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# Learning to play together: Crossing boundaries in art and design

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**Abstract**

In this paper we discuss the relationship between new media art practice and human computer interaction design by considering activities of collaboration and boundary crossing in the design and use of Organum, an interactive art installation and collaborative multiplayer, voice-driven game.

**Keywords**

Interaction design, Art, Collaboration, Methodology

**ACM Classification Keywords**

H.5.1. Information interfaces and presentation (e.g., HCI): Multimedia Information Systems. J.5 [Computer Applications]: Arts and Humanities – Arts, Fine and Performing, Fine Arts, Music.

**Introduction**

Over the past two years, an interdisciplinary group has been developing Organum, a work of new media art and a multiplayer, collaborative, voice-driven game. While we have created Organum to facilitate creative, collaborative, and social experiences between friends and strangers, its development required us to cross disciplinary boundaries and engage with one another in new ways. Here, we first introduce Organum and briefly discuss how it attempts to push various boundaries of

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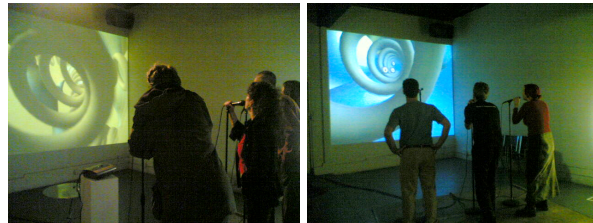
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individual and group engagement through the use of a particular interaction mode –the use of the voice with others in public space. Then, we shift away from the work itself and discuss lessons that we have learned together and from each other by combining methods from social science, user-centered design, and art practice. Similar to the players in Organum, we also have had to cross boundaries and create links between us, finding commonalities between artistic and design practices that have seemed, at times, in opposition.

### **Organum**

Organum is a collaborative, multiplayer, voice-driven game, in which three (or more) players sing together to control their groups' movement through a virtual organ. One microphone provides the thrust to move forward, while two sets of two microphones control left/right and up/down direction. The world is projected in front of the group on a large screen, and we have designed the game to be played in the presence of an audience in a public space. As of this writing, Organum has appeared in a variety of venues, ranging from art galleries, to academic conferences, and even one public music festival. See Figure 1.



**Figure 1:** People playing Organum at New Langton Arts, San Francisco, CA April 19-23, 2005

Organum is intended to be an exploration into the relationship and interaction between the individuals and groups in networked world, in which people and machines are connected on a number of social and technical dimensions. Requiring players to use their voice asks them to engage with a technical system, each other, and an audience in ways that they may not be accustomed to, breaking down what is normal practice for a public space. Requiring collaboration with a team, as opposed to playing on one's own or against others, demands that any one player be simultaneously aware of his or her presence as an individual and aware of his or her relationship with others as a group [2]. The game and experience are as much about the relationship between people in the space as it is about accomplishing the goals of working through game levels.

### **Discovering and creating commonalities**

While Organum is intended as a work of new media art, it has taken a multi-disciplinary team and set of methods to create it. Like Organum's players we have had to engage with each other in new ways in order to succeed. When we started we may have seen each other and ourselves as coming from separate disciplines –art practice, game design, interface design, social science, engineering– but our experiences have led us to reconsider how we now perceive ourselves and the relationship between our various methods of research.

One team member wanted to bring methods from user-centered design to the creative process, having concerns about how to design the work so that people would actually engage with Organum and each other in new ways. He conducted interviews with art-goers of

various ages. These open-ended, qualitative interviews covered previous experiences with “interactive art,” reactions to the idea of singing in public, and history of playing video games. The artist on the team was skeptical of both the rationale for doing the interviews and their potential value to the project, seeing them as “marketing.” But after attending a few of the interviews, he found himself learning from them and developing an empathetic bond and a dimension to his relationship with the “audience” of his artwork that he had not experienced before.

