Wicked Games: On the Design of Ethical Gameplay

Miguel Sicart

Center for Computer Games Research
Rued Langgaards Vej 7

2300 Copenhagen - Denmark
+45 6165 7209
miguel@itu.dk

ABSTRACT

This paper introduces a definition of ethical gameplay as a relevant concept for understanding the moral possibilities of computer game design. Ethical gameplay is the experiential outcome of a player taking choices based on the moral evaluation of a given dilemma. This paper proposes that these type of experience should be designed as wicked problems for players.

Keywords

Ethics, game design, wicked problems, design research, design thinking

INTRODUCTION

The Oasis was a myth. I had heard about it, whispers in the lips of the dying, but I was not a believer. Until, by chance, I found it. And I found him. In the Wasteland, after the nuclear fallout, there was green. And it was Harold. Harold, a mutant, from whose body a tree grew, perpetually tying him to the ground, and at the same time making that ground fertile again.

But Harold suffered. He wanted to die. Infinite pain, every second, coming from the very branches that gave life to the Oasis. And there was I, facing a dilemma: shall I kill Harold and free him from his suffering? Or shall I medicate him, and stop the growth of the tree, relieving him at least of a grim future? Or shall I let things be, and hope that from Harold's pain nature will reemerge and save the Wasteland from itself?

I let Harold live. And after a long, long time of wandering in the Wasteland, I yet have to see green sprouts. Did I take the right choice?

What I have just narrated is my experience of a gameplay quest in *Fallout 3* [4], a post-apocalyptic computer role-playing game that lets the player incarnate an unnamed denizen in the Wasteland, the region formerly known as Washington D.C. My narrative is an attempt on illustrating why *Fallout 3* arguably presents some key cases

to understand the design of ethical gameplay for single player computer games.

The goal of this paper is to approach the problem of designing interesting game-based experiences that force users to apply ethical thinking to take decisions. This paper will approach the issue of the design of ethical gameplay using the design theory of wicked problems, arguing that game developers should focus on presenting players with ill-defined problems that require moral skills to be solved.

The challenge of including ethical reflection as a part of single-player game experiences in computer games can be traced back at least to the classic *Ultima IV* [36], which already included a reasonably nuanced value system that affected the players' progression in the story-world depending on the choices she took. From *Fable* [33] to *Heavy Rain* [37], contemporary computer games have tried to challenge the player and her capacities for taking moral decisions.

The close connection between choices and games, and the obvious relations between decision-making in games and ethical thinking have led to a certain interest in computer games as vehicles for the experience of interesting ethical dilemmas. This article explores how computer games have tried to design these dilemmas as gameplay challenges.

Single player computer games have not yet succeeded in systematizing the approach to the playful simulation of ethical thinking, or *ethical gameplay*, due to a misconception in the design approaches taken. Taking concepts from design research and ethical theories, this paper postulates that that game designers have approached morality in games as a tame problem [15], implying that it can be formalized in a puzzle-like structure that is possible to compute as algorithms. This approach has only yielded a partially successful approach, since it encapsulates the process of morality thinking in the context of gameplay dynamics [30], which are not necessarily related to the moral nature of computer game players [44].

This article argues that successful cases of ethical gameplay design can be found in contemporary single player computer games. These cases all have in common the approach to ethical dilemma design as a wicked problem [38]. In order to design successful ethical

gameplay, game designers need to approach the design of dilemmas taking into consideration that players will need to experience them as ill-defined problems. In other words: to create ethical gameplay, players need to face wicked problems, and so, in order to create ethical gameplay, game developers need to design wicked problems.

I will start my argument by briefly defining ethical gameplay in the context of single-player games, applying philosophical theories [2] [23] as well as computer game design theories [3] [41]. The goals of that section are to define what ethical gameplay is, and why it has been poorly implemented in single-player computer games to date.

The following chapters will focus on the concept of wicked problems, using Whitbeck [51], Dorst and Royakkers [19] and van de Poel [49] as references that connect design thinking and moral practices. The goal of that section is to anchor the notion of ethical gameplay in the tradition of design research and wicked problems.

Finally, I will propose an approach to ethical dilemma design for computer games based on the concept of wicked problems. I will propose that game designers should try to create wicked problems, letting players experience the ill-defined nature of these moral dilemmas by manipulating gameplay expectations, as well as narrative and gameworld design tropes.

