

Feeling Strangely Fine: The Well-Being Economy in Popular Games

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Abstract. There is a growing interest in persuasive games designed to positively influence players' well-being in areas such as physical and mental health, particularly in terms of education. Designing such “well-being games” is challenging because games themselves have not been sufficiently examined from this perspective. Examining the ways popular games convey messages persuasively is an important step in understanding design in this area. By studying the popular domain we can derive considerations for the design of games targeted at promoting human well-being.

1 Introduction

Computer games which can be used to convey positive persuasive messages are a growing area of interest. Particularly desirable are games which promote human well-being, defined here as a “healthy, contented, or prosperous condition” [1]. The design of such games, however, is challenging for many reasons. Beyond obvious ethical and budgetary issues is the basic question of *how* games and gameplay can be used as a persuasive technology for human well-being.

Persuasive technology concerns “interactive computing systems designed to change attitudes or behaviours” [2, p.1]. Focusing on the *behavioural* aspect of this definition when considering computer games leads us to questions of *gameplay*. The gameplay of a computer game consists of a player's behaviour in the gameworld, as expressed through the user-interface, and the game's responses to this. To design a persuasive well-being game it is critical to identify how gameplay structures lead players to adopt, at least for the course of the game, particular values and behaviours.

After presenting background material in section 2, we offer a specific approach to exploring computer games based on the concept of a “well-being economy” in section 3. Next, in section 4, we use this approach to study four popular computer games. Examining the state of the art in this manner allows us, in section 5, to present insights into designing specific well-being games.

2 Background

Sales of computer games in the United States topped seven billion dollars in 2004 [3]. Games such as *Halo 2*, which sold \$120 million dollars worth of units on its first day [4], are inviting comparisons between the game industry and the movie box-office. The virtual world of the online game *EverQuest* was estimated to have the seventy-seventh largest economy in the *real* world based on real money spent in online auction houses for items, gold, and so on [5]. There can be little doubt that computer games are one of the most popular and influential forms of software in use today.

In his book *Persuasive Technology*, B. J. Fogg mentions computer games as a potential persuasive tool, positioning them largely as a form of operant conditioning [2]. Arguments about whether games influence real-world behaviour, such as aggression, have existed for as long as games themselves [6]. The idea that computer games are genuinely *persuasive* has led to considerable moral debate, such as the uproar over the “hot coffee” sexual content uncovered in *Grand Theft Auto: San Andreas* [7].

Research relating to persuasion in computer games includes analyses based on rhetoric [8] and ideology [9] as well as discussion of behaviourism in gameplay [10]. Attempts to use computer games in education have been around for some time, such as Thomas Malone’s heuristics for motivational games [11], and continue to be of interest today, as in the work of James Paul Gee [12] and the *Education Arcade* [13].

One effect of the increasing acceptance of games as a persuasive or educational medium is that they are being used more “seriously.” The United States military has developed the game *America’s Army* quite specifically as a means to recruit potential new soldiers. The official website states that the game is intended to provide players with an experience of the army’s values achieved in past times more directly via the draft [14]. The *Hubba Hubba Challenge* is a game developed for the New Zealand Government that promotes sexual health awareness in a game-like format [15]. The recent Serious Games Summit in Washington D.C. represents a major drive toward creating games for spheres other than “just” entertainment [16]. Whether games are a large or small factor in conveying persuasive messages, it is clear that interest in the area is only growing. It is also clear that little guidance for either design or analysis of such games is available.

3 Persuasive Gameplay: “Economic Analysis”

At their most basic, computer games involve a system of rewards and punishments based on a player’s behaviour. This constitutes a primitive kind of *economy*, exchanging “work” for resources. In *Space Invaders* the player receives points for each alien invader killed, for instance. Many contemporary games, however, are considerably more sophisticated in how they create an economy related to player actions. These economies are central to convincing the player

to adopt particular values and behaviours during gameplay. We suggest here a small set of related concepts for use in analysis developed from a case study [17] and an extensive literature review. Although we focus on the specific value of “well-being” in this paper, it should be clear that this analysis is more generally applicable.

