

"Define Real, Moron!"

Some Remarks on Game Ontologies

Academic language should not be a ghetto dialect at odds with ordinary language, but rather an extension that is compatible with lay-language. To define 'game' with the unrealistic ambition of satisfying both lay-people and experts should not be a major concern for a game ontology, since the field it addresses is subject to cultural evolution and diachronic change. Instead of the impossible mission of turning the common word into an analytic concept, a useful task for an ontology of games is to model game differences, to show how the things we call games can be different from each other in a number of different ways.

Define real moron. I think you're confusing the terms 'real' and 'physical'. You're assuming the medium used justifies whether or not people should be respectful. (Discussion on *YouTube*)

Introduction: The Need for Game Ontologies

As games demand more and more attention in both public and academic discourse, the need to understand *what games are* becomes increasingly acute. Are games works of art? Are they rule-based systems? Are they player-driven processes? Are they media? Are games just for fun, or can they be as serious as life itself? Games are many different things to different people and their societies and practices, and, therefore, to different academic disciplines and practices. When two or more game researchers are using the word "game", they may or may not be speaking about the same thing.

'Game' is primarily an everyday term constructed in layman's language, and to reconstruct it as a precisely defined analytical term is

to ask for a lot of trouble. Two simple anecdotes may serve to illustrate this problem: When random people were asked on the phone by Danish telemarketers what games they played, they would typically answer with the name of a lottery service. For them, ‘game’ (Danish *spil*) did not refer to computer games at all, but to national gambling. A former student of mine, Malene Erkmann, did a survey of primary school children and their playing habits. She observed that they would use the phrase “playing computer” (“spille computer”) about the activity of using an online chat-room. For them, a computer game was not needed to play on the computer.

When we as game researchers try to construct formal definitions for commonplace, historical terms like *game* and *play*, we are in danger of reducing them to theoretical constructs that have no direct relationship with real-world phenomena. The range of phenomena recognized as games in everyday language is simply too broad for easy theoretical demarcation. Thus, an ontology of games cannot productively start with a crisp, formal definition of what a game is, but must accept that it means different things to different people, and that this is as it should be. Even the sharpest and best of the many attempts to define what a game is, such as Jesper Juul’s “classic game model” (2005:44), falls short of including all forms of games that are clearly recognized as games in their cultural contexts and by their players, such as live action role-playing games, or informal children’s games. Juul wisely acknowledges the limits of his definitional model, but does not come up with a broader alternative.

It also seems implausible that the concept of games in an earlier (‘classic’) era was unequivocally identified with Juul’s “classic” model. Games have always been a vague cultural category, and at no point in history has a concise and exclusive notion of Juulian ‘game-ness’ (e.g. negotiable consequences, fixed rules) established itself. For example, the *Ludi Romani* entertainment spectacles in ancient Rome consisted of parades, dramatic performances, extremely dan-

see video recording of this *DIGAREC* Keynote-Lecture on:

http://info.ub.uni-potsdam.de/multimedia/show_projekt.php?projekt_id=78#78
 [urn:nbn:de:kobv:517-mms-78-228-2]

gerous chariot races, as well as the famously deadly gladiator games. *Ludus*, it seems, simply meant performative entertainment.

One merely has to consider that *ludus* is the Latin root of the English word “ludicrous” to realize that ‘game’ and its many cognates in other languages denote not only the formal, rule-based contest of serious contenders but also the irreverent, informal revels of people having fun. If we declare that only the former is hereafter called “game”, and the latter something else, e.g. “play”, we are going against common language use. The reason for this miscomprehension in contemporary Game Studies seems to be inspired by Roger Caillois, who used ‘*ludus*’ as a term for his dichotomy between skill based, rule-bound gaming and free improvisation, which he labeled with the Greek term for play: *paidia*.

Academic language should not be a ghetto dialect at odds with ordinary language, but rather an extension that is compatible with lay-language. To define ‘game’ with the unrealistic ambition of satisfying both lay-people and experts should not be a major concern for a game ontology, since the field it addresses is subject to cultural evolution and diachronic change. Even if game researchers could manage to agree upon a definition, which is not likely to happen, the common meaning would remain to challenge our wisdom.

The Word Game

When a new academic field is constructed, some of the work to be done will inevitably be to create and find consensus for sound definitions of key terms. However, while there are a number of game definitions put forward, so far no consensus has been reached. Hovering over this process is the ghost of Ludwig Wittgenstein, who used “game” (“*Spiel*”) as a main example in his *Philosophical Investigations* and concluded that a word like game has no essential definition, but is rather a term for a “family” of similar phenomena that share some features, but there is not one set of features that all share. The game of

defining games – “das Sprachspiel mit dem Worte ‘Spiel’” (Wittgenstein 2001:38) – that is played in Game Studies today was thus dismissed by Wittgenstein more than fifty years ago.

