Categorizing Morality Systems Through the Lens of Fallout

Joan Casas-Roma

The Metamakers Institute
Falmouth University, Cornwall, UK
joan.casasroma@falmouth.ac.uk

Joan Arnedo-Moreno

Estudis d'Informàtica, Multimedia i Telecomunicació
Universitat Oberta de Catalunya, Barcelona, SP
jarnedo@uoc.edu

ABSTRACT

Morality systems in computer role-playing games (CRPGs) are a characteristic feature of the genre. Although there is plenty of literature studying how players relate to moral choices, only a few studies analyze or compare how specific games represent the player's moral persona. This paper studies how morality systems have been modeled in the Fallout series to keep track of the player's moral profile, categorizing the different techniques used in those systems. A special emphasis is put on how in-game actions affect the PC's moral alignment, as well as how non-player characters (NPCs) react to that beyond the game's scripted narrative. The goal is to provide guidelines that would lead to the development of more comprehensive and detailed morality systems, and where the player could immerse in a virtual world where the NPCs would act more as individual agents, with less reliance on explicitly scripted scenarios.

Keywords

videogames, morality systems, moral judgement, Fallout, NPCs, karma, agents, categorization

INTRODUCTION

Video games allow players to take active part in a story and, sometimes, to make all sort of choices on how to enact it. Some of those choices, specially in computer role-playing games (CRPG), have a clear moral dimension that, in turn, reflect on the way the player character (PC) is seen by the non-player characters (NPCs) inhabiting the game's world. Even though there are studies on the relationship between video games and morality, most of these works focus on understanding how the human behind the player character engages in the moral dimension of such choices and how video games may become suitable platforms for genuine moral reflection.

Works such as (Schulzke 2009), (Sicart 2013) or (Zagal 2009) argue that this is the case (the first two mentioning Fallout as the paradigmatic example), while other works, such as (Heron and Belford 2014) or (Švelch 2010), challenge that claim and argue that moral reflection requires an emotional connection in order to be genuine, regardless of how the video game accounts for a morality system. With respect to how games keep track of moral choices, (Hayse 2010) claims that explicit morality systems are not suitable for engaging in genuine moral reflection. Other works explore the social dimension that the virtual worlds from these video games depict, and focus on topics such as law and power through moral choices, as in (Barnett and Sharp 2015).

Nevertheless, video games are seldom looked at as complex virtual worlds able to account and keep track of the moral persona that the player builds through in-game actions, and which affect the way the video game world and its inhabitants react to the player character. Regarding the notion of virtual worlds, (Champion 2009) explores their social dimension and argues how it could be improved using different techniques, and (Russell 2006) provides details on the creation of the player's social person in a virtual world.

Through an analysis of the morality systems implemented in the Fallout series of CRPGs, a highly lauded franchise often mentioned in the academic literature on this topic, this paper proposes a categorization of the different techniques that are used in order to account for the PC's moral persona. Unlike other works in the academic literature, we move our focus from the players' experience and the way players behave towards moral decisions, to the way the game actually accounts for the moral weight of those decisions; furthermore, we also focus on understanding how these moral weights affect the way NPCs behave towards the PC. Even though (Heron and Belford 2014) examines some of the techniques used in video games' morality systems, it still focuses on the players' experience behind them.

Even though, and specially in the field of ethics and moral philosophy, the term "morality" can be defined in different ways (Gert and Gert 2017), such term will be used to refer to the sets of rules, actions and consequences that are taken into account by a game's morality system. The rightness or wrongness that specific in-game actions would have with respect to what certain ethical theories define to be moral is not analyzed, but a descriptive account about what the analyzed games *recognize* as morally-relevant actions are provided, as well as how the moral weight of those affect the moral persona of the PC. On that regard, morality systems in CRPGs often overlap with the notions of *reputation*, or even *loyalty*. In that respect, we are interested in reputation as long as it is affected by actions that can be qualified as moral by the game itself or NPCs. Therefore, when some mechanics are aimed to affect reputation, but do not have a moral dimension, they may be acknowledged, but will not be taken into account in the analysis.

This paper is structured as follows. In Section *What is Fallout?*, the Fallout series of computer role-playing games, its themes and defining features, are introduced. Its relevance as a subject of study in morality is also discussed by means of a literature review of academic papers that are based on Fallout games. Section *Morality Systems in the Fallout Series* consists of a thorough analysis of how morality systems are deployed, and how they have changed and evolved, through the main titles in the series of Fallout CRPG series. As a direct result of this analysis, and as the main contribution of this paper, a categorization

of the different techniques used in morality systems is presented in Section *Categorization of Morality Mechanisms*, together with a proposed new morality system that combines the most relevant features of each of the analyzed Fallout games. Finally, Section *Conclusions* concludes this paper and discusses further work.

WHAT IS FALLOUT?

