Serious Moral Games in Bioethics

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Abstract
Our contribution discusses the possibilities and limits of using video games for apprehending and reflecting on the moral actions of its players. We briefly present the results of an extended study [1] that introduces the conceptual idea of a Serious Moral Game (SMG). We outline its possible application in bioethics for training medical professionals such that they can deal better with moral problems in practice. In this way, a SMG Bioethics intends to improve psychological competences that are needed for dealing with various ethical questions within healthcare. The contribution is part of a project that aims for actually creating a SMG for training moral competences that are needed for putting bioethics in practice.

Author Keywords
Serious Moral Games; Moral Behavior; Biomedical Ethics; Training; Medicine

ACM Classification Keywords
J.3 Health

General Terms
Design; Human Factors; Measurement

Introduction

The relationship between video games and morality is widely discussed in the public realm. But instead of following the common line argument maintaining that the contents of video games rarely serve or even corrupt the understanding or promotion of moral actions, the authors consider the benefits these games might have to moral research and education. We have recently suggested that computer games may be a suitable medium for training moral competences due to their ability to allow for immersion and the creation of an intrinsic player motivation [1; see 2]. We call them “Serious Moral Games”, and we propose that they may serve as an extension of current, virtual reality based training instruments in medicine. The fact that learning preferences of young adults are framed by novel media technologies [3] serves as an additional reason for advancing the use of a SMG in biomedical ethics.

We consider bioethics as a promising domain for a SMG, where medical students and professionals would be the target audience. This, because it is undisputed that training in ethics is indispensable for medical students and professionals, but it frequently has been diagnosed that the effects of courses in biomedical ethics are limited – in particular in medical students [4,5]. One reason for this may be that recognizing the relevance of ethical issues requires actual practice. But it may also be that the current training in ethics, which is usually based on deliberation of case studies, is incomplete [6]. We suspect that one shortage is the insufficient inclusion of practicing psychological competences that underlie moral behavior. This may for example explain why medical practitioners sometimes have difficulties in recognizing alternative moral standpoints or values of patients and their close relatives [7]. As a failure to include diverging moral standpoints in medical decision making can have severe effects and influences the general appreciation of medicine, training moral competences of medical professional is of general importance for improving the healthcare system.

In the following, we give a very brief overview on our study and outline the main points that have to be discussed when creating a SMG in general. This contribution is part of a larger project that aims for creating a SMG for Bioethics. We are currently defining the technical requirement specifications of such a game and we develop visualizations, e.g. for displaying the “moral profile” of a player. We hope that the workshop “Ubiquitous games and gamification for promoting behavior change and wellbeing” will provide valuable feedback for our future work.

Video Games and Morality

Up to recently, the general relationship between morality and video games was considered from a limited perspective. It was (and still is) common to debate whether certain games (such as first-person shooters) have a negative impact on the moral development of adolescents, although the findings are controversial [8].

We will not comment on this debate here, but we remark that in the last few years an increasing interest in creating “prosocial” video games shows up in several ways. Some authors strongly maintain that video games – in contrast to other instruments of moral education like stories or films – are particularly well suited for such purposes in that such games do not merely convey content; rather, the rules on which the

games are based allow the player to act (within the established framework of the game) [9], and thus interact, rather than simply absorb. This “prosocial use” of video games is accompanied by a noteworthy development in the game industry. There have been for some time now games on the market in which the player has to develop explicitly moral qualities (e.g. to be cooperative) to succeed. The associated “socially conscious artificial intelligence” aspect of a game engine has become quite common in game design. Examples of such behaviors include taking responsibility or feeling empathy for other game characters, and a game flow that responds to the behavior of the players (e.g. assertive versus cautious) [10]. However, the possibility of moral decisions in such games is not usually discussed in terms of their possible realization in a video game, but in the context of cultural analysis [11].

Nevertheless, this discussion points to the possibility of creating a Serious Moral Game, i.e. a game that enables one to determine the “morality” of players, as well as that might have an effect on their behavior outside of the game world. Naturally this goal raises methodical questions, whose answers form the prerequisites for such a project:

1. What does one mean by the idea of “morality”? In a general sense, “morality” describes the social norms and values that constitute the standard for “morally correct behavior”. But: What sort of norm is “moral”? To what extent are such norms bound to cultural and historical frameworks? What modes of justification do moral norms require?
2. What model of moral agency should apply? If the “morality” of a player is to be understood or changed through a SMG, then there has to be a grasp of the psychological mechanisms on which morality depends. Otherwise it would be unclear which approaches would really address the player’s basic starting points.
3. Which game mechanisms are available to make determinations about the morality of the players? This relates to the possible content of the game, to the rules, and finally to the gameplay – that is, the structure that opens up the space of possibility, and therewith determines the progression of the game and, especially, the game experience.