Not because Wittgenstein claimed it was impossible to define games, but because any definition would have to reduce the demarcation to something less than games in general, and because defining games is not really necessary; we know what a game is even if we can't express it clearly, just as we, in Wittgenstein's poetic example, know how a clarinet sounds, even if we are not able to say it. Wittgenstein was using the concept of games for a purpose not at all invested in game research, but his point is still valid in Game Studies. If we as game scholars want to define games in a particular way, we reduce the concept to a narrower area than that which is indicated by popular language use. Should game scholars be allowed to do this? What purpose is being served hereby? There is of course a significant difference between defining the general notion of games too narrowly, and defining a narrower subset of games more precisely.

'Games' is a historical, socially constructed term, and not a theoretical one, at least not to begin with. The attempt to define or redefine a historical term theoretically is to instill something imprecise with faux-precise meaning, and these acts are wagers in a game of power, an attempt to change language and to steer meaning in a particular direction. The main danger in doing so is that some phenomena that used to be called games now no longer have a name for what they are, as demarcations and definitions exclude and marginalize that which they do not put in focus. This is fine if no previous usage existed, but in the case of games, a number of phenomena will be excluded by any specific definition, as Wittgenstein predicted.

Instead of the impossible mission of turning the common word 'game' into an analytic concept, a useful task for an ontology of games is to model game differences, to show how the things we call games can be different from each other in a number of different ways.

For the purpose of this article, I will pragmatically and very broadly define games as *facilitators that structure player behavior, and whose main purpose is enjoyment* (Aarseth 2007).

Game ontological research is one of a number of possible approaches to games. It is a descriptive rather than a normative approach, but a successful game ontology should be able to support normative approaches such as game criticism or game design theory by providing a precise language and models with which to analyze and map the landscape of possible games and their key formal differences. While game criticism may be concerned with qualitative aspects of games, and game ontology with formal aspects, the critical analysis of games will benefit from a formal, model-based understanding of the object in question. In return, the game ontologist can benefit from the experience gained by the game critic's application of the ontological model. The same should be the case for other descriptive approaches, such as the psychological study of game effects or sociological studies of how games are used by actual players. When, for instance, 'media effects'-researchers lack a clear understanding of the formal qualities of the games they base their clinical observations on, misinterpretation and invalid results typically follow.

One example is from the literature on the effects of violent games, where Anderson and Dill (2000) compared two games, *MYST* (1993) and *WOLFENSTEIN 3D* (1992), without taking into account that a lot of factors besides violence differed between the two games, such as gameworld structure, navigation mode and temporal intensity. With so many factors unaccounted for, the findings of their research were worthless. Simply put, Anderson and Dill ignored the functional, mechanical dimension of video games and based their selection only on the semiotic dimension. To avoid such a fundamental blunder, a game ontology might have been used to select two games that are functionally identical except for the violence (say, a fast-paced sports game and a shooter game), thus, it would have been possible to isolate the one factor to be studied.

Similarly, game sociologists studying player freedom and influence over the game world in Massively Multiplayer Online-games (MMOs) may benefit from a formal model describing exactly how one game allows more intervention, social communication and personal configuration than another, thus avoiding potentially overbroad conclusions that would apply to some but not all MMOs. Also, a game designer may benefit from a model that lets them see and construct previously unused combinations of common game features, such as the combination of practices found in adventure games and team-based strategy games, but never before seen in the same game.

The empirical scope of this essay is entertainment games in virtual environments; that is, games that feature tactical positions in a virtual landscape as a gameplay component, and typically do not have any other purpose than entertainment. I find terms such as 'video games', 'computer games' and 'digital games' arbitrarily limiting and henceforth will not use them, since the games that are relevant to my argument could be without a visual (while still having a spatial) interface, such as sound-based 3D-games for the blind, or non-graphical (text only) games like *COLOSSAL CAVE ADVENTURE* (1976) and *ZORK I: THE GREAT UNDERGROUND ADVENTURE* (1980). Likewise, there are many mechanical games that also use digital technology for some part of their operation, e.g. later generations of pinball machines. Games that have ulterior purposes (such as for example learning) or games that have a physical rather than a virtual playing ground or interface – such as soccer or *GUITAR HERO* (2005) – or no significant playing ground at all but tokens only (such as e.g. blackjack or poker) may or may not be framed by this discussion. I do not make any such claims regarding their relevance.

The word 'ontology' can have several meanings. It can refer to the most general branch of metaphysics, concerned with the study of being and existence. More specifically, it can refer to a particular theory of being. In the field of computer science, it refers to a formal description of a domain, including definitions of objects and relationships.

Typically, game ontologies are ontologies in the 3rd, computer-science sense: They describe what games are (and what they are made of): the fundamental building blocks and their relations. However, as we shall see, a game ontology can also address the philosophical questions of being and existence, such as the relationship between, real, virtual and fictional phenomena in games.

