

Game State vs. Play State: From DVDi Games to a Language of Gaming Experience

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Abstract

Research in the field of digital games is highly interdisciplinary but did not yet arrive at common conceptualizations and at a common language of discourse. The difficulty lies in the heterogeneity of knowledge sources, research methodologies, and practices of discourse relevant to understanding, analyzing, and possibly designing digital games. This paper aims to contribute to fill these gaps. Considering digital games as IT application systems and entertainment media at once it focusses on the distinction of concepts such as *game state* and *play state*.

Based on comprehensive studies of DVDi games within a cooperation project of a university research center and the digital games industry¹ the paper first introduces that type of games. Then it looks at DVDi games as formal describable IT application systems. Third it interprets DVDi games as entertainment media. Revealing some weaknesses of current DVDi games it finally discusses how to improve future games.

Gaming Experience in DVDi Games

Interactive DVD (DVDi) games² are a rather recent and very specific type of games that require a common DVD player and a TV only. It is based on the presentation of any video material and can exclusively played by means of the DVD player's remote control.

Within the present paper, DVDi games are seen as fairly simple objects of investigation in the field of digital games. In contrast to more widespread PC games the computing power available to control a DVDi game is very weak, thus the game system state is quite simple to describe as a position within the DVD's playlist. Due to the finiteness of the playlist the set of game states clearly forms a finite state machine. Moreover DVD players are limited to one remote control with limited interaction functionality only, so multi-player games require sequential player actions. Thus monitoring of a DVDi game play is quite easy even in the case of a multiplayer game.

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¹i.e. The Games Company, Germany's largest fully Germany-based publisher of digital games

²i.e. DVD only games, DVD board games, and interactive Movies. The latter two are not relevant for the present paper.

Game State & Play State – DVDi Games as IT Systems

Examining DVDi games as IT application systems, game playing experience can be described by means of formal concepts drawn from theoretical computer science studies. Elementary expressions of game descriptions then consist of user inputs to the system and system reactions. As the users are game players the inputs to the system are **moves**. According to (Grünvogel 2005) system reactions can be modeled with a map to the state space with respect to the performed move. (Jantke 2006b) introduces it as moves of computerized agents of any type called *game moves*. However, any sequence of those elementary expressions describes a certain **game state**.

To really understand game playing experience it is relevant to introduce concepts from the users domain, e.g. in the optimal case of immersion the player does not push a button but performs an **action** such as shooting.

At this level it is fairly hard to find a formal description of game playing experience. The attempt of (Björk & Holopainen 2004) has lack of practicability as long as there is no homomorphism map from the set of elementary expressions to the set of semantically driven higher order expressions. Such a map would assign *meaning* to certain sequences of elementary moves, and vice versa, introduce *implementations* of certain actions as sequences of elementary moves. Those homomorphisms allow to formally describe game playing experience on a higher level using sequences of semantically annotated actions and thus to describe **play states**. Finally that conceptualization leads to *layered languages of ludology* as introduced in (Jantke 2006b).



Figure 1: TOMB RAIDER – Push the buttons in the given order and Lara will open the combination lock.

The TOMB RAIDER DVDi game³ may serve as an exemplification. The story evolved to a certain play state (Fig. 1): *Lara is in a building in front of a combination lock*. The story does not continue until a certain action is performed: *open the door by means of the combination lock*. Technically seen the DVDi game reached a certain position in the playlist. It waits for a certain sequence of button clicks to continue in the list. The action *open the door* is implemented by the button sequence shown in the figure. The simplicity of the DVDi game reveals that game state and play state are the same thing on different levels of abstraction.

The Fascination of Control – DVDi games as Entertainment Systems

In order to understand DVDi games as entertainment media the present paper adopts a model of human game playing behavior that has been inspired by (Fritz 2004) and was elaborated in (Jantke 2006a) (Fig. 2).

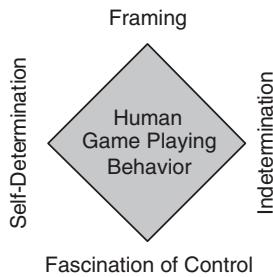


Figure 2: Human Game Playing Behavior

The fascination of control as discussed in (Koster 2005) and (Spitzer 2002) means to gain control over the balance of indetermination and self-determination. It is influenced by the framing, i.e. the level of immersion.

DVDi games hardly meet these criteria. Due to the limited disk space, amount, variety and attractiveness of media material such as film is crucial. Thus implementing indetermination and even self-determination is difficult, e.g. in the TOMB RAIDER DVDi game it is impossible to freely explore the game world. This holds for the framing, too. It is hard to imagine that deactivating a security device requires pushing a down, up, right, and left button in that order (cf. Fig. 1).

Fascinating Future – DVDi Games as Entertaining IT Systems

Bridging the gap it is finally worth discussing to which extend the concepts *play state* & *game state* resp. *action* & *move* are sufficient to affect the fascination of control. Aiming on improvement of indetermination, self-determination or framing one could wonder, how to alter the meaning of actions w/o changing their implementation as sequences of moves and how to modify the implementation of move sequences w/o changing their meaning respectively?

³TOMB RAIDER – THE ACTION ADVENTURE was produced by recording footage from the PC game 'The Angle of Darkness' and then making it interactive on DVDi. The player has to perform sequences of remote control actions as shown in the figure.

The latter is answered, to some extend, by the development of the new Nintendo Wii remote controls. Due to the fixed specification of DVD remote interaction it is hard to assign these findings to DVDi games.

Concerning the former question it is worth to look a bit closer to the HiFIVE DVDi game show. Beyond remote control inputs the kiddy players are encouraged to perform real-life activities (e.g. try to catch the trumpet field while hopping or shaking) that affect later remote control inputs.

Abstractly speaking, in dependence on the real-life state, the DVD game is continued. At a first glance, this appears like bringing in the whole complexity of the real world, which is truly not the case. Assume that the human player is provoked by the game, to act in the real world. After some offline playing activities, the system expects some input out of a finite number of possible player inputs. How rich the human playing in the real environment ever might be, within the experience of game playing it is finally summarized just as a finite sequence of elementary moves. Thus improvement of the fascination of control may be reached through altering the meaning of an action w/o affecting the fixed move sequence of its implementation.

Summary & Conclusions

The present paper proposed DVDi games as comparatively simple objects of investigation in the field of digital games. Based on comprehensive studies of those games the formal concepts *game state* and *play state* were introduced. According to the fascination of control in games it was then argued that altering an action i.e. the meaning of a sequence of moves through employment of real world activity can potentially lead to more fun in playing digital games. To prove that proposal future investigation has to be done.

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