My method is based on the critical analysis of existing computer games using the terminology of ethics and design research. The games selected for analysis are commercial titles developed for profit and entertainment, and thus the relevance of this article for educational games designers may be questionable. This analysis is based on my individual experience as a player, a method usually recognized as a fruitful approach in game studies [1]. However, this strong authorial voice should also serve as a caveat: since not all players will experience ethical dilemmas in a similar way, what I am proposing in this article should be read as a descriptive and inspirational account rather than a prescriptive one. By focusing on the reflective analysis of the relations between particular ethical experiences and observations on the design of the game, the method applied in this paper allows for the establishment of correlations between design choices and player experiences. The task of empirically evaluating both the correlations and the design approach argued for in this article will be left for future work.

The careful reader may still wonder what is at stake in the design of ethical gameplay. If games are mere entertainment, why should we try to understand their moral capacities? My answer, understood as the driving force behind this article, is that at stake is not the possibility of moralistic games, not even the possibility of morally relevant computer games. What is at stake is both a deeper understanding of the design possibilities for computer games as a form of cultural expression, and a reflection on the role of ethics in our leisure experiences. Or, in other words, at stake is the understanding the morality of play, starting from its design into games.

DEFINING ETHICAL GAMEPLAY

I started this paper with a short narrative describing my experience of the "Oasis" quest in *Fallout 3*. I categorized this as an ethical gameplay example, an illustration of the potential of games for creating moral experiences. However, I played a rhetorical trick - I argued that *Fallout 3* succeeds at creating ethical gameplay, but I have not defined what I mean by gameplay. In this section I will define ethical gameplay and give a number of characteristics that will help us both understand what type of experience it is, and how to determine if it is successful.

The first step, however, is to clarify what we mean by gameplay. In game design theory, a number of concepts are used liberally without much definitional work. While this lack of formal definitions allows for an implicit understanding of what we are talking about when designing games, it also creates a number of problems when the goal is to create rigorous game design theory. In short: we can identify gameplay, but we don't know what it is. It is my intention to propose a solution to this paradox.

On Gameplay

In *XXI Century Game Design* [3], Chris Bateman and Richard Boon define gameplay as "performance oriented stimulation" (p. 27), a definition based on their ontological distinction between toys, "tools[s] for entertainment" (*ibid*), and games, "a toy with some degree of performance" (*ibid*). Bateman and Boon relate gameplay to evaluation methods: games have an endstate in which player performance is evaluated with rule-based criteria. For example, *Bioshock* [28] outputs different endings depending on choices taken during gameplay.

Another approach is Salen and Zimmerman's [41] definition of gameplay as "a form of play […] a narrow category of activity that only applies to what we defined already as 'games'. Game play is the formalized interaction that occurs when players follow the rules of a game and experience its system through play" (p. 303). Gameplay would then be a subset of an activity, play, understood as "free movement within a more rigid structure" (*ibid*, p. 304), and focused on the direct relation of the player with a game system. This definition recalls Bernard Suits' definition of playing a game as the "attempt to achieve a specific state of affairs [prelusory goal], using only means permitted by rules [lusory means], where the rules prohibit use of more efficient in favour of less efficient means [constitutive rules], and where the rules are accepted just because they make possible such activity [lusory attitude]" [47] (pp. 54-55). The term play is used here then as the experience of a game, being a game a condition for a type of play, gameplay, based on the formal properties of games, such as goals and challenges.

Jesper Juul points at the origins of gameplay as a

related to the experience of the game system by a player: "gameplay therefore results from the interaction between three different things: 1) The rules of the game. 2) The player(s)' pursuit of the goal. The player seeks strategies that work due to the emergent properties of the game. 3) The player's competence and repertoire of strategies and playing methods" [29] (pp. 90-91). These perspectives indicate that at gameplay is the consequence of a player interacting with a game system with a formal structure designed to reward and constraint player behavior.

These definitions of gameplay fail in taking into account two elements of the actual experience of a computer game: the nature of players beyond their relation to the game system, and the relations between player agency and game rules. Players are seen as mere input providers, focused on optimization and the creation of strategies, disregarding the fact that gameplay includes the elements of interaction with those formal properties of the game that are not oriented towards achieving the goals.

The experience of gameplay goes beyond the game system – aesthetics elements can be of extreme relevance when experiencing a game. In *Defcon* [27], the sound design cues players to think about a claustrophobic, underground facility, providing subtle information about how the game is supposed to be experienced.

Gameplay is, then, related with the formal properties of games, and connected with the goals. Yet, gameplay also defines elements of the player experience and agency. Gameplay can then be defined as a ludic experience regulated by game rules, mediated by game mechanics, and oriented to the satisfactory achievement of goals predetermined by the game and agreed upon by players.

With ludic experience I am referring to the phenomenological process of interacting with a game system that creates a particular response in its users, a response it has been designed for [44]. Any act of playing a game is a ludic experience, but also interacting with toys or those cases of physical activities that produce what Caillois defined as *Ilinx* [11] (pp. 12, 23-24 and 3). Experience should be read in terms of Gadamer's use of *Erfahrung*, or true experience: "the work of art has its true being in the fact that it becomes an experience that changes the person who experiences it" [23] (p. 103). Games as objects create these types of experiences by means of their formal properties, but also by the willingness of players to engage with the constraints to their agency suggested by the game system.

