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Psychology of Game Design: Intrinsic and Extrinsic Rewards

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Abstract

In this paper, I take an overview of the convergence between psychology and game design, particularly the use of intrinsic and extrinsic rewards in game design.

Keywords

Game Design, Reward Mechanisms, Psychology

Disciplines

Computer and Systems Architecture | Digital Communications and Networking | Hardware Systems | Other
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Comments

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PSYCHOLOGY OF GAME DESIGN: INTRINSIC AND EXTRINSIC REWARDS

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ABSTRACT

In this paper, I take an overview of the convergence between psychology and game design, particularly the use of intrinsic and extrinsic rewards in game design.

KEYWORDS

Game Design, Reward Mechanisms, Psychology

1. INTRODUCTION

Game designers have been incorporating techniques and discoveries from psychology into their work, for some years now, though sometimes intuitively rather than consciously. Game design as an academic discipline is still taught in a somewhat haphazard manner, and though much relevant research has already been done in psychology, it is not necessarily applied consistently by game designers, and little guidance is available for the ethics of the practice. I am exploring motivation in game design to consider proposing best practice and/or ethical guidelines.

2. ETHICAL USE OF REWARD MECHANISMS IN GAME DESIGN

As with any art form, there is a tension between commercial success and artistic integrity, in the game design field. Clearly game designers and studios hope for the former, but in some cases it is clear the need for commercial success drives every aspect of game design, eclipsing both artistic concerns and ethical ones. Social networking games (*Farmville, Mafia Wars*, etc., named because they are played on social networks such as Facebook rather than because they are particularly social) have come under especial criticism.

Costikyan wrote, on 'social games': "If you look at the interplayer communication fostered by social tycoon games, you will see that every possible communication, every game action that a player may take relative to another player, exists solely to serve the purposes of the developers. Each communication action is designed to do one of three things: attract new players (virality), encourage players to return (retention), or encourage purchase (monetization)." [1]

Likewise, Bogost has concerns, expressed during an ongoing debate about social games: "I have a liberal sense of what a game is. I do think, though, that the kind of experiences that [Zynga] are creating are more like [Skinner] boxes, like behaviorist experiments with rats. They're relying on creating these compulsions so people will want to come back and click on the bar. And so, in that respect, I fear those kinds of products." [2]

"Skinner boxes" refers to the work of early behavioural psychologist B. F. Skinner, in examining motivational reward systems in humans and animals.

People game for various reasons, and McGonigal has attempted to integrate findings from positive psychology (the study of psychology for the purposes of increasing happiness, rather than solely for the purpose of treating disorders and depressions) into her work on the happiness provided by gaming: "When we're depressed, according to the clinical definition, we suffer from two things: a *pessimistic sense of inadequacy* and a *despondent lack of activity*. If we were to reverse these two traits, we'd get something like this: *an optimistic sense of our own capabilities* and *an invigorating rush of activity*. There's no clinical psychological term that describes this positive condition. But it's a perfect description of the emotional state of gameplay... In other words, *gameplay is the direct emotional opposite of depression*." [3]

The above seems overly simplistic; it seems likely that gameplay is not an *inherently* positive, life-affirming activity that makes gamers happy, but can in some cases be a coping mechanism for unhappiness, boredom, and even much deeper depression. Gamers who feel they have little power over their own lives often play compulsively because it provides them with some control. The same thought processes in others might lead to self-harm and eating disorders. Lyubomirsky [4] repeatedly refers to intrinsic reward mechanisms when analysing the results of her research into methods of becoming happier, using terms like mindfulness, intentionality, and "living in the moment" to describe the deliberate decisions people can make to actively improve their happiness; this is all a far cry from the more compulsive, Skinner-boxed, extrinsic motivators that underpin a great deal of modern game design. A sizeable body of research into extrinsic reward indicates that, over time, it can be a powerful demotivator, reducing the intrinsic enjoyment of a task or leisure activity [5] (the overjustification effect).

3. CONCLUSIONS

More research is needed. Several questions arise: In "social" and other game design, how much of an extrinsic reward mechanism is appropriate, ethical, and even commercially effective (in the long term)? Are all competitive forms of gaming motivated solely by extrinsic reward, anyway, as Kohn argues elsewhere [6], or is it possible that sportsmanship, *fiero* (an Italian term meaning "personal triumph", adopted by writers on game design), and flow (the mental state of total engagement with an activity) can combine to make intrinsic motivators stronger than extrinsic ones? How can we use these findings to create better games (for various values of "better")? How does gaming-related motivation differ in different individuals (including in those who may have an abnormal response to gaming)?

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