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Slow serious games, interactions and play: Designing for positive and serious experience and reflection ☆

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ABSTRACT

Proposed herein are slow interactions and gameplay with serious games, referred to as *slow serious games*. These are slow movements intended to focus attention/concentration, and provide openings and opportunities for reflection, contemplation, and learning. Like devices used in film and theatre, this forms part of an emerging design repertoire of strategies and devices to articulate and manipulate time and space and narrative in interactions and games for the shaping of experience. To illustrate the idea of slow serious interactions and gameplay, the related interaction design, interactive art and game literature is reviewed. Next, devices and strategies for the design and development of slow serious interactions are proposed. Through example, we describe the development of a game to raise awareness of issues and threats affecting ecosystems in Australia's Great Barrier Reef. This includes novel design strategies to engage the player in interaction/play with these issues and threats, and to blend slow and fast interaction and gameplay to stimulate thought and shape experience between positive and serious experience. The design strategies outlined herein can be used to inform design and development of other interactions, games and slow serious games and art games.

1. Introduction

In today's increasingly complex, demanding and fast-paced world, more and more people are adopting lifestyles and behaviours to help slow down, escape and provide a respite from our busy lives and reconnect to people, places, communities and cultures. For example, as demonstrated in moves towards organic and slow food as alternative to mass-produced and fast foods, and the emergence of a "slow fix" for families who are moving away from packed schedules, activities and technology [17]. While the advancement and pervasiveness of technology is intended to support humans, and assist in making our lives less complicated, paradoxically it can be argued that time-consuming technology is making our lives increasingly complex.

In today's world we are surrounded by faster and faster technology and digital media offering many services to connect, communicate, and help organize and make improvements to our lives. Voice and video calls, email, texting and social media are all part of the fabric of our hectic lifestyles, but the more they pervade our lives, the more demanding they become, and the more time, effort and attention they require in order to operate and maintain. So rather than helping us to deal with our busy lives, they may be making things even more frenetic.

Modern technologies, including digital games, are associated with a state of hyper attention, leading to expectations of faster and faster interactions, increased impatience with waiting times and a preference for multi-tasking in order to keep non-active time to a minimum [15,16].

Deep attention, in contrast to hyper attention, is associated with older traditions of human thinking and intense focus on a single task or theme for longer periods of time. Both modes of attention have their benefits, but as Hayles [15] points out, hyper attention is perhaps more suited to most situations in the modern developed world. Deep attention might be becoming less common and possibly less appropriate, but this does not mean that it will disappear. Many see this as an opportunity to re-think not only the benefits of deep attention and reflection, but also methods for attaining and maintaining it. Although reflection is about "lingering, looking both forward and back with mindfulness and care", it is also a creative process that involves the "creative synthesis of discrepant elements" [29], p30 & 31).

Such deep attention, reflective, contemplative, and lingering experiences have a role to play within interactions with technology, products, art, games and serious games. Herein, design strategies and devices for slow interactions and slow play with games

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and serious games are proposed to help provide a breathing space from our frenetic lifestyles, and in particular, aim to open opportunities for learning and reflection on a message, argument, and/or an experience. Adding to the repertoire of strategies for design, herein, the manipulation of interaction and gameplay speed and time is explored. Through example, the development of a game is described incorporating the design strategies of slow interaction and gameplay to help raise awareness of issues affecting ecosystems in Australia's Great Barrier Reef. In particular, slow movements in interactions and gameplay to encourage reflection are blended with fast gameplay to promote engagement. As the game incorporates both traditional elements of fast gameplay and slow reflective and experiential interactions, using the serious games continuum [19] it can be identified as being both a game for purpose and an experiential/experimental environment/game for purpose.

This article is divided as follows. The next section provides a review of background and related work in slow movement, technology, interactions and games. In section three the design and development of a slow serious game is described followed by discussion of typical reactions from players/participants.