Play is the general term for a ludic experience, that is then particularized into different modes, such as gameplay or toyplay. Games constraint play into gameplay by means of their formal properties: rules and game mechanics, which constitute the game system. Rules are, in terms of Suits, "proscriptions of certain means useful in achieving prelusory goals*"* [47] (p. 51). Gameplay is goal oriented: it is useful to describe the ludic experience in terms of goals defined by the game system. If these goals were suggested by the player, or by other players, we would have toyplay, a ludic experience with goals external to the game system. There are more goals in a game than those that lead to the endstate. Some of those goals may be secondary. For example, the tape recorders that contain fragments of narratives in *Bioshock* are not central to winning the game, yet the act of collecting all of them is rewarded by the system with the unlocking of one of the achievements. This is a goal unnecessary to reach the end of the game, yet a part of the ludic experience, and as such it is gameplay.

This definition of gameplay can be used to analyze some of the principles that pattern the interaction with games - it covers player interaction, system properties, and goal-oriented designs. However, this definition of gameplay only covers the formal aspects of gameplay as a notion, and in order to understand morality, being a part of a human experience, we need to take a different, complementary direction. Let's try to understand ethical gameplay.

On Ethical Gameplay

We have all seen them: compulsive clickers, focused man-machine hybrids that sit in corners of netcafes or on the bright spots of professional games tournaments, exclusively focused on performing gameplay as perfectly and flawlessly as possible. And we have also read their works, treatises on strategies and optimal paths and decisions. Players they are, but also *gamers*, focused on the flow of play, on exploring games as an *instrument* of leisure.

A common argument when thinking about the potential of (game)play and computer games is how these games can be used to teach, train and educate thanks to their procedural structure [6] [7]. Because games are systems, they are fairly efficient at simulating processes, and thanks to their reward structures that allow players to engage in predetermined behaviors in search of goals, games are supposed to teach their users about the workings of systems, as much as how to operate systems, from tanks to the stock market.

From a more philosophical perspective, what this perspective illustrates is how games are particularly good at fostering instrumental rationality [25] [26], the type of practical rationality that encourages rational behavior towards predefined, desirable goals. However, play is not a fully instrumentally rational behavior, as Heide Smith [46] showed in his study of cooperative and competitive multiplayer games. When inserted in social environments, humans can play in non-instrumental ways, in order to, for example, preserve the experience of the well-played game.

However, it is true that games are often designed to encourage instrumental play, even in the case of games with branching structures. Many players, when facing situation in which they are forced to take a decision that

will branch out the narrative and limit their possibility space, will save, so other options can be explored in the future. Play, specially single player computer game play, is also about exploration.

This instrumental approach may seem at odds with moral experiences. Ethical experiences in the shape or dilemmas are often presented as situations with an irreversible outcome that depends on a decision taken by an agent. Interesting dilemmas are those that have no clearly *best* solution, but that force the agent to chose between two undesired outcomes.

In computer games, though, dilemmas are often tailored to illustrate the different "moral paths" that a player can follow. For instance, in the *Star Wars* world of *Knights of the Old Republic*, dilemmas are presented as illustrations of what the Dark Side and the Light Side embody, with some space for more "neutral" options provided the player does not want to follow any of the pseudo-religious paths determined by the game's mythology. If the player consistently takes one of the paths, they will explore the game's world and narrative from the perspective of one of those moral positions. I will analyze this design in depth in later stages of this article.

The dilemma-based structures do not guarantee deep ethical thinking. In fact, they do not force players outside of the behavioral patterns of instrumental rationality. What most players do, when facing these type of dilemma-driven games, is to conveniently make saves of the game state that will allow them to easily reload the sequence, take another choice, and explore another "ethical path". Giving choices to players does not necessarily break instrumental rationality, as the save/reload systems operate against the intuition that a choice, to be morally relevant, has to be definitive.

In other words: because of the informational structure of computer games, dilemmas as usually presented to players are not a valid way of creating ethical gameplay, at least not if a designer follows the save/reload conventions. A player will learn how to operate the choice system, and how to *game* it - how to relate to it with her instrumental rationality, and not with her moral faculties. How to create ethical gameplay, then?

Perhaps it is time now to formulate what ethical gameplay means. Ethical gameplay is the outcome of a game sequence in which players take definitive choices based on moral thinking, rather than instrumental thinking. Ethical gameplay is, in other words, the outcome of moral play.