Action and Activity Central to any understanding of behaviour, and thus persuasion, is *what can be done* in the game. In other words, it is necessary to examine the possibilities for action, from the most basic commands to the more complex activities that become possible in the context of the game-world. Simply put, the actions and activities available are a key indicator of behaviours valued in the gameplay economy, including those concerning well-being, because *this is how behaviour is produced*.

Valuables All games present certain elements or items in play as being *valuable*, particularly in connection with the player’s behaviour. At its most basic this parallels the rewards schedule found in operant conditioning, but it can also be more complex. By examining what is presented as valuable either through responses to actions or even explicitly quantified in the interface, we can build a picture of the game’s system of valuables. Learning how well-being is positioned as a valuable is central to our project of understanding how it is more generally presented in gameplay.

Opposition When considering what the gameplay is intended to persuade the player to do, we must also be aware of what is *opposed*. There are two basic considerations here: First, opposition is often presented as a challenge. This gives *meaning* to actions taken in the game by making them something to be *earned* through play. Second, if we intentionally play *against* the perceived nature of the game, we learn about how the game reacts to this. Such oppositional play uncovers negative evidence for a value like well-being by showing how playing against it is resisted [18].

Play and Progress Both in our own work [17] and in the work of others [19], the values of “play” and “progress” are shown to be central to understanding gameplay of any kind. *Play* can be thought of as behaviour in the game for its own sake, while *progress* relates to behaviour specifically directed toward advancement. We can think of play and progress as being the basic “coin of the realm” of gameplay. To understand any persuasive message, such as one of well-being, we must seek to explore its relationship to these core gameplay values.

Using the above approaches to analysis we can examine games with an eye to how they portray values such as well-being. Such analyses yield insights concerning how the structuring of gameplay toward particular values leads players to adopt, at least during play, the associated behaviours.

4 Case Studies: Well-Being in Popular Games

In this section we present a case study of the value of *well-being* in four recent and popular computer games. The games are *Half-Life 2* [20], *Fable* [21], *Grand*

Theft Auto: San Andreas [22], and *The Sims 2* [23], each from a different genre. Respectively, they are a first-person shooter, a role-playing game, an action-adventure game, and a simulation. These genres emphasise quite different types of gameplay, from “fast-twitch” reaction-based gaming in *Half-Life 2* to the planning of domestic life in *The Sims 2*. For each game we apply the economic approach to analysis discussed in the previous section to the value of human well-being, defined as “health, contentedness, and prosperity.”

4.1 Half-Life 2

Half-Life 2 places the player in control of the avatar Gordon Freeman, a man sent by a mysterious power to combat a fascist world controlled by the “Combine” (“The right man in the wrong place can make all the difference in the world”). The gameplay mainly consists of moving through a grey and desolate world killing enemy Combine soldiers in order to free the world from oppression.

The basic *commands* in the game consist of movement, either on foot or in a vehicle, and the use of weapons in combat. The weapons can *only* be used on enemies such as Combine soldiers and become non-functional when directed at non-enemies. In conjunction with the Combine’s attempts to kill the avatar, the credo for action and activity is very simple: *kill or be killed*. Movement is highly restricted by the architecture of the game’s levels: despite appearing free to move anywhere, the player can only direct the avatar along one path, killing those enemies who get in the way.

The system of *valuables* in *Half-Life 2* is as simple as the available actions. The core valuable is Freeman’s *health* which is quantified as a number from one to a hundred, and is supplemented by an *armour* rating. These two numbers define well-being in the absolute sense. Further to this, well-being can be valued according to the fire-power at Freeman’s disposal, a kind of combative “prosperity.” More and more powerful weapons are required as he faces greater and greater threats to his well-being.

The gameplay of *Half-Life 2* is thus defined by *opposition* to Freeman’s well-being. As the quip goes, “you’re not paranoid, they really *are* out to get you.” The game involves an almost non-stop assault on Freeman’s well-being by Combine soldiers, aliens, helicopters, robots, and more. All standard gameplay is valued relative to *survival*, from health levels to access to weaponry. Despite this emphasis on survival, the importance of death is questionable. The sole in-game consequence of death is to be reincarnated at a slightly earlier point, and having to re-traverse the lost ground.

Attempts to play in any form of opposition to this basic economy of well-being are more or less impossible. Running from enemies is possible in the short term as a means of remaining alive, but becomes untenable as obstacles in the architecture are encountered and more enemies arrive. Short of hiding and refusing to move, which is decidedly *not* to play the game, there is no recourse but to move forward and shoot.

