
Towards An Integrated Design Process For Improvisational And Performative Interactive Environments

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Abstract

Designing interactive environments for improvisational performances requires a different way of thinking about traditional concepts of collaborative design. It requires establishing a dialogue between stakeholders that come from different disciplines and with no common languages to communicate needs and problems. This paper discusses the issues related to the communication between the designers and performances, and discusses personal accounts of such experiences, and the proposed way to deal with such issues as implemented in the Topological Media Lab at Concordia University.

Author Keywords

Integrated design process, improvisation, improvisation, Human centered design.

ACM Classification Keywords

H.4.1: Improv

One of the ongoing projects of the Topological Media Lab at Concordia University is about employing physically-spatialized electronic media (usually, the “theatrical technologies” of video, sound and lighting) to create physical environments that are conducive to improvisation. These environments are improvisational in a dual sense. Firstly, they can be improvised within, as a context for activity. In this sense, “improvisation” is understood to encompass the performative practices traditionally implied by the term (e.g. dance, music, theatre) but also to include the spontaneous activities of everyday life - talking, resting, eating, walking through and around a space, etc. Secondly, these environments can be improvised with, or played like instruments, insofar as the media software used to color the environments can be parameterized in real-time.

These two types of improvisation (physical action and media control) divide participants into two different physical dispositions. Those carrying out the physical improvisation occupy the space into which the media are projected, while those working with the software are usually found behind a bank of computers located outside of the “mediated” space. Similarly, there is a division in mental dispositions: Those improvising within the environment generally focus their attention on the other people in the space or the projected media, while those controlling the media tend to be focused on their computer terminals. Physically, the division tends to manifest as a wall of computer monitors, with the media people sitting facing the screens and the physical improvisers situated on the other side.

This scenario involves a hierarchical differentiation of the improvisers in terms of their ability to modify each other’s actions and experiences. The people controlling the media, acting either in response to the actions of their fellow improvisers or unilaterally, are able to modulate the sound and light in the space that the physical improvisers occupy. The latter may respond to the changing media through physical actions, but these actions do not affect the immediate physical environment of the media controllers, whose terminals, as noted, are situated outside the mediated space.

One of the problems posed by this hierarchical structure is that it makes it easy for the media controllers to neglect one of the basic imperatives of collective improvisation, which is to attend to the activity of co-improvisers and respond in ways that complement this activity. At best, the media controllers may pay attention to the other media people as well as the people within the mediated space and play their instruments (i.e. modulate the video, sound and lighting control systems) accordingly. Because of the physical and mental attention required by screen, keyboard and mouse-based computer interaction, however, it is easy for the media operators to focus more on fiddling with the software than on interacting with other human beings.



Figure 1. A typical set up for the wall of screens separating the designers from the performers. Designing For Improvisation workshop – The Topological Media Lab, 2012.

Similar observations were reported in the account of a musician who participated in the Native Alien project in the Matralab at Concordia University. His initial approach to performing with software didn't feel much like improvisation, rather a musical game where the performer's initial relationship with the system was reactionary, and where software was a tool that was intended to enhance his performance.

The relationship with the media designer took a different turn when the performer realized that they were improvising with him too, and that the data he was receiving was not all computationally generated, rather parameterized and sometimes manually manipulated by the media designers who participated in

the performance. His account of the experience mentions the initial disconnect between himself and the media designers, and attributed that disconnect to the alienating wall of computer screens between them, and the unclear nature of the software process which was computing the data on the other side.

Different design strategies need to be implemented when constructing interactive improvisational environments, for the traditional predetermined action->reaction model yields limited set of results for the performer, and turns the improvisation into a structured game within a predefined set of rules with little space for expressivity, intentionality, and nuanced control. Therefore, the design process should be flexible and organic enough to allow stakeholders a wider array of possibilities, a finer control over the system, and a common language between the performer and the designer to allow better communication of needs and obstacles. This underlines the necessity of having a person operate the media software via an alternative and less consuming software interface that eliminates the physical separation between the performer and the media designer.

The design methodology that was tested in the Topological Media Lab involves the performer in the design process, and resorts to an agile-like design methodology where systems are implemented in several stages, and tested by the performers between these stages, and then adjusted based on the performers' feedback.



Figure 2. Design deliberation between the designers and the performers in interactive environment where the media Software is an iPad portable interface. Einstein's Dream – The Topological Media Lab, 2013.

By developing non pre-determined experiences that adapt to each individual's input nuances in an idiomatic and fulfilling manner, and by capturing and analyzing continuous data streams, we allow the performers to embody and manifest their broader intentions by way of personae and interpersonal (inter-subjective) engagement with the systems and each other. System and performers must become a generative part of the broader aesthetics and by creating a common language they can evolve, manifests and co-create at tandem. In theory, it is from within this vein of inquiry / experimentation that a more appropriate / situational dramaturgical methodology might arise.

By developing such systems we should enable the performer to take the role, not only of spectator, but also simultaneously of creator where their performance creates the environment, and the environment conditions their behavior. In so doing they find themselves in a position of contemplation, a position where it is necessary to develop a cognitive map of the relationships between behavior and environment, between action and reaction, between individual and communal.



Figure 3. Daily debriefing and brainstorming session. Designing For Improvisation workshop – The Topological Media Lab, 2012.