This definition leaves out some other instances of play that are valuable for ethical analyses, and practice. For example, play as an agent for ethical illustration, as used in games in educational settings in which players may not have choices, but ought to learn from their experience valuable ethical arguments. Another instance of ethics and gameplay this paper is not touching upon is related with the unethical content of games, or the morality of playing violent, sexist or racist-themed games.

While these are interesting examples of the relation between ethics and play, in order to get an understanding of how specific game design choices affect the ethics of a particular ludic experience, it is crucial to analyze how players are afforded ethical agency in a game. Therefore, the definition of ethical gameplay here suggested provides deeper insights on the morality of play, since it is focused on the agency of the player as connected to the design of the object.

Ethical gameplay is incompatible with instrumental rationality, that is, with instrumental play. Instrumental play tries to optimize either the results of the game experience as quantified by the game system (goals, challenges), or the results of the social aspects of the game experience, such as the so-called "well-played game" [31]. Instrumental play is a continuum, an process in which concepts like immersion [12] [13] and flow [18] are applicable.

Ethical gameplay is, on the other hand, a pause. A caesura in the act of play. A hesitation. A moment in which the player is not anymore using social or strategic thinking to engage with the game. Instead, the pause forces the player to apply another type of wisdom, an applied ethical thinking or *ludic phronesis* [44].

Ludic phronesis is defined, following Aristotle's original concept of *phronesis* [2], as the practical wisdom that illuminates decision-making processes based on moral arguments in the context of game experiences. Given the constructionist aspect of Virtue Ethics, too, any use of *phronesis* means evolving and maturing as a human being, in a process of reaching towards the best life.

It is precisely that search for *eudaimonia* [2] that separates conventional decision making from *ludic phronesis*. If there was no aspiration of fulfilling our potential as human beings, any decision in a game that involved ethical thinking could be tackled using *ludic phronesis*, even in those situations in which reloading is possible. However, I argue that this constructivist *phronesis* can only lead to fulfilling our potential if we follow the decision to its consequences. Otherwise, we are not fulfilling our potential, but merely *toying* around with cause and effect.

For *ludic phronesis* to take place, the player has to be morally invested in the decisions taken, and there has to be a clear, deep reflection on what the choices are and what do they mean. *Ludic phronesis* does not only affect the moment of choice, but the general sequence and meaning of play after that choice. It constitutes who we are as players of a game. And given these requirements, it also breaks the loop of instrumental play, forcing the player to pause and use ethical thinking to take a choice.

If ethical gameplay is a moment of pause, a hesitation in play - how can we design for it in a meaningful way?

How can we make interesting games that force the player out of the play loop for a reflective caesura, yet still entice them to keep on playing? Ethical gameplay invokes a certain disruption of instrumental gameplay, a move against immersion towards critical reflection on the very act of play. Playing a game often brings players towards a state of deep engagement. Ethical gameplay means an active pause of that depth in order to engage with experiential and rational processes that are grounded on moral thinking.

These are the challenges of ethical gameplay design, and in the following sections I will argue that a potential framework for solving this issue can be derived from understanding the design of ethical dilemmas in games as wicked problems.

MORALITY AND WICKED PROBLEMS

In the field of design research, wicked problems is a central topic. Since its original formulation in 1973 by Rittel and Webber, as a response to Simon's positivist design theories [45], wicked (or ill-defined) problems have been often referred to and discussed in the context of design theory, urban planning, business management and strategy, and design thinking and cognition [9] [50].

In their original formulation, wicked problems define a type of challenge designers face in their practices. A wicked problem is defined as "a class of social system problems which are ill-formulated, where the information is confusing, where there are many clients and decision makers with conflicting values, and where the ramifications in the whole system are thoroughly confusing" [9] (p. 15). This definition has been extended to define all types of problems: "In fact all problems have the character of wicked problems, even maths problems or simple puzzles. This response effectively dissolves the distinction between tame and wicked problems. The fact that there is a socially-decided 'solution,' some neatly defined (socially-decided) legal moves, and a certain system of causalities to a simple 'problem' such as the Tower of Hanoi puzzle, is incidental to the entire context of motivations, commitments, and proclivities by which this portion of rods and coloured disks is partitioned out from the rest of our worldly experience as a game worthy of playing, by the rules. In other contexts the bits of wood or plastic are an irrelevance." [15] (p. 8).

The concept of wicked problems is also interesting for the understanding of ethics and design. The analogies between ethical thinking and design thinking are not new. The most interesting connection between ethical thinking and design thinking was put forward by Whitbeck [51].

