does form follow function, form becomes function” [1].

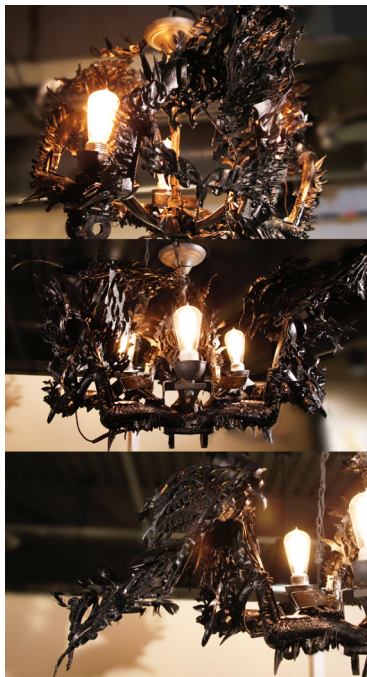


**Figure2. Tea with Crows**

Moreover, the dual form and functionality creates for the user’s a new position where the audience reinterpret and discover the purpose of the design in a subjective manner, rather than accept it as a background in a passive position. Through this unexpected interaction, the audience has an opportunity to de-familiarize the meaning of the digital object and catalyze how to use interactivity by igniting the dynamic shape and motion of sculpture. [figure2]

In a similar vein, Coelho’s “Speak Cup” uses topology changes as a form of input where users activated shape changes can reveal different metaphors and trigger related function.”[3] Kwastek also states, “Digital technology fundamentally alters the conditions in which





**Figure5. Tea with Crows,**  
Interactive Chandelier

**Materials:** 3D printed plastic, wood, metal, feather, Arduino, motion sensor, magnetic sensors, servo motors, light bulb etc.



**Figure4. Tea with Crows,** Shape Changing Interactive Tea Table

sensory perception takes place. Interactive media art reflects not only digital technology's functionality and symbolism, but also the ways in which we deal with such technology and our (self-) perceptions when engaging with it" [2]

#### **Emotional stimulation by life-like interaction**

The upper sculpture is then activated by the interaction with the lower one, thus drawing the audiences' attention upward after an initial episode of wonder at the table. Three black birds that are latched onto the

chandelier begin playful dancing motions [Figure 5]. When the audience interacts with all three cups at the same time, they hear happy laughing sounds from the birds. The magnetic sensors are embedded into the cup and dishes of the tabletop, and it triggers servo motors which is connected to the crows on the chandelier. By picking up different cups, the audiences can see the variable birds dancing motions. The Three bird sculptures simulate various life-like movements of crows. When the audience are leaving after a tea-time, the tea table goes back to the swan shape sculpture,



Figure6, Group Interaction1



Figure7, Group Interaction2

and the birds blend into the chandelier. It waits for another tea party. [5] As Petersen et. al. claimed "Aesthetic interaction promotes curiosity, engagement and imagination in the exploration of an interactive system" [4], "Tea with Crows" is aiming for stimulate emotional response such as intimacy, surprise, curiosity, excitement or grotesqueness from its audiences through the various shapes, motion and sound of the bird's characters. While encountering the shared moments that visually and tactically can be experienced, the bodily interaction aims to connect people to each other through the sharing of their emotional response from the digital object. This video demonstrates how the real time interaction works between the table, chandelier, and the audience member.

<https://vimeo.com/184890191>

### Connecting people to each other

I observed how the kinetic motion of sculpture increased the audience's engagement and participation in the interaction while the pieces were on display at three exhibitions. (The University Art Gallery, Indiana University, South Bend, IN, September 19 - October 29, 2016, KumBS Art Center, Seoul, South Korea, December 12 - 24, 2016, and The University Art Gallery, Central Michigan University, Pleasant Mountain, MI, January 13 - February 11, 2017) The aesthetic experience of "Tea with Crows" inspires a range of emotional responses from the visitors during the exhibitions. The audiences described their experiences and emotions variously as "surprised, scared, excited, fearful, fun, intimated, mysterious, intrigued, playful and cheerful." [figure6] Importantly, I witness that the audience members are able to share their experience with other audiences nearby by describing how they felt, what interactions they found, how they explored

the shape-changing interface, and how they triggered the kinetic motions. Frequently they encouraged others to "try it out." Visitors also responded in ways that could not be anticipated, such as two women clicked the teacups together in a toast. [Figure7]

This work was born of a design inspiration and intention while addressing the sensory experience through the digital objects in everyday life. Through the life-like kinetic motion and sound embedded in tea table and chandelier, the everyday object become an interactive medium that promotes experiential aesthetics in unexpected ways. Actively engaging with a meaning-making process, where the viewer can create a variable form and function, deconstructs the traditional vision of art. "Tea with Crows" acts as a catalyst for bringing people together and sharing their experiences with one another.

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