
Critical Controllers: How Alternative Game Controllers Foster Reflective Game Design

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Abstract

Alternative game controllers are a site where issues of embodiment, accessibility, situatedness and circulation are in tension. The inquiry into the practices of alternative game controller designers can provide insight into controllers' critical potential. In addition, the research-creation of alternative game controllers and tools for their design and circulation aims to support design approaches engaged with their political implications. This paper presents the conceptual and

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methodological basis for this work as well as its progress to date.

Author Keywords

Alternative game controllers; reflective game design; game design research; critical design; research-creation.

Introduction

Alternative game controllers provide novel interfaces between players and games, often radically altering the play experience. They can be custom devices or re-appropriations of existing interface devices and they have been gaining cultural momentum via game jams, exhibitions, festivals and other specialized events. Alternative game controllers have been framed through discourses of innovation, as dominant game design conventions emphasize entertainment, production of value and inclusion of specific identities [4,16].

My research hypothesis is that alternative game controllers are a site where issues of embodiment, accessibility, situatedness and circulation are at play and in tension. They are a productive starting point to inquire about the wider role of interfaces and control [5]. Alternative game controller design affects dominant creation and circulation processes in a variety

Cook Your Way



Figure 1. (top) Close-up of the custom controller in **Cook Your Way**. (middle) Screenshot of the game screen. (bottom) Play session showing player interaction and arrangement. © Enric Granzotto Llagostera.

of ways. I argue that the research-creation of prototypes and tools that explore this site in terms of creation and circulation practices can provide relevant intervention points to challenge hegemonic game design.

Research objectives

The main goals of the proposed research are to a) configure situated knowledge about alternative game controllers and the game design practices around them, and to b) identify opportunities and construct devices for exploring their political implications and reflective impact. These objectives articulate different sets of goals and contributions, briefly described below.

Configuring and contextualizing alternative game controller design within related design practices and communities of practice. Alternative game controller practitioners experiment with the relationship between players, their bodies, their contexts and how people create and play digital games. Studying the design practices in this milieu can bring new information on human-computer interaction, game design, and artistic processes, connecting them.

The development of prototypes and tools for the creation of alternative game controllers. There are few design tools specific to the creation of alternative game controllers, with some of the more visible being directly attached to proprietary platforms [14]. The development of open and accessible tools, devices and methods for the creation of alternative game controllers is a significant contribution of this research project. Such tools can then be used, extended and re-appropriated by practitioners. The documentation of these processes will also provide the field of game

design research with process-centered case studies, in comparison with the usual emphasis on post-facto artifact analysis.

Investigating different forms of critical inquiry in game design. The research focus on the friction points which alternative game controllers activate will contribute to explore game design as a discipline from a critical perspective. This conceptual contribution is in conversation with previous works connecting game design with political critique and reflection [3,7,10,12]. It aims to do so in directions that interrogate and enable different power relationships and value alternative models for situated game design.

Related work

Past studies have discussed the aesthetics of controllers [8] and their role in play sensations [17]. These approaches entangle aesthetics, cognition and play experience. Game scholars point to a contemporary coming together of technological, ludic, and social catalysts for the development of “hybrid entertainment” [6]. The connection between interfaces, controllers, and the political economy of the video game industry has been explored both from historical perspectives [15,16] and in critical analysis of games and capitalism [2,5].

Recent works on game design practice have proposed an approach of studying game-design-as-experienced [9]. Interviews and accounts from practitioners working on alternative game controllers and hybrid play are valuable materials for understanding their models, practices and the circulation of their work [12,19].

Alternative approaches to design practice are an important axis of the theoretical framework of this

gambi_abo



Figure 2. (top) GambiCon1 keyboard-based wheel controller. (middle) GambiCon2 cryptocurrency mining sieve using a mouse. (bottom) Skateboard controller extending a Xbox gamepad. © Enric Granzotto Llagostera.

research. Critical and speculative design point to the role of design as mode of interrogation and political imagination [1], breaking with conventional design practice even if with a limited circulation [11,13]. These approaches will be explored in practice in relation to the political sites of alternative game controllers.

Methodology

The general methodological approach of the project is two-fold and its stages are briefly described below.

First, a configuration stage which will entail in both data collection from game event catalogs and online collections as well as interviews with practitioners involved in the creation and circulation of alternative game controllers. I will map recurring topics, patterns and elements of this form of game design within a broader assemblage [18].

Secondly, a research-creation stage involving the creation, evaluation and documentation of alternative controller prototypes and tools for their making and circulation. This effort will draw from critical approaches to design [1,11] and will be documented aiming to capture the reflectivity of game design processes. They will focus on the frictions and action possibilities mapped earlier. The results will be studied with qualitative approaches with practitioners engaged with alternative game controllers. This effort will explore the critical inspiration and possibilities of these tools in fostering subversion of hegemonic play and game design practice.

Progress to date

Research activities so far have focused on small-scale research-creation projects exploring design questions

around alternative game controllers. These efforts are summarized below.

As part of the Reflective Game Design research group, I developed **Cook Your Way** (figure 1), a political game aimed at raising questions about how immigration systems and capitalism combine to oppress migrants. The game presents a political critique materialized in different procedures, using a “cooking station” game controller. The project has been producing insights into game design strategies for reflection and alternative game controller design.

In the **gambi_abo** (figure 2) project, I draw from concepts such as kludge and Brazilian *gambiarra* to explore the circulation and production of alternative game controllers in relation to improvised and contingent design. The project consists of a series of prototypes of controllers using affordable materials and easy to customize processes, documented as open-sourced sets of DIY instructions. These position the DIY process as open and accessible, in contrast to closed corporate platforms [14].

Roots (figure 3), a collaboration with Rebecca Goodine, involves players in an experience that cultivates each other’s capabilities for care within a larger community. Gameplay focuses on a haptic-visual connection, with players working together to grow an onscreen digital garden by connecting roots within the well’s interior. The physical quality of the roots act as invitations into unfamiliar learning spaces.

The next stages of research will involve systematizing the knowledge built over these research-creation processes as design cases. Afterwards, I will prioritize

Roots

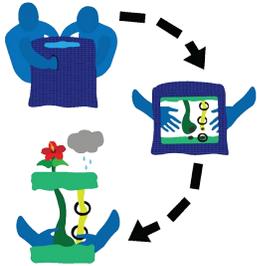


Figure 3. (top) Instructions diagram, showing the roots inside the “well” controller. (bottom) Players with their hands inside the controller, where they can connect the fabric roots to the ground and affect the on-screen garden. © Enric Granzotto Llagostera & Rebecca Goodine.

research on other creators’ practices, circulation of controllers and community initiatives.

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