In her work, Whitbeck establishes an analogy between ethical thinking and design thinking through the analysis of ethical problems and the different ways agents have of approaching and solving them. Whitbeck's thesis is clear: ethical problems are practical problems, and therefore "the similarities between ethical problems and

another class of practical problems, design problems, are instructive for thinking about the resolution of ethical problems and correcting some common fallacies about ethical problems" (54).

What Whitbeck names as "problems" is analogous to what ethical theory has defined as dilemmas, or situations in which moral thinking is needed in order to decide between different choices. The dilemmas she is referring to are those used to illustrate either different ethical theories, or particular situations that demand ethical thinking. These dilemmas are often reductionist in nature, and their philosophical depth is limited by the fact that the dilemma is already designed with a set of answers in mind: "The view that ethical problems have unique correct solutions is more plausible if one starts from the assumption that possible responses to ethical problems are determined in advance and fairly evident. That would make ethical problems multiple-choice problems" (57).

However, Whitbeck sucessfully argues that ethical problems, like design problems, seldom are reductionist in nature. In fact, the very process of ethical thinking, and of design thinking, is a mode of reducing the scope of the problem so an plausible solution can be found: "Practical problems may or may not have solutions. (...) some call for coping rather than for solution (...) both ethical problems that call for solution and those that call for coping have their counterpart in design problems though good ways of coping are also called 'solutions' in the case of design problems" (54).

What Whitbeck calls "practical problems" are, in the context of this paper, ill-defined or wicked problems. Because both ethical problems and design problems are similar in their ill-defined nature, ethical thinking can learn something from engineering design thinking. Or, in other words, the "designerly way of knowing" [16] [17] is parallel and analogous to ethical thinking.

Design research has described the type of problems they face as wicked problems, which can basically be described as problems that can only be delimited and described by applying design thinking. Wicked problems, as interpreted in this paper are structured around imperfect information and a network of outcomes that make the consequence of decisions difficult to predict. Much like problems of moral nature, wicked problems require a particular type of thinking, design thinking, in order to approach the problem and suggest a number of solutions. Wicked problems and ethical problems are similar in nature, and therefore ethical thinking and design thinking, at least when approaching these types of problems, have a number of common traits.

Wicked problems and morality are then analogous both in nature and in the type of practices they demand. But how does this relate to the design of ethical gameplay?

A SERIES OF INTERESTING? CHOICES?

One of the most legendary game designers, Sid Meier, creator of the *Civilization* series, once defined games as "a series of interesting choices" [39]. Meier's argument is that, for players to be engaged in the game, they have to be presented with choices they feel emotionally attached to [29]. These choices must have a number of characteristics: they must not be equally good, they player must have enough information to take an informed choice, and no single choice should be best. In Meier's opinion, good games present these characteristics in the design of the choices presented to players.

The general principles behind this ideas have become common lore in game design theory. Most game design texts, from the few academically oriented ones [3] [30] [41] to those closer to textbook rhetoric [22] [39] [40], advocate for a type of game design that follows these maxims. In fact, the focus on providing players with sufficient information to take a choice has become a design mantra. Players should always take informed choices, therefore players should always have perfect information about the consequences and motivations for their choices.

In terms of creating ethical gameplay, this player-centric design [22] has been translated to a particularly dominant trend in the design of ethical dilemmas. Even though ethical dilemmas have been present in single player computer games since *Ultima IV*, players are still facing the same type of gameplay structures: given a particular situation, a player is forced to take a decision that will branch either the narrative or the gameworld state accordingly to the choice taken. Let's look at an example:

In the aforementioned *Knights of the Old Republic*, players are given the opportunity of exploring the mythological world of the *Star Wars* franchise via a role-playing game in which their actions and choices affect the evolution of the story and the relations between characters. One of the main gameplay mechanics of the game consists on taking choices according to the moral compass of the Star Wars universe. The player can either explore the light or the dark side of the force, depending on the choices taken.

These choices are often presented in dialogue trees with multiple choices. Given the nature of the Star Wars moral universe, it is often clear what choice makes the player follow the dark side, and which choice makes her follow the light path. More so, the game has a user interface element, a screen in the menu system, entirely dedicated to providing feedback to the moral status of the player. In this sense, both by the nature of the choices offered to the player and the abundant information about the players' current moral status in the game, *Knights of the Old Republic* does not so much explore the moral universe of Star Wars as provide a safe interactive multiple choice test of the players' knowledge and intuitions regarding the difference between good and evil.

In fact, *Knights of the Old Republic* does not encourage players to use moral thinking, but a simulacrum of it. Players do not need to think ethically about their choices, but strategically: they have enough information both before the choice and after any dilemma, and it's only a matter of deciding which narrative path to explore. Given the definition of ethical gameplay previously proposed, *Knights of the Old Republic* fails at engaging the players in ethical thinking as part of their gameplay experience.