When the same team member began to explore notions of “iterative design” and “user testing” in the practice of creating interactive artwork, he assumed that this would also be a challenge to traditional evaluation methods in art practice [1]. An interview with one successful interactive artist, who had experience within the HCI field, revealed objections to notions of rapid prototyping which could be equated with “working faster than you think.” He added, “Why not do one thing well instead of twenty-five crappy things?” Nevertheless, even this artist later explained that he always puts exhibits out, carefully observes how people interact with it, and then iterates. Interviews with other artists revealed that they also create prototypes of exhibits and then refine them, sometimes on the exhibit floor, in reaction to their observations of participant interactions with the piece.

While working on Organum, we realized that even the artist on the project also had an inclination to prototype, sometimes rapidly. However, he did not use the terminology from user-centered design. Rather he used “play-testing,” a term from game design practice [4]. His tendency was to create and iterate based on

his read of people’s reactions. His process of in-studio prototyping and iterations works to achieve the same objectives as “paper prototyping” as described by Rettig [3].

Therefore, it would be wrong to think that artists do not already prototype and iterate. What the interface designer and engineer working on Organum came to appreciate from the artist and subsequent exhibitions of the game is that prototyping and evaluating in the context of use –in the gallery, in the museum, at the festival– is critical to understanding whether or not the goals of the team are being met and discovering unanticipated uses of the work. Further research into the practice of art may reveal a long-established practice that falls in line with Lucy Suchman’s [5] call to bring “developing objects out into the environments of their intended use.” While the interface designer and engineers on the team continue to have a healthy respect for a laboratory study that would reveal flaws in the interaction [e.g. 1], we believe that there may be more appropriate ways to evaluate the interaction design aspects of the work, such as a blend between wizard-of-oz prototyping and careful observation and analysis borrowing from ethnographic practice.

With the interviews with art-goers we created a new common understanding of the potential for this type of method and the value of empathy driven by qualitative data from people. The discovery that we all prototyped and iterated, but came at it from different angles, removed an illusory difference between us. But it may have been our decision learn a new production medium, the Max programming environment ([www.cycling74.com/products/maxmsp](http://www.cycling74.com/products/maxmsp)), that has enabled Organum to be successful.

Typically on a project such as this one, the developer would have started out with abstractions and data models. However, the artist's starting point was often a visualization, such as an animation or drawing. While this resonates with principles of user-centered design, where a designer would work with a drawing or a wire-frame to drive the requirements, there are also differences. Here, the artist's visualizations were often used to communicate a look, a feeling, and an aesthetic experience rather than an exact vision of the interface.

The differences in these starting points made working in Java quite difficult and led to considerable tension and frustration. While Java made it easy for the developer to organize the development challenge, it proved inaccessible to the artist, and made it difficult for the team to communicate. The developer's time and expertise was a bottleneck to iteration.

Switching to Max allowed the artist to prototype a "vision" rapidly and the developer to work with the artist on iterating from the vision. In addition it also established a challenge for all of us at the same time. None of us had expertise with this medium; we were all learning and discovering together. Our switch to a new technical platform helped us create a new technical language for collaboration that evolved into a deep bonding experience for the team.

As we continue our work on Organum (as of this writing we are creating a new mobile version that will lead to new artistic, design, and technical challenges) we realize that rather than continue to see ourselves as representatives from different disciplines –the artist, the interface designer, the engineer– we have come to appreciate that these are roles that fall on a spectrum.

Code is not the proprietary domain of the developer. Art is not the proprietary domain of the artist. Each of us is an artist, a designer, and an engineer. The types of novel experiences players have had with Organum thus far are in many ways direct result of our recognition of these roles in us and in each other. As we have tried to demonstrate with this work, the key to creative engagement, both for us and for Organum's players, is in the breaking down of barriers that may not exist, overcoming inhibitions that are very real, and the creation of commonalities where none may have existed before.

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