Half-Life 2 can be summed up as foregrounding an *economy of progress*. The core activity is to move forward in space, stepping over the bodies of fallen

enemies. Well-being is predicated on this form of progress because only by progressing to the end of the game will all threats to well-being be eliminated. With no-one left to kill, and no distance left to run, the game ends and Gordon Freeman is put back to sleep.

4.2 Fable

In *Fable* the player's avatar is a young man whose village has been destroyed and family either killed or captured by bandits. After training at the Hero's Guild he goes out into the land of Albion to complete various quests and to earn fame and fortune while saving the world from evil. A major feature of *Fable's* gameplay is that the player can choose whether the avatar played is good or evil through their actions.

The basic *commands* in *Fable* concern combat (attacking with weapons or magic spells), movement through the world, or social interactions (such as marriage and drinking at the local pub). The core activity of the game is pursuing a series of predefined quests which advance the story. In addition, the game provides activities that are not directly tied to the quest structure, such as fishing, foot-races, or digging for buried treasure. The message conveyed by the available actions and activities in *Fable* is one of choice and freedom. Though a value of survival is still implicit in the commands for combat, there is also the suggestion of a more gentle prospering through fishing and so forth.

Well-being as "health" is, again, a central *valuable* in *Fable* and is quantified in a meter measuring the avatar's health level. Health is defended against threats using a variety of weapons and magic, or by wearing armour, and is maintained by using items such as health potions and food. As a role-playing game, *Fable* heavily emphasises the development of the avatar by *upgrading* health levels, improving dexterity in combat, and other key statistics which lead to greater success (largely in combat). The values associated with the avatar's skills in these areas represent the central valuable of the gameplay economy and are increased with Experience Points gained through combat. Combat thus becomes valuable largely as a matter of acquisition of points and other items, rather than as a matter of pure survival.

This suggests that well-being as *prosperity* is, in fact, the dominant concept. The game emphasises obtaining greater and greater levels of power through Experience Points, as well as the acquisition of properties, valuable items, clothing, and so on. The game also presents a system of Renown Points, again obtained largely in combat, which quantify prosperity by measuring how "famous" the avatar is in the world. The inhabitants of the world react to the avatar with everything from derision to awe.

Well-being is most fundamentally challenged by the various enemies who seek to kill the avatar in combat. When such encounters do end in the avatar's death, the game must be restored from the last save point. This can be inconvenient if a quest must be restarted, but is not of huge significance. Interestingly, the avatar's prosperity is essentially never threatened, as all items and wealth are restored along with his life and cannot be lost during gameplay. Even the Renown points

measuring fame do not diminish with time: once a piece of prosperity is obtained it is there forever.

Playing in *opposition* to the economy of combat, fame, and fortune *is* possible in *Fable*, unlike in *Half-Life 2*. Importantly, one *can* flee enemies successfully. More systematically, one can direct the avatar to settle down, get married, and to make money by fishing and running foot-races. The avatar's well-being is no longer threatened in any way, and a life of peace and quiet is attainable by simply refusing to participate in the combat side of gameplay. To do so, however, is extremely uncommon among players because one cannot *demonstrate* and experience the health and prosperity obtained in the game without fighting and completing quests.

Fable, in other words, is clearly a game emphasising a value of *progress*, and well-being as *prosperity* or successfulness in the world. Within the structure of quests, avatar development, and combat, however, the game offers a great deal of opportunity for *play*. As already mentioned, there are alternatives to combat such as fishing, digging for buried treasure, or perhaps getting married. Even experimentation with the avatar himself, whether it is his clothing, combination of skills, or alignment toward good or evil, is a form of playfulness within progress.

4.3 Grand Theft Auto: San Andreas

In *Grand Theft Auto: San Andreas* (*GTA:SA*) the avatar is Carl, an ex-gang member who has built a new life in another city ("I live in Liberty City now. I'm clean. Legit."). He returns home to Los Santos at his mother's death and is urged back into a life of crime by his family and gang. The gameplay takes place in an immense world of three cities and linking countryside and includes specifically designed missions as well as the ability to simply move about and pursue other objectives.

