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Revealing Stealth Health

Examining Agency in Physical Activity Games

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Abstract

This poster presents a framework for analyzing games that are designed to impact players' physical health in some way. Our analysis is grounded primarily in the notion of player agency (or, in many cases, lack thereof) relative to players' own bodies, behavior, and health. We borrow the concept of "stealth health" from nutrition research to articulate this problem with agency, and analyze several examples of commercial games or research-designed games that represent distinctions among various kinds of player agency and motivation.

Introduction

Many health researchers and game designers attempt to harness the motivational power of games to help improve players' physical health. But evaluations of such games tend to lump them into a single category of "exergames" and examine their overall effectiveness at impacting narrow health indicators such as BMI, resting heart rate, etc. Instead, we argue, a more nuanced approach is necessary to evaluate the means and goals of physical activity games, and to forward a different way of thinking about the agentive role of players in relation to these games and to their own health and behavior. We present key concepts useful in analyzing healthy games and include some examples from the research field and commercial marketplace for each.

Literature Review and Framework

There are numerous technological tools being used to promote health and wellness among youth, but increasing in popularity is gaming technology and other tools that use gamification principles (Baranowski & Budday, 2008). Lu and colleagues (2013) conducted a systematic review that examined the effects of healthy videogames and found approximately 40% of the 28 studies reviewed actually saw improvement of young players' selected health indicators, but this study did not articulate the design and motivation strategies used by game designers to realize these outcomes, nor did it deal with the agentive relationship of players relative to their own health and bodies.

"Stealth Health" is a term borrowed from health and nutrition research, and it describes an intervention or product that attempts to sneak healthy practices into daily routines, masking the medical goal of

these activities or products and making them fun (Lieberman, 2009), such as “fruit punch” containing vegetables and “gummy” vitamins. In the most “stealthy” interventions or products, the explicit goal is actually a lack of agency, since such interventions attempt to actively mask choices individuals would normally select against, such as eating vegetables they usually find unpalatable or remembering to take a daily vitamin or medicine. Some studies suggest that while games that essentially “trick” players into exercising may temporarily improve health metrics, these interventions merely motivate children to change their dietary or physical activity patterns as a result of the game’s goal, not for the intention of enhancing individual health practices, and consequently the beneficial health outcomes could be described as side effects rather than realized goals (Robinson, 2010).

Motivation in particular has long been a challenge to get right for educational games in general, let alone new developments in healthy games. Intrinsic motivation is a desire to do something for enjoyment or for its own sake, whereas extrinsic motivation is a desire to do something because of some outside factor such as material reward, social approval, avoidance of punishment. Many learning games have been criticized for relying on extrinsic motivation; for example, solving mathematics problems in order to blow up asteroids, rather than to progress through an interesting and inherently mathematical situation (Ito, 2008). The same criticism can certainly be leveled at many healthy games, particularly those relying on stealth-health tactics. Changing negative attitudes toward physical activity seems unlikely when the activity is treated like something that has to be concealed in order to be enjoyed.

Analysis and Examples

Many commercially available games are based on a micro-level behavioral reinforcement model, wherein individual movements and intensity are rewarded within the game immediately after they are performed (Adams, et al, 2009). These games are also all exergames, in that they are designed to encourage and reward physical activity taking place *during* the immediate experience of game play, at the game console or with app-in-hand. Figure 1, which shows a martial arts training game for the Nintendo Wii, is an example of this type of game, wherein players receive points as they punch.

Figure 1. (left) Nintendo Wii martial arts game screen. Figure 2. (right) Motionmaze app screen with movement directions.

Other commercial games are designed to accompany players as they go about their daily routines, encouraging them to incorporate more physical activity into otherwise sedentary moments. Such games often send alerts to players at various times during the day and tell them to move, then reward that movement with in-game rewards. *Motionmaze* is a game designed for children in which the

player moves their body to guide a character through a series of mazes. A related category of games accompanies players' existing exercise routines, such as running or walking, in the surrounding world. Commercial examples include *Zombies Run!* and *Wokamon.* While these portable games are more integrated into players' fitness-related activities than console-based games, neither type bolsters or encourages intrinsic motivation, and both *Motionmaze* and *Wii* are marketed as incorporating physical activity into a game type that would otherwise be sedentary and are thus essentially stealth-health. The poster will describe other examples and a deeper examination of agency via player decision making as well as game type.

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