Video Games as Cooperative Performance

Composing for Meaningful Play in Laptop Orchestras

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Abstract

Laptop orchestras — modern electronic music groups comprising many musicians using laptops as their instruments — have much in common with video games, such as utilization of networked play, singular (solo) and cooperative (ensemble) modes of play, and hardware that is multipurpose and widely available. The goals of this research-creation project were to explicitly link musical parameters to rules of a new video game created specifically for the Concordia Laptop Orchestra (CLOrk); to conduct qualitative group playtests of early versions of the "video game-composition" in order to determine which of its aspects were fun to play and prompted meaningful experiences among orchestra participants; and to modify the game according to playtest participant responses. This iterative design process led to the creation of *Stethoscope Hero,* a science fiction, multiplayer, "choose your own adventure" video game-composition for networked laptop orchestras. *Stethoscope Hero* has since been performed internationally, most recently at the Network Music Festival in Brimingham, UK, where the composer also presented a lecture on this same topic.

This research-creation project is part of ongoing research on the social and design parameters that contribute to meaningful play and fun in the context of networked laptop orchestras. It was supported by a grant from the Concordia Undergraduate Student Research Award (CUSRA), and supervised by Dr. Eldad Tsabary under his Interdisciplinary Networked, and Telematic Laptop Orchestra Project (INTLOP).

Background

CLOrk performances often include software instruments specifically designed for certain compositions. Of such cases, CLOrk director Dr. Eldad Tsabary has said one composes the orchestra, rather than simply composing for it. The group focuses on improvisation, and as there is no conductor, the control structures of most pieces are decentralized.

In its concert season, CLOrk performs new works every two-to-four weeks. The orchestra benefits from this busy schedule, as it opens opportunities for new and experimental approaches to music making. However, with such a short timeline between performances, it had been this composer's experience that while his compositions were finalized around the time of their premiere, it was only at this point that feedback pertaining to the players' experience of the composition and instruments would surface.