Fallout is a long-standing video game franchise started in 1997 by Black Isle Studios, a division of Interplay Entertainment, and later continued by Bethesda Softworks, from 2004 to this date. The name is mostly used to refer to its main series of CRPGs, even though some spin-offs in other genres also exist: a tactical squad-based RPG (Fallout Tactics, 2001), a console-based action one (Fallout: Brotherhood of Steel, 2005), a construction management and simulation game (Fallout Shelter, 2015), or even a pinball game (Fallout Pinball, 2016). Whenever the Fallout series is mentioned in this paper, it will be to refer only to the main canon CRPG line, composed of Fallout (1997), Fallout 2 (1998), Fallout 3 (2005), Fallout: New Vegas (2010) and Fallout 4 (2015). Another game, Fallout 76, was published in 2018, but, given its main multiplayer nature, with no NPCs at all, it will not be considered in this paper as part of the main line.

The Fallout universe is set in an alternate post-apocalyptic future where a nuclear war (the Great War) between the United States and China has destroyed most of the world, leaving just a ruined landscape. However, even though the war erupts in 2077 and technology has greatly advanced (e.g. robotics, energy weapons), at that moment, the world was still locked in a retro/1950's aesthetic. After the war, and reminiscent to the Mad Max movie series (Miller 1979), the planet has been turned into a barren wasteland where survivors have formed different communities that live in the remains of old buildings, fight for the scarce resources, and try to salvage some of the old technological wonders. Among them, the so-called "vaults", special self-sufficient shelters constructed across the US before the war, are a key theme in all games. The player often takes the role of one of the vault-dwellers (or, at least, somebody related to them), who has just emerged into the wasteland.

Fallout's Main Features

Fallout shares many common features with other CRPGs. The game starts with the player character (PC) creation, choosing name, gender and initial attributes and skills. Advancement is level-based, with a strong emphasis on combat and exploration. In the first games created by Interplay, the player uses a 2D overland map to move across key locations that must be discovered. Exploring key locations uses a much more detailed third-person isometric view with turn-based combat. In later games, Bethesda updated the engine and moved to a first person view in a fully explorable 3D world, also using its own variation of real-time combat with pause. At any time, it is possible to initiate conversations with non-hostile NPCs, which are managed through a dialog tree system.

Even though many of these features could be considered standard to the CRPG genre, there are some that define the Fallout series and are considered very important, one would even say expected in each installment. For instance, the series relies on its own SPECIAL rule set. The PC is defined by seven [1-10] rated stats (Strength, Perception, Endurance, Charisma, Intelligence, Agility and Luck, which spell "SPECIAL"), a set of [1-100] rated skills, and a

list of perks. Perks provide situational bonuses and can be acquired through normal character advancement and chosen by the player, or as a result of game choices.

However, one of the signature features that sets it apart from other games would probably be its 1950's/retrofuturistic vibe, instead of the more common medieval fantasy setting, or straightforward space SciFi. This is reflected not only in technology, but also in hairstyles, clothes, music, ideologies (e.g. the red scare), etc. This is further reinforced by a diegetic user interface, the Pip-Boy (Personal Information Processor, see Figure 1), a hand-held electronic device that the PC always carries, and which is based on a green or gold monochrome screen. The player accesses all game information through this device.

Figure 1: The Pip-Boy: Fallout's interface to player stats.

Also, and even though combat plays an important role, interactions with other NPCs and the world at large are a key aspect of the games. First, companions can be recruited, but never fully controlled as would be possible in a party-based RPG. They take their own decisions during gameplay, even during combat. In latter games, the player could control some aspects of their behaviour or inventories, but never completely. Second, there is a strong focus on narrative and providing options beyond combat. With the right stats and skills, it is possible to solve many quests without the need of direct confrontation or violence. Such actions also have an impact on the PC's long term reputation, to which NPCs react accordingly, instead of just reacting to immediate actions in their vicinity (e.g. being attacked, robbed, etc.). Companions also react, and may even leave the party, or refuse to join depending on the circumstances. Finally, it is customary that, when the game ends, several extra cutscenes tell the tale about how some of the PC's decisions during the game impacted the world beyond the main quest (e.g. a settlement was saved/destroyed, what happened to important NPCs or companions, etc.).

Fallout in the Academic Literature

The relevance of the Fallout series in the academia is reflected in several publications, with a strong emphasis on studying Fallout 3 as the main case study to analyze different aspects of

how players interact with video games and, particularly, how players engage in challenging choices with a moral dimension. This section is just a brief overview of the related work, but it is enough to provide some insights on the most popular topics in papers related to the Fallout series. It must be noted that most works focus of Bethesda's iteration of the series, and not the older first two games, the reason provided being its greater ability to immerse the player through its first person view to explore a fully-featured 3D world.