Like *Knights of the Old Republic*, most single player computer games that tout their morality-based gameplay are based on multiple-choice decision trees in which players, due to the amount of information regarding game state and consequences, only have to think strategically, not morally. Examples range from *Fable* to *Bioshock* - they all have in common the multiple-choice design of moral choices.

From a design perspective, what all these games have in common is the creation of tame problems, of algorithmic, binary state machines that are wrapped in basic moral dilemmas. In Whitbeck's terms, "the view that ethical problems have unique correct solutions is more plausible if one starts from the assumption that possible responses to ethical problems are determined in advance and fairly evident. That would make ethical problems multiple-choice problems" (57). And, of course, this approach does need to engage a moral agent.

The main issue with the current state-of-the-art ethical gameplay design is its characterization of the moral agent as a mere input provider. The moral agent is too well-informed about the state of the game, and problems are not perceived as moral problems, but as mere gameplay challenges, strategic decisions that affect what branch of the game narrative will be explored, and when.

What game design needs is to rethink the nature of the player as moral agent, and how to provide her with interesting choices that do not necessarily abide to Sid Meier's definition. In Whitbeck's words, "for the agent facing an ethical problem, not only are the possible responses undefined, but the nature of the problem situation itself is often ambiguous" (72). How to create this ethical dilemmas? By making players face wicked problems as part of their moral gameplay.

WICKED PROBLEMS AND THE DESIGN OF ETHICAL GAMEPLAY

I started this paper by accounting for my experience of the "Oasis" quest in *Fallout 3*. I chose this starting point since my experience of this quest was not only an illustration of what I believe is the potential of games for addressing the complexities of moral thinking, but also an example of how game design can be purposefully used to create ethical experience. How does *Fallout 3* succeed?

"Oasis" succeeded by making me face a dilemma in which the stakes were high, and I did not have enough information about the potential outcomes of my decisions. Let me briefly present my experience of another quest from the game. When players discover the Tempenny Tower location in the gameworld, they are presented with a building in which the dream of a time past is preserved. Thanks to a zealous policy against ghouls (the mutant inhabitants of the gameworld), the dominant cast in Tempenny Tower keeps their human population happy but scared, preventing any riot by demonizing the ghouls as the enemy at the gates. However, ghouls are presented throughout the game as mostly pacific inhabitants of the gameworld. The player is then presented with a dilemma.: she can either help eliminate all ghouls in the proximity of Tempenny Tower, or help the ghouls eliminate the humans, or broke a peace agreement between both. To an external observer the latter resolution to the dilemma is the most ethical. However, players who take that choice will discover, if they decide to return to the Tower, that ghouls have exterminated all humans.

The Tempenny Tower quest shows how ethical gameplay can be implemented in computer games. Players are presented with a dilemma that requires ethical thinking. Even though there are some marginal benefits from both supporting humans or ghouls, strategically speaking supporting any of both factions provides roughly equal rewards, so instrumental play will not necessarily be the reason why a decision is taken. In fact, players have insufficient information regarding the morality and outcomes of their choices, and therefore their only compass will be their own morality. And that is because, for players, the Tempenny Tower quest is a wicked problem.

The reason why *Fallout 3* succeeds at creating a compelling set of ethically relevant quests is the way these are designed and presented to players. Even though there is a menu in the game that quantifies the moral standing of the player, by means of the so-called *karma points*, in many instances of the game, players are presented with situations in which this pre-existing moral system does not provide any indication as to what choice to take. In other words, there is no game-based ethical system that guides the player towards taking a moral decision. Hence, it is the player's values that should guide how dilemmas are resolved.

In *Fallout 3*, ethical dilemmas are presented as ill-defined problems: players have some information, but not enough, to take informed choices. Given the complexity of the narrative and the way the gameworld is structured around a number of emergent behaviors, players can predict to a limited extent the outcome of their decisions. And, enve though there is an external moral evaluation system in place, its rules are sufficiently obscure, and tied to the lack of perfect information for the player, that it is not always possible to use that system as a reference for taking decisions.

As opposed to games like *Knights of the Old Republic*, in which players not only could predict the outcome of their decisions based on the externally imposed moral system, in *Fallout 3* morality is not an issue of multiple choice tests, at least not in those quests that are successfully designed as wicked problems. The most important outcome of these quests is not the use of wicked problems as design principles, but the fact that players are placed at the center of the design of ethical gameplay.

If we reflect about the position of the player in *Knights of the Old Republic*, we could argue that the degree of ethical agency afforded by the system is small. There are values, but these are hardcoded in the game system. The player has no possibility for developing her own values and acting according to them. Of course, this argument presupposes a constructivist ethics approach [10], but given the fact that some relevant work on the philosophy and ethics of computing adopts this perspective [8], it seems appropriate to evaluate computer games from a constructivist perspective.