2. Background and related work: slow movement, interactions and games

In this section, slow movement, slow technology, slow interaction, and slow games are identified and discussed to shed light on the philosophy, design strategies and value in slowing down. Hallnas and Redstrom [14] proposed the design philosophy of slow technology to shift technology from making the workplace more efficient to creating and embedding slow technology into people's everyday environments. Since then, the design agenda has expanded to include other themes, for example: designing for slowness, solitude, and mental rest; and designing interactive systems to be used across multiple generations and lifespans [5]. And in terms of being "green" and sustainability, HCI has been quick off the mark to align with ecologically sustainable ideologies similar to groups such as The Slow Movement and address a related design challenge for technology on environmental sustainability [9], sustainable lifestyles [30] and providing individual choices to reduce consumption (e.g. [13,32].

While work in slow technology and in "green" and sustainable HCI can in some respects be considered an antidote to our frenetic lifestyles, our interest herein is more akin to performing interactions in a leisurely, gentle and unhurried manner. Such interactions require less rigorous physical effort and are similar to performing, or *dancing with technology*. This aims to create a sense of calm and allow participants to break away, clear their mind, unwind, and so open opportunities for reflective thought, contemplation, and learning.

Interactions with technology, artifacts, interactive art and games more in line with slow serious interactions are for example, Bogost's [2] and Brough [3] slow games, Edmonds [7], Edmonds and Franco [8] and Gaver et al's [12] artworks/artifacts that people live with and slowly change (e.g. color, image), hourly, day-to-day or from month-to-month.

Ernest Edmonds makes works that are interactive but very, very slow. He wants people to live with his works over a long time and notice the changes more on a day-to-day level rather than second-by-second. *The Shaping Form* artworks are designed to interact in the environment in which they are found (Fig. 1). For example, through people walking-by and hand waving:

> *"...the work accumulates a history of audience activities and that history slowly changes the behaviour of the work, including colour saturation, timing and so on"*
>
> *"A month or two on display in a gallery, for example, can lead to clearly observable change." Edmonds and Francesca (2013) "...the general shift of colour is slow enough for the work to be quite different in the mid-afternoon to mid-morning...it is a changing exhibit"*
>
> [Ernest Edmonds [7]]

So while changes occur in response to regular paced audience accumulated activity (walking-by, waving) over long periods of time rather than slow audience movements, to experience the slow changes in the works, a curious and interested audience would have to revisit at different times or days.

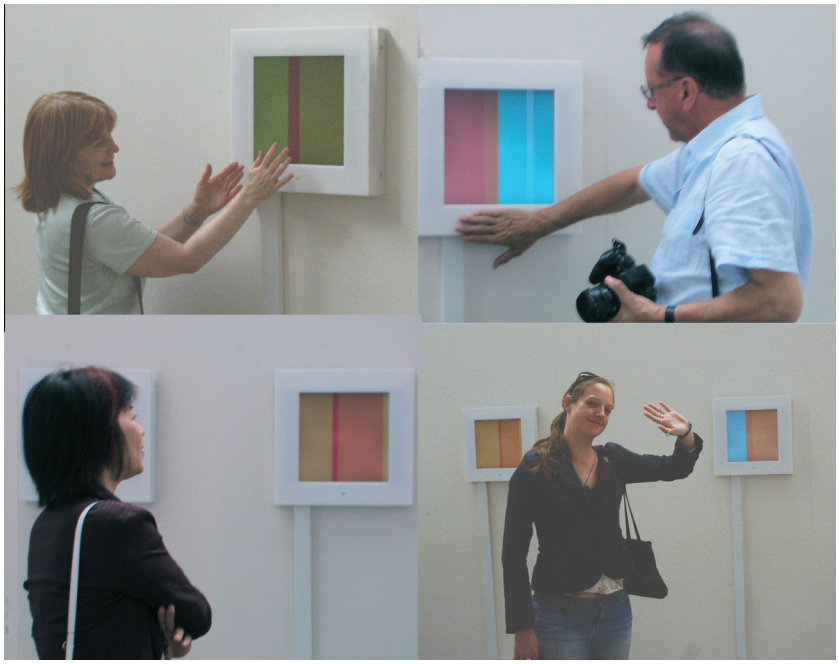

Fig. 1. The shaping form.