On the one hand, there are publications such as (Chandler 2015; McClancy 2018) that use Fallout 3 as a conduit to discuss how the player relates to different general topics through game aesthetics, such as the barren landscape and its "brokenness", Cold War nostalgia or faith in technology. (Mosberg Iversen 2012) adds a discussion on how the game presents challenges to the player, but not defined as competition or difficulty, but as stimulating situations with an uncertain outcome; i.e., game choices or strategies that lack an authoritative "correct answer". The series characteristic non-linear approach to gameplay and how it impacts the player's experience is also explored in (İnce 2010).

On the other hand, there are publications that focus on the analysis of player behaviour. Authors take advantage of the freeform nature, within a video game logic's limitations, of Fallout 3 (Spronck et al. 2012) or Fallout: New Vegas (McMahon et al. 2012) in order to explore player personality and types. Both papers use the games to be able to assess the Five Factor Model of Personality (Openness, Neuroticism, Conscientiousness, Agreeableness and Extraversion) (Digman 1990) and propose that video games are a useful tool for this.

Going beyond player personality, the authors in (Schulzke 2009) study the Fallout series, focusing on Fallout 3 again, as a nuanced moral playground. The discussion compares how moral dilemmas are presented with respect to other video game franchises and how morality and karma are calculated in-game, both in quests where the good and evil solutions are obvious, and others in which not so much (which are the interesting ones). The conclusion is that the series could be used to teach what is to be good to the player. Similarly, (Sicart 2013) considers Fallout 3 as a paradigmatic example of a game that presents what the author calls "ill-defined moral choices"; that is, choices which have no foreseeable good or bad solution, and which require the player to engage in genuine moral reflection to decide which outcome they want to choose.

MORALITY SYSTEMS IN THE FALLOUT SERIES

Accounting for the moral consequences of the PC's actions, as well as capturing how such consequences affect the game's world and its inhabitants, is a feature also shared among other RPG titles, aside from the Fallout games. However, the Fallout series has received a great deal of attention in the literature regarding video games and moral choices, given some of its signature morally-challenging situations the games present to the player.

This section provides an analysis of the features and evolution of the morality systems in the games of the main canon Fallout CRPG line, as mentioned in Section *What is Fallout?*. It is worth noting that, in this study, we do not get into detail on choices based on dialogue trees, nor into the narrative behind scripted choices, but we rather focus on studying how morally-weighted actions, are acknowledged by the game's morality system and reflected into the PC's moral persona. The identification and classification of those mechanisms result

from a combined study of the games' systems, the official games' manuals detailing some of the main features, such as (Taylor 1995), as well as through detailed guides for each game specifying the in-game logic behind particular actions and effects, mainly (Nukapedia - The Fallout Wiki).

Fallout: General Reputation and Titles

The first title of the Fallout series sets the theme of accounting for the morality of the PC's choices under the concept of *Karma*, which will be recurring in most of the following games. In this case, karma is measured using a single morality axis, named *General Reputation* in-game, to keep track of the PC's good and evil deeds. Despite its name, it measures the PC's moral alignment from the world's perspective, computed between the values [Good, Neutral, Evil]. Quoting the game's manual (Taylor 1995):

> "If you act nobly, and perform great deeds, your character's reputation will rise (or go positive). If you act like a Commie, or other negative personality type, your character's reputation will sink (or go negative)."

General reputation holds for the whole world at large, which amounts to represent the fact that there is some sort of universal, objective sense of what is good and what is evil in the video game's universe. Furthermore, morally-weighted actions are instantly reflected into the PC's reputation score without the need of anyone witnessing them, and this reputation is instantly known by everybody in the video game's world. Regarding the events that affect the moral profile of the PC, those deeds mostly correspond to scripted choices in dialogues and quests. However, a few non-scripted events can have an impact on reputation, such as being sent to jail.

As general reputation is represented using a single axis, this means that good and evil deeds make up for each other; that is, morality is based on an accumulative score, meaning that performing an enough number of good actions will eventually override an evil reputation, no matter how heinous the PC's previous actions. As it is also argued in (Fitzpatrick et al. 2005), games that use a single morality axis actually fail to account for the notion of "deed", as they cannot keep track of particular events that stick over time.

Nevertheless, Fallout uses an interesting complementary technique that allows certain morally-relevant events to stick, overcoming some of the single general reputation limitations: the *Reputation Titles*. These titles can be seen as labels that are applied to the PC beyond their reputation, and which are triggered by particular events (or through the accumulation of particular events). NPCs will react to these reputation titles, regardless of the PC's general reputation score. For instance, one of them would be "Childkiller", which the PC acquires after killing children, and which triggers negative reactions from the NPCs, regardless of the PC's general reputation.

NPCs judge the PC's morality and respond accordingly through a mechanism called *Re-action*. Funnily enough, the PC's general reputation does not directly affect the NPCs' reaction: only the specific titles previously mentioned, a high Charisma score, and some perks are used for that. As a matter of fact, it seems that, although there was a lot of effort

put into the design of the reaction system, most code is actually commented out, and thus never used in the game.