The basic *commands* of *GTA:SA* revolve around combat with weapons and movement in the world on foot, swimming, or in vehicles. Like *Fable*, the game offers a set of missions or quests which give a narrative structure to the game and are generally variations of "go to place *X*, kill group *Y*." There are also many other activities to engage in, far surpassing what is offered in *Fable*. Carl can play pool, compete in triathlons, attend driving school, climb a mountain to watch the sunrise, and much more.

As usual, the basic well-being *valuable* is Carl's level of health and armour along with his ability to defend them. These are maintained using special "medical packs," eating food, wearing armour, and, perversely, by sleeping with prostitutes. Well-being as prosperity within the game is valued largely in terms of the amount of money obtained, which is always displayed on-screen. This allows the purchase of property, clothing, and food, all pertaining to well-being as health and prosperity.

What is especially interesting about valuables in the game, however, is that far more important than any issues of health and survival is the pursuit of knowledge and achievement, presented as a prosperity for the *player* rather than the avatar. Statistics in the game's menu system inform the player of everything

from their top time in a motorbike race, to the number of enemy gang-members killed, to the amount of distance they have covered on foot. The most coveted statistic is “percentage of game completed”: just how much the *player* has seen and done. The true valuables concern wealth of *experience*.

GTA:SA is interestingly characterised by a *lack* of serious challenges to well-being. While it is not uncommon for Carl’s health-bar to reach zero, the effects are inconsequential. He is taken to hospital and restored to life, losing only his weaponry and any progress in the current mission, which are both trivial at most stages of the game. While there are threats to the avatar’s continuous survival, it is never too difficult to avoid death, or to simply die and shrug it off. Whereas in *Half-Life 2* the objective of movement through space is to kill enemies, in *GTA:SA* the enemies are a hindrance to movement through space.

Instead, what the game provides is a world to explore and play in *without* much obstruction. Playing in opposition to the traditional play of survival and protecting well-being is not only possible, but *encouraged*. *GTA:SA*, in other words, is a game primarily of *play*. A common playing of the game involves exploration and experimentation with reference to the missions only when some external direction is desired.

The elements of *progress*, such as Carl’s growing skills at driving or using weapons, come as a result of *play* rather than from any concerted effort to develop them. The wanton destruction engaged in by players is also quite playful, an experiment within the world of the game to see what can be done. Even the missions themselves, the most direct form of progress, are more to be played with than obsessively completed. Well-being in the game most crucially amounts to the well-being of prosperity: experiences the game offers, discoveries of hidden places and unexpected results.

4.4 The Sims 2

The Sims 2 has no quests or missions structuring its gameplay. Instead, the player tells a story by controlling the Sims, the virtual people in the gameworld. The Sims live in suburban environments and running their lives includes everything from birth to death, from trips to the bathroom to proposals of marriage.

The *interface* to *The Sims 2* is simple point-and-click and provides a wealth of possible interactions with objects in the home or with other Sims. These interactions vary from taking showers, to giving a daughter a hug, to playing videogames, to preparing dinner for the family. The game offers an immense scope for action in the limited context of a household. Because the game presents itself as a simulation of life, the well-being connoted by the commands available are those we might expect in real life: good relationships, good health, wealth, and so on. Well-being is represented positively, as something to be improved, rather than as something to be *defended* as in other games.

The core *valuables* of the game are indicated by *quantifications* of well-being. Coloured Need meters reflect the basic well-being of each Sim, covering everything from how full their bladder is to how hungry they are. A further measure, called the Aspiration meter, quantifies the prosperity element of well-being: Sims

have high-level wants and fears such as “getting a job in the Science Career” and “relative being left at the altar” which affect how prosperous they feel. Other quantifications also revolve around prosperity, such as the quality of relationships and skills possessed for performing jobs and household chores. Well-being is presented as a statistic to be manipulated by directing Sims to particular actions and objects: A Need such as “hunger” is improved by eating something from the fridge, and a Want such as “meeting someone new” is realised by inviting other Sims over. It is the player’s responsibility to maintain and improve the Sims’ well-being: “your guidance can help keep them in a good mood.”