Iterative Design Cycle

An iterative design cycle was adopted for the development of the musical video game-composition:
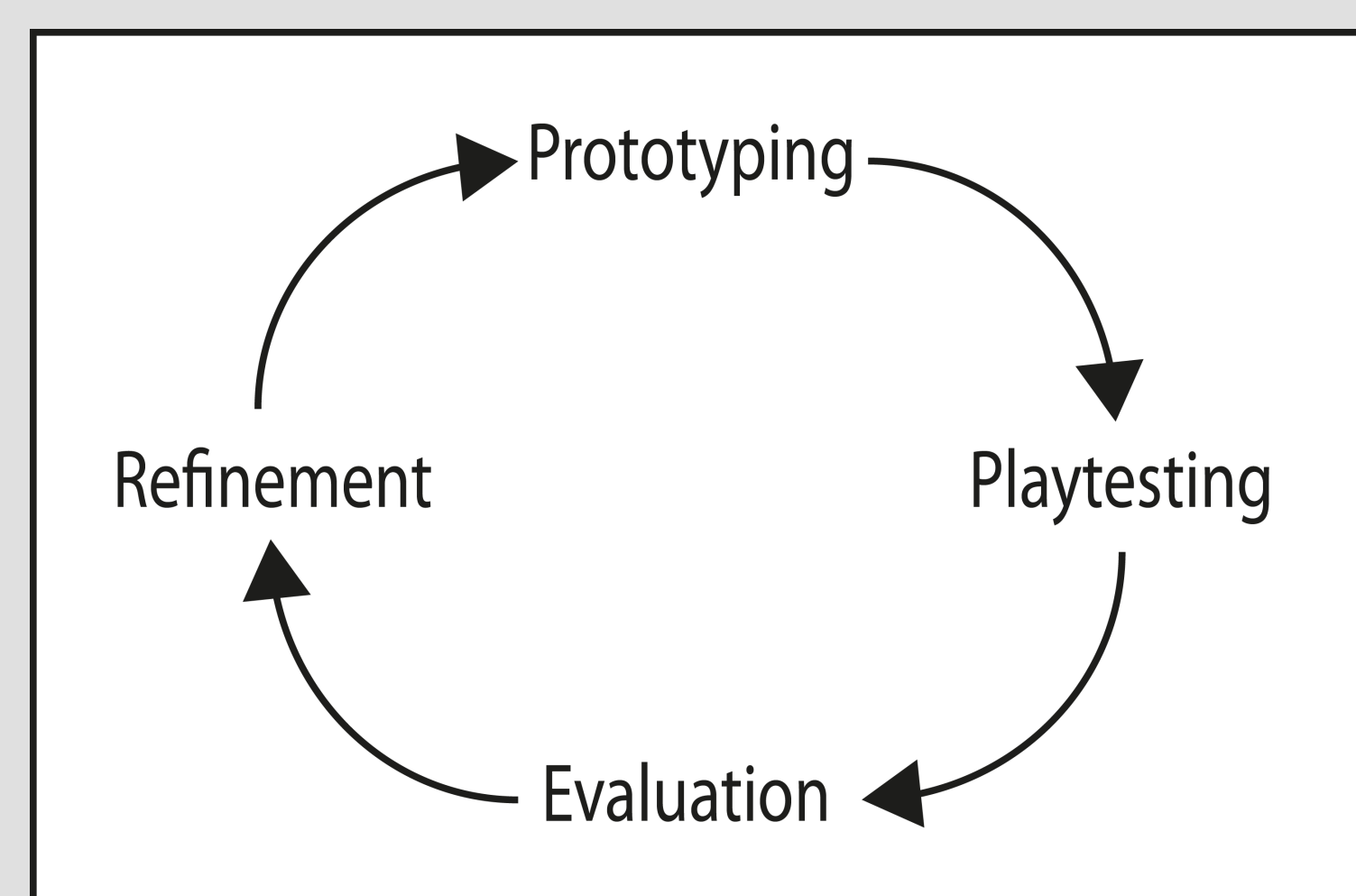
Stethoscope Hero
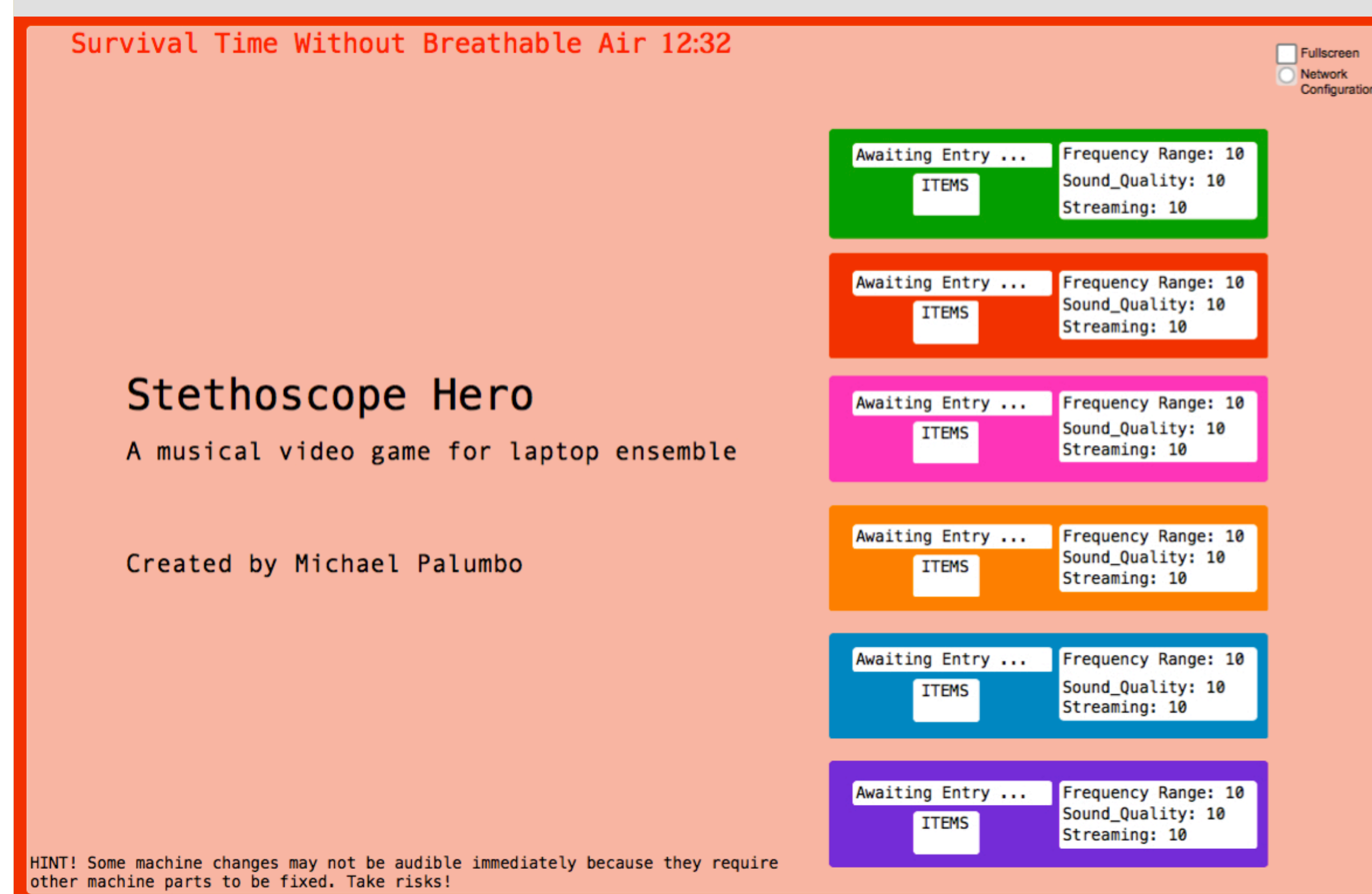
Stethoscope Hero is set on a remote planet that has no natural source of oxygen. The inhabitants of the planet long ago constructed laboratories that produce and distribute breathable air throughout the colony. The machines within the laboratory are a generator, an air conditioner, and an oxygen device. The stability of each machine relies in part on the operational status of the others.