Moral Intelligence

If a SMG is to be able to measure the morality of the players, it must be embedded in a framework that has conceptual and empirical support. This can be accomplished through a certain model informed by an account of the psychological mechanisms of moral agency, and further refined through the theory of “Moral Intelligence” [12]. Roughly put, moral intelligence refers to the set of skills the moral agent needs in order to align her behavior with the ends she has set for herself. It is thus a skill-based conception of morality or moral behavior, analogous to the concept of “emotional intelligence” that describes the ability to deal with emotions. The approach describes the sequential logic of moral behavior along with the associated underlying psychological processes, as well the way in which implicit and explicit knowledge of morality and its justifications are included. These elements underlie the five components of moral intelligence:

- *Moral compass:* This metaphor encompasses the set of moral schemata whose content is responsible for orienting the subject’s behavior [13]. As such it is concerned with mental representations of both declarative and procedural knowledge, each of which is accessible to the subject in varying degrees.
- *Moral commitment:* The ability to activate or sustain a motivation for the inclusion of moral considerations in the process of perception, decision-making, and action. In contrast to the typical process logic of moral behavior (perception → decision → motivation → action, [14]) moral commitment is a capacity that influences all stages of the process, and in particular provides a motivational force to the semantic content of the moral compass.
- *Moral sensibility:* The ability to recognize morally salient aspects of a particular situation. The relevance of moral sensibility is obvious: if such moral aspects of a situation are not recognized, there is no cause to be concerned with the question of right actions.
- *Moral problem solving:* The ability to bring the morally salient features of a situation to the decision making process, and depending on the degree of conflict involved (e.g., if the problem has the structure of a dilemma) to arrive at a decision consistent with the subject’s particular moral compass.
- *Moral resoluteness:* The ability to carry out the decision that is made despite, inter alia, external resistance and barriers.

Implications for a Serious Moral Game

Any attempt to measure moral behavior should reflect a central characteristic of human morality: humans are not only moral because they understand a valid moral system and act accordingly, but also because in certain situations they can put this moral system into question. It is not enough to analyze the extent to which a moral agent fulfills the demands of a moral system. One should also examine how the moral agent behaves when the applicability of specific moral norms becomes questionable in certain situations. The justified rejection of certain norms (e.g. due to changed contexts) could be a mark of moral agency, so that the way one handles these substantive commitments can be an object of empirical interest. This is of particular relevance in bioethics, as many moral problems in medicine have a dilemmatic structure where conflicting values cannot be realized in the same time. For example in psychiatry, some interventions are needed to avoid harm for the patient, but may violate the patient’s autonomy. Because of that basic problem, not all components of the psychological model of a moral agent can be addressed in a similar way in a SMG:

- *Moral compass:* In order to give an account of how the behavior of the player in a game relates to her moral convictions, these convictions must be articulated in at least a rudimentary way. This may, but need not necessarily, happen through the game itself, but can happen, for example, as part of the debriefing, if game is part of a study.
- *Moral commitment:* Moral action is closely linked with the motivation to allow one’s behavior to be guided by moral considerations. For a Serious Moral Game this means that the gameplay has to build in such a motivation, which is to say that moral issues must have significance to the game itself.
- *Moral sensibility:* Moral action is based on the ability to recognize that there is a moral problem presented in a given situation. Accordingly, a Serious

Moral Game has to present the moral questions in a manner that inherently allows for a corresponding moral cognition. The extent to which the individual player can effectively make use of his or her moral sensibility is one of the possible items for measurement.

- *Moral problem solving:* Although the morality of human beings is not reduced to “solving” moral issues, dealing with such difficult choices is still central. Since most games are basically structured decision spaces, this point is a ‘natural’ component of a Serious Moral Game. But in particular, video games could enable the implementation of very different decision making situations (e.g. those under time pressure, with limited information, etc.) within a common framework.
- *Moral resoluteness:* Moral agency is manifested in the concrete behaviors or behavior patterns of a moral agent. Since video games often utilize representations of the player, this point can be included fairly easily by including obstacles and “temptations” in the game play that must be confronted by the player.