Fallout 2: Reputation and Social Circles

The second title of the series follows the first one very closely, adding some new interesting bits. First and foremost, general reputation disappears, directly using the term *Karma*. Again, the karma score follows a single axis and is used to assign a [Good, Neutral, Evil] alignment to the PC from a general point of view. Additionally, the PC can be given different aesthetic titles if the karma score is high or low enough, ranging from "Demon Spawn", for the lowest karma score possible, to "Savior of the Damned", for the highest one.

However, a measure called *Reputation* also exists, but now is used to independently measure how the PC is perceived in each one of the game's towns. Similarly to karma, reputation uses a single axis. This means that, aside from the karma score, the PC can gain or lose points on different reputation scores that will only affect specific towns in the game. Similarly, membership in one of the different factions in the game can also affect the way the PC is morally judged by the NPCs. Specifically, the faction of the "Slavers" can be joined by the PC: this allows the player to gain some extra in-game cash, but will permanently tag the player as a member of such guild, which will negatively affect the PC's karma, as well as NPCs' reactions. This is a big step forward regarding its predecessor, as accounting for different reputations in different regions or factions potentially allows to account for distinct socially-defined morality systems with different moral values. With this, it is possible to provide a more plural view of the social dimension of morality, which can vary depending on regions and social groups, as well as avoiding the effect of having a single, universal notion of what is considered good and evil in the video game's world.

The mechanics of reputation titles, that stick and cannot be compensated with opposed deeds, is kept from the first game, but many more are added in Fallout 2. However, most of them have no actual direct relation with the PC's moral persona. The original Fallout reaction mechanism is also kept, but adding the new elements into consideration, such as the way new reputation titles affect the NPCs perception of the PC, or by taking into account the particular reputation score that the player has with respect to the particular town the NPC belongs to. On that regard, the morality system in Fallout 2 ends up being quite similar to the one already existing in Fallout, but adds the plurality of reputations according to different regions.

In general, Fallout sets the basic foundations of the moral systems that will be used in the following games.

Fallout 3: Universal Karma

Fallout 3 keeps the karma score as a universal measurement of the moral alignment of the PC. Similarly as with the previous titles, karma is measured using a single slider that accumulates both good and evil deeds. With respect to the previous titles, though, Fallout 3 increases the labels that are calculated through the karma score to five instead of three, namely [Very Good, Good, Neutral, Evil, Very Evil]. Additionally, depending on the karma score and the player's level, the game assigns different morally-weighted labels to the PC, but which are

just aesthetic and with no real in-game impact. For instance, a 17th level character will be labelled "Paragon" with good karma, "Beholder" with neutral karma, and "Fiend" with evil karma.

Compared to its previous incarnations, Fallout 3's morality system is quite simple. It is solely based on a single, universal karma score again, but town reputation no longer exists. Particular reputations or relationships with certain towns or factions still exist, but only as a result of scripted choices during quests. Fallout 3 also loses the *Reputation Titles* system, present in both previous games. By losing those titles, therefore, the game cannot longer account for granularity of particular, non-scripted morally-relevant deeds beyond the PC's karma score. Due to this, the PC's moral persona keeps the "good deeds make up for evil ones" flavour.

The effects of the NPCs' reactions regarding the PC's moral alignment are in fact very minimal, and are mostly related to verbal reactions from generic NPCs, access to certain companions during the game, and to determine, for instance, randomly-generated encounters with mercenary companies who may attack the player depending on karma alignment. However, it is worth noting, though, that NPCs also have a karma level associated, and this also determines how they react to the PC; in a nutshell, good-aligned NPCs react positively to a good-aligned PC and negatively to an evil-aligned one, and the other way around.

Fallout: New Vegas and Multiple Reputations

With regards to its predecessors, Fallout: New Vegas (Fallout: NV onwards) is a step forwards in terms of morality systems, recovering some of the nuances found in Fallout 2. Even though Fallout: NV still maintains the notion of karma as a measurement of the PC's moral alignment, this feature plays now a minor role in affecting interactions with NPCs. Similarly to its predecessor, karma uses a single axis, accumulating both the PC's good and evil deeds. Karma-dependent labels are maintained from Fallout 3, and therefore fall among [Very Good, Good, Neutral, Evil, Very Evil]; similarly, the game still assigns aesthetic morally-relevant labels to the PC, depending on the character's level and karma score. The actions that grant good or evil karma points to the PC are, again, universally weighted, in the sense that they are fixed, taken to be objective, and immediately acknowledged across the game's world.