The game's story begins with an earthquake, causing the machines of the laboratories to fail.

Members of the laptop orchestra will each create and control a perceptual superhero — of the group "The SuperHearoes" — who possesses special powers to repair broken machinery through advanced diagnostic listening. The superpowers are frequency range, sound quality, and streaming. These powers assist the characters with focusing on particular machines and hearing them clearly. Each player builds their own power profile, and throughout the game these powers can increase and/or decrease depending on the gameplay. The SuperHearoes have been tasked with saving their civilization by exploring the laboratory, listening to the machines, and attempting to make repairs based on what they hear.

This is a team video game. There is a time limit, and several possible endings to the game. Failure is, of course, an option: if the time runs out before The SuperHearoes repair the machines, everyone dies and the game is lost.

Meaningful Play

Most of the responses from playtest participants can be categorized into two primary elements of meaningful play: Discernibility and Integration.

Discernibility occurs when "…the result of the game action is communicated to the player in a perceivable way." (Tekinbas. 34)
To quote participant 1.1: "Times when a [game button] had no effect were consistently disappointing, especially when all indications were that the machine should be working. :("

For performers, it is important that they know they are contributing in a meaningful way. That they can hear sound as a consequence of their interaction with their computer, and their environment, and make sense of this relationship.

Integration occurs when "… an action a player takes […] affects the play experience at a later point in the game." (Salen. 35)

In order for the oxygen device in *Stethoscope Hero* to turn on, both the air conditioner and generator have to be running at a stable level. Some participants found this enjoyable: "I really liked that we were forced to go to the generator first to push a fader that not only had a really big obvious audible effect, but also changed the state of another room. This really effectively conveyed some of the rules of the game." Participant 3.

Future Work

Future work on *Stethoscope Hero* includes: a continuation of the iterative cycle, addition of variable difficulty-levels, cheat codes, expansion of the story, cross-platform compatibility, and inter-player communication (chat server).

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