Challenges to well-being in *The Sims 2* come in the form of hunger, loneliness, kitchen fires, divorce, and so on. Further, a Sim is never truly satisfied: “When you satisfy a Want, a new one will take its place.” Worst of all, a Sim might realise a Fear, such as being rejected for flirting, causing their Aspiration meter, and thus their prosperity, to drop. Gameplay is a constant battle, therefore, to keep the Sims’ heads above water, and to keep striving for more and more happiness in the face of disruptions. In the worst case, a Sim can *die*. This is traumatic to a player because death is not presented as a natural part of gameplay. The game itself emphasises this in certain circumstances: “If the point of playing *The Sims 2* was to kill off all of your Sims, then you would be the world champion! But, unfortunately, the way things stand now, *The Sims 2* is still a LIFE simulator.”

Playing in *opposition* to the basic understanding of well-being in *The Sims 2* is to pursue death and illness. Interestingly, this is perfectly possible and even perversely entertaining: A significant amount of content in the game is only seen when the Sims are desperately unhappy or even dead. Without opposing health and prosperity we would never see the giant Social Bunny who arrives when a Sim is depressed, or the Grim Reaper who calls heaven on his cellphone when a Sim dies. Despite these diversions, the name of the game is certainly still the pursuit of well-being in all its forms, and most of the game’s experiences are accessed that way.

The Sims 2 is often described as a game of pure *play* whereas, in fact, there is a major emphasis on *progress* within this play. At any given point, for example, not all possible commands are available. Instead, the game presents a set of actions based on various elements such as relationship status and skill-sets. To make further actions available the game must be progressed through building relationships, learning new skills, and so on. Similarly, the player must advance careers, make money, and buy new possessions to experience as much as the gameplay as possible. The player is encouraged to play with *how* to progress, but measures of that progress are what define well-being in the game, from the length of a “social” Needs meter to the relationship rating a Sim has with her husband.

5 Discussion

In the above analysis of four popular computer games we have seen that each operates with a distinct economy of well-being in its gameplay. Further, it became

apparent that the games differ as to how well-being is presented and interacted with. Our objective in performing this study was to derive insight into the design of persuasive well-being games. In this section we discuss a number of themes from our analysis of popular games to begin to understand the possible representation of human well-being in gameplay.

5.1 Valuing Well-Being

The most dominant concept in our analysis was the uncovering of various *valuings* of well-being in gameplay, from the detailed quantifications of *The Sims 2* to the very basic “kill or be killed” of *Half-Life 2*. In all games, well-being was most basically defined by whether the avatar(s) lived or died, but this prospect was generally shown to be trivialised by the gameplay. In all but *The Sims 2*, death assumed a role of simple *inconvenience* because it was represented in the play as something to be expected. *The Sims 2* is a useful example in that it presents death as genuinely problematic.

Beyond the simple dichotomy of living versus dying, more complex attitudes to the valuing of well-being were present. The quality of *health* could be understood not only in terms of a measurement of how close to death the avatar was, but also in terms of access to health-promoting elements such as potions, food, armour, or recourse to the preemptive strike of combat. Similarly, notions of prosperity ranged from positioning within the simple hierarchy of weapons in *Half-Life 2* to the complex representations of relationships in *The Sims 2*.

The idea that higher level elements of gameplay, such as archery skill in *Fable* or driving ability in *Grand Theft Auto*, are tied to well-being as *health* within the game is powerful. This allows us to build up a less simplistic representation of health in gameplay, something that is affected not just by threats, but by more complex relationships connected with *prosperity* such as exercise or access to clean water. Even the most simplistic representation of health as a quantity is of interest because such metrics allow a player to consciously monitor it and to see immediately any impacts upon it.

The core message behind examining the systems of valuing well-being in these games, however, is that a significant degree of complexity is possible, culminating in the model offered by *The Sims 2*. It is not necessary to settle for “if you smoke then your character will die” as a well-being message. We can be more subtle while creating compelling gameplay, including considerations of exercise, peer support, and so on.

5.2 The Importance of Action

A critical point raised in the analysis was the centrality of *action* in the valuing of well-being. Well-being is only important as far as gameplay actions affect or are affected by it. The avatar’s health is of central concern because if it is fully depleted the player is temporarily unable to act any further. Similarly, the representation of prosperity in the form of quests completed or relationship success is important because it is the *player* who brought these things about

through their actions. In other words, any representation of well-being in a game designed for its promotion must allow the player both to influence well-being through their play, and to have it influence their play in return.