However, Fallout: NV accounts again for independent reputations in different factions and towns; furthermore, those play a far more important role on gameplay and NPC reaction than karma does. The most important fact is that now reputation is two-dimensional, featuring *Fame* and *Infamy*, both ranging between [1-4], and which separately measure good and evil deeds that the PC has done with respect to the corresponding faction or town. This means that the idea of certain deeds making up for other ones does no longer hold true: if the PC has gained a certain infamy score towards a faction, for instance, increasing the fame score afterwards will not "erase" the PC's infamous reputation with the faction, although the good deeds pooled into the fame score will also be taken into account. This opens up to more fine-grained moral profiles, which are reflected by certain in-game labels such as "Soft-Hearted Devil", which is given with infamy 4 and fame 3, and which is described as "Most people say you're the devil himself, but most admit you've also done a world of good", or "Dark Hero", which is the counterpart of the previous one, described as "Folks still think you're

some kind of hero, but you sure can be nasty sometimes".

The advantages of Fallout: NV's reputation system are many-folded. On the one hand, being able to separately track good and evil deeds allows for a far more nuanced moral profile for the PC, as we have just exemplified using certain in-game labels. Furthermore, it allows the morality system modeled in the game to capture the fact that good and evil deeds need not make up for each other, and that the game's world and its inhabitants can "remember" both your good and evil actions and react accordingly. On the other hand, the fact that the reputation system is tracked separately for each faction and town in the game allows to account for how different social circles perceive the PC. This is not only desirable in terms of representing that not the whole world may be aware of your deeds, but it also allows to represent how different social circles can have, in the end, different moral values, and thus react differently to your fame and infamy. Furthermore, and even though the PC's karma is openly visible to the NPCs, actions granting fame or infamy only towards a particular region or faction will not be acknowledged in other regions or factions; this introduces a dimension of social dynamics in the reputation mechanics that does not hold for the karma measure, and which did not exist in previous Fallout titles —save for Fallout 2, which also incorporated a town-based reputation system.

On that regard, Fallout: NV presents the most comprehensive and detailed morality system in the Fallout series. Not only it inherits most of Fallout 2 morality system's strong points, but it also improves them and introduces more complex mechanisms to strengthen its social dynamics and moral plurality.

Fallout 4: Enhancing Companions

In Fallout 4, the notion of karma is lost, and judgment is solely based on an *Affinity* mechanism between the PC and NPC companions, but not other NPCs. Even though losing the karma slider can be seen as a drawback in terms of the game's morality system, it does have a certain set of benefits with respect to the game's moral consistency. The game avoids having to use a single, objective, universal account of what is good and what is evil within the game's world, and only the judgment made by some individual NPC matter, even though this judgment is restricted to a very small subset of NPCs across the games world —namely, companion NPCs. This is an important step towards a game where morality is governed not by a set of agent-independent rules, but rather by understanding NPCs as individual agents with their own set of moral values.

Fallout 4's affinity system provides some interesting nuances to the PC's moral judgment. The affinity that a companion can have towards the PC determines their relationship among the following ones: [Infatuation, Confidant, Admiration, Friend, Neutral, Disdain, Hatred]. Moving towards a good relationship will lead to different dialogue options, personalized quests for the companions, special perks with in-game benefits, and the possibility to romance some of such companions; conversely, moving towards a negative relationships negatively affect their dialogue interactions, and may lead to the companions issuing a warning to the player to change their behavior, which may then result in the companions permanently refusing to travel with the player anymore.

Even though basing the game solely on the affinity system does restrict certain features of

its morality system, such as accounting for different social circles' values, limiting the way those social circles feel towards the PC, or not explicitly representing the player's moral persona, affinity provides a way of representing personal moral preferences that would, otherwise, not appear in more general systems. In particular, companions have their own personality and their judgments vary from one to another with respect to the actions that the player can carry out to affect their relationship.

CATEGORIZATION OF MORALITY MECHANISMS

The analysis of the morality systems exhibited in the Fallout games highlights a set of mechanisms that are usually taken into account, in a more or less detailed way, and which we have brought together in a general model represented using the *Unified Modeling Language* (UML), as shown in Figure 2. Those mechanisms define the way in-game characters, be it the PC or NPCs, relate to distinct regions within the game's world; furthermore, they define how this relationship is labeled in some way to express how the actions carried out by the character are good or evil, with respect to the character's environment. Aside from that, those mechanisms also model the relationships that different characters have between them, and which can also depend on or generate some sort of moral judgment that is usually expressed in terms of a certain reaction.
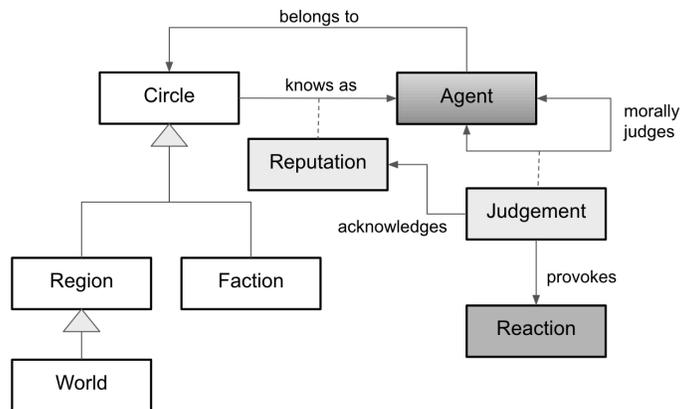

Figure 2: A general UML diagram modelling judgment in the Fallout series.