This critique is analogous to that Whitbeck elaborated when reflecting about the ways in which design thinking contributes to ethical theory: "art of the explanation for the misunderstanding and misrepresentation of ethical problems is that most of recent ethics and applied ethics have neglected the perspective of the moral agent. Instead, ethics has exclusively emphasized the perspective of the judge of that of a disengaged critic who views the problem from 'nowhere' and treats it as a 'math problem with human beings'. For the agent facing an ethical problem, not only are the possible responses undefined, but the nature of the problem situation itself is often ambiguous (...) " (72).

In *Fallout 3*, like in any game that succeeds in creating ethical gameplay, the player is responsible for her choices, as well as for her development as a moral agent. It is the player who interprets, accepts and acts upon the values of the gameworld, and even if the game system quantizes the output of her actions, it is still her values that are in play and at stake, not those of the games design.

Fallout 3, like other games similarly successful in creating ethical gameplay, like *Heavy Rain*, *The Witcher* [14], or *S.T.A.L.K.E.R. Call of Pripyat*, illustrates how ethical gameplay requires addressing a moral agent. This moral agent needs to be challenged with a type of dilemma that diverges from those often created by computer games. If games excel at providing the type of tame problems in which solutions are only undesirable if they harm the chances of the player successfully completing her goals, ethical gameplay should create dilemmas that challenge both the players' values and the convetional notions of challenge design in games.

In other words, the design of ethical gameplay consists of making players face wicked problems. The very nature of ill-defined problems invoke a type of thinking close to moral reflection. Game designers should take

advantage of that proximity, and create game challenges that are based in imperfect information, lack of a certain moral compass, and unpredictable outcomes.

Of course, the design of wicked problems for ethical gameplay clashes with some fundamental elements of games, some of which are at the very core of computer games' nature. Also, there are some tensions between the design of ethical gameplay and some well-consolidated game design practices. For example, games are always solvable. Unlike moral problems, games are attractive because they are encapsulated systems that provide a resolution to the action. Most games require closed decision trees, and therefore some of the original characteristics of wicked problems are not applicable to computer game design. However, as Coyne has argued, it is possible to consider all problems as ill-defined. And while games have so far very much focused on making reduced versions of wickedness, or puzzle variations of ill-definition, the potential of computers to implement and keep track of a inhumanly large number of states allows us to think that it is possible, in the context of digital gaming, to have ill-defined dilemmas of greater complexity, and moral depth, than just puzzles.

However, the design of wicked problems will face an even bigger challenge in the context of game design: reloading. As said, computers excel at preserving in memory a large number of states. The problem is that games are often designed to allow players to save a particular state, test a solution to a problem and, in case of an unsatisfactory outcome, reload to the previous state. This reversibility of events may be considered an obstacle in the exploration of ethical gameplay by games. If a player knows, when facing a dilemma, that while the results are unpredictable, she can always return to a previous state, then the depth of moral thinking is questioned.

Given the fact that wicked problems are a good solution for designing ethical gameplay, the design of the saving systems should also be a part of the creation of ill-defined ethical dilemmas in games. Or, in other words, it is not enough with creating challenges for players based on wicked problems' characteristics. Designers will also need to address the computational nature of the system, and the ways states are saved and accessed by the player. Ill-defined problems, then, are not only defined by their semantic level [43], but also by how the system of rules they are built within is designed. Wicked problems for (computer) game design, then, are not just representations of morally challenging situations; they are also embedded in the very design of the computer program or the system of rules.

In design research, ill-defined problems is a descriptive concept. But, for the design of ethical gameplay, it is a prescriptive one: dilemmas should be designed as wicked problems towards players. This leads to the suggestion of a re-interpretation of Rittel and Webber's ten characteristics of wicked problems, only this time not as descriptions but as design inspirations (the original formulations can be found on the footnotes). The following ten points are thought to encourage game designers to formalize dilemmas as wicked problems. It is not a to-do list, but a source of inspiration, a challenge for those who may dare exploring complex moral dilemmas through computer games. The decalogue goes as follows:

1. There is no definitive formulation of the dilemma[1]. The player's knowledge of possible outcomes will be limited by ethical cognitive dissonance between the semiotic and the procedural domains. The player shall not have perfect information about the potential outcome of a dilemma. The *Fallout 3* quests "Tempenny Tower" and "Oasis" present these characteristics.

2. Ethical gameplay dilemmas have consequences that cannot be predicted by only understanding the procedural level of the game[2]. Knowing how the system works will not be enough to take a decision, as there will be aspects of the system unknown to the player that affect the outcome. This can be achieved by, for example, embedding the dilemma in a highly emergent system in which the outcome is the consequence of the interplay of rules that cannot be easily predicted by the player.