When trying to implement such elements in a SMG one has to distinguish two evaluation levels of ethical action criteria. Games always provide opportunities for ethical behavior external to the gameplay itself, but these are not relevant when it comes to determining the components of a Serious Moral Game. Accordingly, we will hereafter focus on ethical actions within the game. Here, two evaluation levels have to be distinguished, the first of which will be illustrated using the example of the game Pong. Here, a player may, on the basis of ethical considerations, purposefully loses, or moderates his play according to the lesser abilities of his opponent. Such ethically motivated actions happen within the game, and are therefore part of the gameplay (in contrast to, say, violating the rules, which is not part of the game logic). The ethical significance of this behavior, however, lies outside of the game, in that the effects of the action obtain in the real world rather than that of the game itself. The player brings an ethical quality to his game actions by placing the game actions in a context outside of the game itself. This social context enables the player to evaluate his own actions according to ethical criteria (e.g., under the aspect of fair play).

However, the social context in which the game takes place is not the only level on which game behavior can be ethically judged, a player can invoke ethical standards for his actions, or wherein such standards can be deduced. Another is that of the game world itself, and refers to the ethical evaluation of the impact that players’ actions have on the course of the game, given the way the designers have set things up.

Potential Control Parameters of a SMG

In an extensive study that is beyond this contribution, we have analyzed several paradigmatic types of current computer games with respect to their narrative setting, their game play and their ethical system [1]. In this way we identified a wide range of variables that have already been used in games and that represent potentially relevant parameters for measuring moral behavior:

- *Deliberation time:* How much time does the player have to make his decision? How does the time pressure affect the decision making process?

- *Possibilities for correction:* Does the player have the possibility to correct decisions and actions retrospectively, as in the form of rectifications, say? To what extent does this possibility effect the decision making process, especially when the player expects it?
- *Narrative variability:* Based on variations within the narration, priming effects could be examined. Variables include narrative elements such as backstory or cut scenes.
- *Different contexts of action:* The narrative setting as a whole as well as the genre of the story can be a design variable, given the appropriate effort. Different contexts can have importance for an ethical decision.
- *Different character roles:* The role of the player can be designed as a variable, as can the character’s backstory, its looks, and its modes of interaction. To what extent do the features of the character determine the decision making process?
- *Interaction with NPCs:* Due to the audiovisual mode of presentation, subtle changes in the character’s social environment can be built in. These variables would concern interactions with the NPCs, such as how they talk to the character.
- *Evocative level:* Based on variations in the audiovisual development of the characters, one could observe the effects of different features like age, gender, looks, etc., on the decision making process.
- *Different forms of presentation and audiovisual style:* Such elements enable the examination of framing effects. How do the form of presentation, the style, or the media processing effect the decision making process? Do realistic forms of presentation support ethical decisions more than abstract and stylized forms? How can the relationship between image and text be evaluated as a basis for ethical behavior?
- *Different perspectives:* How might the distance that the player has from events, persons, or situations, especially ones she can influence, play a role in moral agency?
- *Variable degrees of difficulty for certain tasks:* Does a player maintain her ethical values or does she abandon her conceptions of value when the actions occur under significant time pressure, or when she is faced with additional challenges?

For example, the game “Fable 2” (Microsoft, 2008) uses a moral system that is built on the dichotomies of “good and evil” and “pure and corrupt”, and evaluates a large part of the game action on this basis. This system is directly tied to the character development, such that actions that are evaluated by the game from an ethical perspective as “good” or “pure” can lead to a different appearance of the character than “evil” or “corrupt” actions.

In our project, we aim for a more complex moral ontology. In the current stage, we evaluate in various paradigmatic moral dilemmas in healthcare, to what extend players will be able to discover the involved values and which of them guides their decisions. In this way, during the game, a “moral profile” of the player should emerge that informs him or her on preferences and neglects with respect to moral values inherent in medical decision making.

Conclusion

In a culture in which the digital gathering of information about social processes plays an increasingly important

role, it is plausible to suppose that the interactive medium of the video game will gain general acceptance as an instrument for the acquisition of knowledge. A SMG that contains the elements articulated here and that is applied in contexts where the need for ethical training is undisputed, as in medicine, can open up opportunities for the medium beyond those of today’s common design formats, thereby providing substantial support to moral research as well.

The complexity of this topic presents new kinds of challenges for the constructions of such games. The interdependence of multiple parameters, along with the difficulties of correlation and interpretation, leave designers with many hard questions. Serious Moral Games would certainly break new ground in terms of layout, structure, and interest. Nevertheless, through SMGs, awareness could develop as to how moral behavior can be better understood and applied at the level of the individual, but also concerning its significance and value within the social context.

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