Identifying Categories

As a result of considering how each game's morality system works, we have identified a set of criteria that define the main features accounted for in each game: Moral axes, Circles, Dissemination, Perception, Granularity and Reaction. Each one of these features is modeled in one way or another, or even in greater or lesser detail, throughout the different Fallout games.

1. *Moral axes*: How is the moral alignment of the PC measured?

   (a) *Single Axis*: The moral alignment of the PC is based on a single axis or slider that accumulates both good and evil deeds, and where one good deed makes up for an evil one, and vice versa. This approach has the clear disadvantage of interpreting morally-relevant deeds in such a manner that a highly enough amount of small good deeds can always end up making up for other evil deeds, regardless of their nature, and the other way around.

   (b) *Double Axis*: The moral alignment of the PC is measured using two independent axes that keep track of good and evil deeds, respectively. Although the combination of both axis is still what leads to determining the PC's moral persona, the system is not based anymore on a "this makes up for that" mechanism. Both good and evil deeds are still translated into numbers to be accumulated in their respective axis, but a high enough amount of one type of, say, good deeds will not erase the evil deeds previously carried out by the player.

2. *Scope*: How far reaching is the PC's moral alignment?

   (a) *World-based*: The moral alignment of the PC is unique throughout the game's world; that is, every NPC in the game "sees" the same player's moral persona. Although it allows for a clear and stable way of situating the PC's moral alignment throughout the game, it fails to represent differences on the way the player is perceived in different regions or social circles throughout the game's world. This not only situates the player as the "center" of the game's world, meaning that everyone in that world is aware of the player's alignment, but it also fails to represent heterogeneous areas or judgment systems, as every NPC shares the same understanding of the moral profile represented by the PC's alignment.

   (b) *Social circles*: The moral alignment of the PC is segmented into different regions and groups spread through the game's world; depending on the belonging of an NPC to certain circles, the way the NPC "sees" the player's moral persona changes. This approach allows to represent a more heterogeneous moral profile, as the PC's relationship with each region or group can be different and, therefore, it can be reflected in a different way. Additionally, different regions or circles could have different ways of accounting for what is considered good or evil, and thus this opens up for a more socially-dependent or plural definition of morality.

3. *Dissemination*: When do moral deeds affect the PC's moral persona?

   (a) *Absolute*: Moral deeds always affect the PC's moral alignment, be them good or evil, and regardless of anyone else witnessing them. This accounts for "the world knowing" what the player has done, and instantly reflecting it into the PC's moral persona. Although this may be consistent with a common understanding of the concept of karma as "you reap what you sow", it pushes morality away from its social dimension and accounts for a kind of "God's eye" observer that keeps track of all the player's deeds.

   (b) *Witness-dependent*: Some negative moral deeds need to be witnessed by someone else in order to be reflected into the PC's moral persona. This avoids the

effect of "the world knowing", and accounts, up to a certain degree, for allowing certain moral deeds to be kept private to the player, as well as reflecting some social dynamics of witnessing and information spread.

4. *Perception*: How do NPCs get to know about the PC's moral deeds?

   (a) *Omniscience*: The PC's moral alignment is "public" and NPCs instantly acknowledge and perceive it. In a way, the PC is "transparent" with respect to the moral persona, and the good and evil deeds carried out by the player are publicly known by everyone. This approach not only fails to account for performing actions that may go unnoticed, but it also fails to account for how social relationships with different NPCs could vary the access those NPCs have towards the player's moral alignment and the deeds carried out. Regarding karma, each Fallout game falls into this category, as it is publicly acknowledged by every NPC in the game.

   (b) *Semi-Private*: NPCs have limited access to the PC's moral alignment. This limitation could be through distinguishing the PC's moral persona with respect to different social circles, or directly through only being able to know those PC's deeds which have been either witnessed or communicated, thus modeling social dynamics. Although the Fallout series falls generally short in the latter, as witnessed deeds are instantaneously spread, the former is captured by splitting the player's reputation over the relevant circles.

5. *Granularity*: Do particular deeds stick over the accumulated deeds?

   (a) *Accumulation Only*: Good and evil deeds are translated into numerical scores and accumulated together as a reflection of the overall amount of good and evil carried out by the player. The greater relevance that a particular deed could have, with respect to another, is only reflected by assigning a greater number to it, but, once the deed has been pooled together with the rest, it becomes impossible to identify it with respect to the other ones. This approach prevents the morality system from considering certain deeds specially relevant, thus encouraging the idea that, in the end, the only thing that matters is "how much" good or evil a deed is.