3. Solutions to ethical dilemmas are good-or-bad, not correct-or-false[3]. Hence the evaluation of the outcome by the game system will not be communicated to the player in quantized terms. In other words, thou shall not use karma systems in your games.

4. There is no testing of solutions for ethical dilemmas: once the player takes a choice, reloading to a prior state to that choice is not possible. Permadeath is an option[4].

5. Every solution to an ethical gameplay dilemma locks the game in a new state of the game, without being able to return to prior states. All decisions *matter*[5].

6. Ethical gameplay dilemmas have a number of solutions that make the procedural and the semantic levels collide, suggesting non-optimal strategies that have semiotic value. Some non-optimal game decisions will be communicated by means of gameplay metaphors that are appealing to the player[6].

[1] "There is no definitive formulation of a wicked problem" [38], p. 161.

[2] "Wicked problems have no stopping rule" [38], p. 162.

[3] "Solutions to wicked problems are not true-or-false, but good-or-bad" [38], p. 162.

[4] "There is no immediate and no ultimate test of a solution to a wicked problem" [38], p. 163.

[5] "Every solution to a wicked problem is a 'one-shot operation'; because there is no opportunity to learn by trial-and-error, every attempt counts significantly" [38], p. 163.

[6] "Wicked problems do not have an enumerable (or

7. Ethical gameplay dilemmas will tend to be unique[7]. A dilemma's structure should not be repeated throughout one game.

8. Ethical gameplay dilemmas reveal the moral nature of the semiotic and procedural domain of the game[8]. Dilemmas are a way of affording the values designers wanted to communicate with the game.

9. There is no "correct" solution to an ethical gameplay dilemma[9]. It will be the player who will have to evaluate the morality of her choice.

10. The player has no right to replay[10]. The decision taken by the player will bound her to the chosen path, and the game, in the state determined by the choice taken, will *only be playable once*.

THE FUTURE OF ETHICAL GAMEPLAY DESIGN

In this article ethical gameplay has been defined as those experiences in games in which players have to use their moral reflection skills in order to overcome a challenge. Given this definition, what designers need to focus on is creating challenges that encourage moral agency. The concept of wicked problems provides insights in how to create these types of experiences. Since ethical thinking and design thinking share a number of common traits, a game designer can face the design of ethical gameplay as the design of a wicked problem of moral nature.

In fact, this is the core argument of this article: in order to design ethical experiences for games, game developers have to create ill-defined problems for players. These problems, even though computable and inscribed within the rules of the game, force players to apply moral thinking to their decision making processes, thereby creating ethical gameplay.

This article was intended to be a first step towards understanding ethical gameplay design in computer games. There are, though, a number of issues not covered in this article. First of all, for ethical gameplay to be fully defined, it needs to be incardinated within an ethical theory. If ethical gameplay means engaging with a game using moral thinking, and the design of ethical

gameplay involves making the player face wicked problems, which ethical theories are applicable to the understanding of these phenomena?

As it was hinted in the previous section, constructivist ethics are a currently popular approach to understanding the relations between morality and computation [8] [10] [20]However, given that this article has argued that in order to design a wicked problem for games, the computational (or procedural) aspect of the game needs to be addressed, a theory that encompasses both morality and the way systems operate is needed.

Therefore, future expansions of this work will expand the concept of ethical gameplay by relating in the method of Information Ethics [21]. Future research on the design of ethical gameplay will lead to a formulation of an informational theory of design. This theory will be based on the Method of Abstraction, and will provide a cohesive framework for understanding how procedural information systems are designed for agents, human or artificial, that not only deserve moral respect, but also ought to be allowed to produce, to develop moral values as well as content. This theory will also address issues on the responsibility of designers, consciously ignored in this paper.

Ethical gameplay and its design opens a door to the research on how design practices can afford moral experiences in users. Computer games are the perfect environment for exploring these issues, given their digital nature, their computational and semantic structures, and their popularity. And also, for those invested in arguing for the possibility of games as a mature medium, ethical gameplay is an argument for considering video games, at last, a mature form of cultural expression, one that can explore not only leisure, but also the complexities of the human condition.

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exhaustively describable) set of potential solutions, nor is there a well-described set of permissible operations that may be incorporated into the plan" [38], p. 164.

[7] "Every wicked problem is essentially unique" [38], p. 164.

[8] "Every wicked problem can be considered a symptom of another problem" [38], p. 165.

[9] "The existence of a discrepancy representing a wicked problem can be explained in numerous ways. The choice of explanation determines the nature of the problem's resolution" [38], p. 166.

[10] "The planner has no right to be wrong" [38], p. 166.

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