In a well-being game design, then, we must focus on creating links between actions taken and well-being. A dietary game should allow a player not just to eat better in the gameplay, but to have this diet affect their avatar's fitness and consequently their performance in an activity such as a sport. Likewise, a game promoting an environmental concern such as recycling must not only present recycling in gameplay, but also the impact of this on the gameworld in terms of its appearance, for example. Better still would be to have the results of the player's recycling affect further gameplay, such as other characters joining in because of the example set. Players' actions should affect both the gameworld and their future play in order to tie well-being to the gameplay.

5.3 Play and Progress

In connection with the primacy of action are the place of the values of *play* and *progress* relative to well-being. Progress, particularly, is of central importance in terms of improving well-being through advancement of both health and prosperity. The avatar's well-being is often *progressed* with upgrades such as a new telescope (*The Sims 2*), an extra point of "toughness" (*Fable*), or a more powerful weapon (*Half-Life 2*). Concerning play, we find that well-being is a necessary *precursor* to successful play: the avatar, specifically, must be in good shape in order to playfully experiment with the gameworld. In games such as *Grand Theft Auto* simply playing within the gameworld actually led to enhanced well-being, such as the increase of particular skills. Further, opportunities for playfulness can be important for the player as a respite from a too-consuming drive for progress. Consideration of the *player's* well-being is important to consider, and was most obviously present as a form of prosperity through *achievement*, often linking the player's well-being with well-being in the game. This is evident in the statistical tracking of progress in *Grand Theft Auto*, the increase of power of the avatar in *Fable*, or the accumulation of belongings in *The Sims 2*.

In designing a well-being game, play and progress must be accounted for. Presenting well-being as something that can be progressed appeals to a player's sense of achievement. Making free play dependent on well-being also helps to make it more appealing. In a quit-smoking game we can value progress in terms of fitness gained by quitting smoking, and play by tying fitness to access to more activities. An issue surrounding the importance of progress, whether it is progression to victory or progression of the avatar, is that it does not necessarily map well to social messages of well-being. Although it makes sense to "win" against a smoking addiction, it is less clear that "beating" depression or racism makes sense.

5.4 Opposition

Our use of concepts of opposition helped in better understanding the meaning of well-being in the games analysed. Oppositions are part of the meaning of any concept: well-being as health, for instance, makes no sense without concepts of “illness” or “death.” Most of the games analysed had relatively unsophisticated representations of *not*-health: death. In order to adequately emphasise the *importance* of well-being, its opposite must also be present and possible. Additionally, as discussed, it is when well-being in any form is *challenged* that it becomes important, prompting the player to take action to protect it. When we played *Fable* by avoiding all confrontation, for instance, well-being as health became unimportant and uninteresting.

It is clear that in well-being games there will be a temptation to portray only the positive message, to avoid challenging the avatar’s well-being, but this must be resisted. The mostly trivial nature of health in *Half-Life 2*, *Fable*, and *Grand Theft Auto* relates to its opposition, death, being relatively inconsequential in those games. Thus, in a game to quit smoking, for instance, it would be important to recognise relapses, cravings, irrational anger, and so on both as challenges to quitting and as results of “unsuccessful” gameplay. Oppositional play is an analytic tool we recommend applying to game designs to uncover what is opposed in the gameplay, and to thus gain a finer understanding of what the gameplay is *really* about (“what would happen if I just smoked a pack of cigarettes in the game now?”).

6 Summary and Future Work

In this paper we have presented the idea of considering well-being in gameplay as a kind of “economy” and have suggested some approaches to analysis. This allows us to examine games in a more informed manner, and to uncover and assess particular elements of their structure. We analysed four popular computer games to explore their representation of well-being. Finally, we drew out a design considerations from this analysis intended to assist in the development of well-being games.

There is clearly much future work to be done in this area. More refined approaches to understanding well-being in existing popular games must be developed and applied to continue to build knowledge of the “state-of-the-art.” A major aspect of computer games not discussed in this paper is *multiple players*, which surely must have a sizable impact on conceptions of well-being in gameplay. Finally, of course, persuasive well-being games must continue to be developed and played in order to understand what is and what is not successful in practice.

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