   (b) *Relevant Deeds*: Particular deeds stick over time and can be identified beyond their weight within the relevant axis. This approach not only allows to represent those deeds in a more detailed way than rather by accounting how much good or evil they are, but it also opens up to the NPCs reacting to particularly good or evil actions carried out by the player. This captures the heterogeneity of certain moral deeds that may stick beyond the particular alignment of the PC, and which may be considered more relevant by certain NPCs.

6. *Reaction*: How does the PC's moral persona affect the NPCs reaction?

   (a) *Generic NPCs*: Non-hostile NPCs, such as vendors, townsfolk and quest-givers react to the PC's moral persona accordingly. Even if the relationship between the PC and those NPCs do not have a crucial role in the game, they still reflect the way they perceive the PC's moral alignment in different ways. Depending

on the specific role of the NPC, this can vary between dialogue interactions, prices in shops, willingness to share certain information, inclination to interact with the player, or even hostility towards it.

(b) *Companions*: Companion NPCs show a much deeper relationship with the PC, and the PC's moral persona affect their behavior in greater detail. Companions' reactions go beyond variations in dialogue interactions, and can also affect the companions' behavior and performance while helping the player. Similarly, companions judge the behavior of the player independently of the moral alignment, and react differently to particular deeds. Furthermore, different companions show different moral values and consider different deeds as being good or evil.

Towards a Better Morality System

The set of categories for morality systems just distilled through examining each Fallout title allows us to situate each game in terms of how much it accounts for each feature. Furthermore, it allows us to see how different games following different approaches account for certain features in one way or another, while sometimes completely omitting other ones. We argue how a more detailed morality system able to account for more nuances in the definition of the PC's moral persona, as well as more realistic reactions from the world and the NPCs, could contribute to prevent the effect of *inconsistent* moral gameplay, as identified by (Švelch 2010). This, in turn, would also help strengthen both the internal consistency and coherence of the virtual world, which (McMahan 2003) identifies as an important requirement for the players' immersion, through the enhancement of the social realism of the virtual world. Considering this, we now propose which combination of characteristics featured in the morality systems of the different Fallout games would lead to modeling the most comprehensive and detailed morality system, if it was to be implemented in a new game:

1. *Accumulation*: The most detailed approach to this feature is Fallout: NV's *double axis*, as it allows to independently keep track of good and evil deeds without pooling everything into the same slider. This, in turn, allows to take into account more nuanced or grey moral profiles for the PC, as shown by Fallout: NV's in-game labels.

2. *Scope*: Both Fallout 2 and Fallout: NV's provide the most detailed approach to the plurality of moral judgments through the mechanism of *social circles*. Their account of independent reputations depending on different regions and factions not only allows to limit the scope of the PC's moral persona, but also opens up to the chance of accounting for different sets of moral values judging the player's actions.

3. *Dissemination*: Although karma always has an *instantaneous* effect throughout the Fallout series, Bethesda's titles, namely Fallout 3, Fallout: NV and Fallout 4, introduce a limited set of actions that are already *witness-dependent*. Even though this is a first step towards accounting for the social dynamics of witnessing and information spread, it is still very limited, and so the mechanics already existing in Fallout games do not allow to fully account for the desired dissemination effect.

4. *Perception*: Again, the Fallout series in general falls a bit short in this aspect, as the PC's moral persona is usually perceived right away by the NPCs. Nevertheless, Fallout 2 and Fallout: NV limit the scope of that and model some sort of *semi-private* perception of the PC's moral alignment through independent social circles.

5. *Granularity*: The most detailed approach to this feature is Fallout and Fallout 2's reputation titles, which allow to keep track of *relevant deeds* beyond their effect on the morality sliders. This, in turn, allows NPCs to react or behave differently according to those particular deeds.

6. *Reaction*: In the case of *generic NPCs*, in each one of the Fallout games, and specially in Fallout 3 and Fallout: NV, the moral alignment of the PC plays a role in the way they react and interact; the way Fallout and Fallout 2's reputation titles affect those reactions, though, is also a valuable addition to the case of generic NPCs. Regarding *companions*, Fallout 4's affinity system provides the most detailed way of modeling NPCs as individual agents with their own set of moral values, and who judge the player's actions independently. A combination of the affinity system, which would account for individual differences, together with a reputation-based reaction to account for their belonging to social circles, would allow to model deeper and more complex NPCs.

CONCLUSIONS

Through performing a detailed analysis of the main features of the morality systems implemented in the Fallout CRPG series' games we have shown their strong and weak points, we have argued what they do accomplish, and also where they still fall short. This analysis also allowed us to define a set of criteria that identifies the main features accounted by those morality systems.

This, in turn, allows us to propose a combination of existing techniques in morality systems that can be seen in different Fallout games, and which would lead to a more detailed and comprehensive approach to morality systems in the context of the games analyzed.

Aside from providing a thorough study on the particularities of morality system in the Fallout series, our analysis allows us to foresee a series of guidelines towards the study and design of detailed morality systems, with particular emphasis on CRPGs. These guidelines would allow us to argue how some of the mechanisms already implemented in certain Fallout titles are, in fact, detailed enough to model them in a good level of detail, as well as showing how other existing mechanisms could be further improved to provide a much more fine-grained morality system. Similarly, through these guidelines we can also point to those desired features that a morality system should have, but which are not covered in any particular Fallout game.

As future work, and aiming towards providing guidelines for the design of more detailed, agent-based representations of NPCs with individual traits and moral profiles, we would like to further explore the reaction mechanism exhibited in Fallout 4, as well as considering how it could blend with general reputation mechanisms. We believe that such combination could lead to modeling NPCs characterized both by their individual values, as well as by

their social profile related to their belonging to certain circles. Aside from that, we want to use the set of criteria we have defined through analyzing the Fallout games and apply it to other CRPGs that also include a morality system in order to to see how they compare to each one of the identified features. This will not only draw a relationship between the Fallout series and other games, but it may also allow us to refine the selected features even further. In turn, this can be beneficial not only to study how actual games model the moral persona of the player, but also to provide guidelines as to how the morality system of future games could be designed to account for the desired features.

BIBLIOGRAPHY

Barnett, M., and C. Sharp. 2015. "The moral choice of inFAMOUS: law and morality in video games." *Griffith Law Review* 24 (3): 482–499.

Champion, E. 2009. "Roles and Worlds in the Hybrid RPG Game of Oblivion." *International Journal of Role-Playing,* no. 1: 37–52.

Chandler, D. 2015. "Retro-future Imperfect: Glitch and Ruin in Fallout 3." *Foundation* 44 (120).

Digman, J. M. 1990. "Personality Structure: Emergence of the Five-Factor Model." *Annual Review of Psychology* 41:417–440.

Fitzpatrick, R., M. Walsh, and M. Nitsche. 2005. "Character data sets and parameterized morality." In *Aesthetics of Play: Bergen (Norway), 14-15 October 2005.*

Gert, B., and J. Gert. 2017. "The Definition of Morality." In *The Stanford Encyclopedia of Philosophy (Fall 2017 Edition).* N. Zalta (ed.) `https://plato.stanford.edu/archives/fall2017/entries/morality-definition`.

Hayse, M. 2010. "Ultima IV : Simulating the Religious Quest." *Video Games with God:* 34–46.

Heron, M., and P. Belford. 2014. "'It's only a game' — ethics, empathy and identification in game morality systems." *The Computer Games Journal* 3 (1): 34–53.

İnce, L. Y. 2010. *A critical approach to game studies: analysis of Fallout 3.* Msc. Thesis. Bilkent University.

McClancy, K. 2018. "The Wasteland of the Real: Nostalgia and Simulacra in Fallout." *Game Studies* 18 (2).

McMahan, A. 2003. "Immersion, engagement and presence." In *The Video Game, Theory Reader,* 67–86. Routledge, Taylor / Francis Group.

McMahon, N., P. Wyeth, and D. Johnson. 2012. "Personality and Player Types in Fallout New Vegas." In *Proceedings of the 4th International Conference on Fun and Games,* 113–116. FnG '12. Toulouse, France: ACM. ISBN: 978-1-4503-1570-8.

Miller, G. 1979. Mad Max.

Mosberg Iversen, S. 2012. "In the Double Grip of the Game: Challenge and Fallout 3." *Game Studies* 12 (2).

Nukapedia - The Fallout Wiki. Last accessed 8 April 2019. `https://fallout.fandom.com/wiki/Fallout_Wiki`.

Russell, Adam. 2006. "Opinion Systems." In *AI Game Programming Wisdom 3.* Charles River Media.

Schulzke, M. 2009. "Moral Decision Making in Fallout." *Game Studies: The International Journal of Computer Game Research* 9 (2).

Sicart, M. 2013. "Moral Dilemmas in Computer Games." *Design Issues* 29 (3): 28–37.

Spronck, P., I. Balemans, and G. van Lankveld. 2012. "Player Profiling with Fallout 3." In *Proceedings Of The Eighth Artificial Intelligence And Interactive Digital Entertainment International Conference.* AIIDE '12.

Švelch, J. 2010. "The Good, The Bad, and The Player: The Challenges to Moral Engagement in Single-Player Avatar-Based Video Games." In *Ethics and Game Design: Teaching Values through Play,* edited by K. Schrier and D. Gibson, 52–68. IGI Global.

Taylor, C. 1995. Vault Dweller's Survival Guide. Interplay.

Zagal, José. 2009. "Ethically Notable Videogames: Moral Dilemmas and Gameplay." In *Proceedings of the 2009 DiGRA Conference.*