A Brief Overview of Formal Computer Game Ontologies

An early attempt to map the possibility space of so-called “interactive fiction” (another name for text-only adventure games) was made by Richard Ziegfeld (1989): He listed a number of technical and interface elements (“simulation”, “interaction” etc.) and suggested how they could be combined. While his terms were typically too imprecisely defined and too overlapping to form a truly useful ontology, he deserves recognition as probably the first computer game ontologist, inspiring later work such as Aarseth (1995). The latter is an attempt to build a comprehensive, generative model that can describe games’ formal features along a number of dimensions, such as perspective (vagrant, omnipresent), teleology (finite, infinite), goals (absolute, relative) and so on.

Like Ziegfeld’s model, it produces a multidimensional space where all games and possible games can be described, but more care is taken to make the dimensions independent and orthogonal. The model can be used for both game design, by identifying new combinations of structures that can result in new games, and game genre analysis, by classifying a number of existing games according to the model, and then analyze the data set with an explorative method such as correspondence analysis.

Inspired by Christopher Alexander’s concept of Design Patterns, Björk and Holopainen (2005) have approached the question of mapping game structures onto a large number of game design patterns, design elements that can be found in a number of games. One ex-

ample is the pattern 'Paper–Scissors–Rock', which can be found in games where the player must choose a weapon or tactic that has strengths and weaknesses relative to the other players' choice. Their method is highly specific and yields a large number of patterns, which may be beneficial for game designers looking for inspiration, but can be challenging to apply in an analysis of a specific game. Jan Klabbers (2003) proposes a top-down ontology where a game consists of three main elements 'Actors', 'Rules' and 'Resources'. The *Game Ontology Project* by Michael Mateas et al. (gameontology.org) is an ongoing project to map structural game elements hierarchically. It has four top-level categories, 'Interface', 'Rules', 'Entity Manipulation' and 'Goals', and a large number of sub-entries. This ontology is mainly a selection of examples, and the hierarchy is at times less than intuitive (e.g. why is 'Entity Manipulation' a top-level entry, and not placed under Rules?).

The main problem facing game ontologists is that of choosing the level of description for their game models. Games can differ by minute details, and most differences would be too particular to generalize into a model. Similarly, the list approach taken by the game design patterns project invites an endless list of patterns; there is no natural stopping point in the model. Another problem is that ontologies that are useful for one purpose may be much less so for another. A general-purpose ontology may therefore end up being much less useful than one that has been constructed with a special purpose in mind.

What's in a Game: A Simple Model of Game Components

Even within the narrower domain of games in virtual environments there are tens, maybe hundreds of thousands of games that are somehow formally different from each other. A game like TETRIS (1985) has almost nothing in common with WORLD OF WARCRAFT (2004), or with SUPER MARIO SUNSHINE (2002). Where media formats such

as print or film have certain well-defined material characteristics that have remained virtually unchanged since they emerged, the rapid evolution in games and game technology makes our assumptions about their media formats a highly unreliable factor to base a theory on. We simply cannot assume that the parameters of interface, medium structure and use will provide a materially stable base for our observations the way the codex paperback has remained the material frame for students of literature for more than five hundred years. In ten years' time, the most popular games, played by tens if not hundreds of millions of people, may have interfaces that could be completely different from the MMOs of today.

The lack of a stable material frame of reference is not necessarily a problem, however, since it actually allows us to see beyond the material conditions and formulate a descriptive theory with much larger empirical scope, both synchronically and diachronically. Indeed, a trans-material ontology of games may also be used to frame phenomena we normally don't think of as games, for example art installations and other forms of software. In my theory of cybertext (Aarseth 1997), I presented a general model of what I called 'ergodic' communication, which included all works or systems that require active input or a generative real-time process in order to produce a semiotic sequence. I used games as a main example of these 'cybernetic texts'.

As I pointed out, it is fundamental for these systems that they consist of two independent levels, the internal code and the semiotic, external expression (ibid:40). This distinction was inspired by Stuart Moulthrop's (1991) observation that hypertexts contain a 'hypotext', the hidden, mechanical system of connections driving the choices presented to the hypertext reader. This duality is the most fundamental key to the understanding of how games work, how they signify, and how they are different from other signifying systems such as literary fiction and film:

what goes on at the external level can be fully understood only in light of the internal. [...] To complicate matters, two different code objects might produce virtually the same expression object, and two different expression objects might result from the same code object under virtually identical circumstances. The possibilities for unique or unintentional sign behavior are endless (Aarseth 1997:40).

This structural relationship should *not* be confused with the notions of form and content, e.g. syntax and semantics, or signifier and signified. Both the internal code and the external skin exist concretely and in parallel, independently and not as aspects of each other. To conflate surface/machine with signifier/signified is a common misunderstanding made by semioticians and other aesthetic theorists who are only used to study the single material layer of literature and film. Together with gameplay, we propose that semiotics and mechanics are the key elements of which any virtual environment game consists.

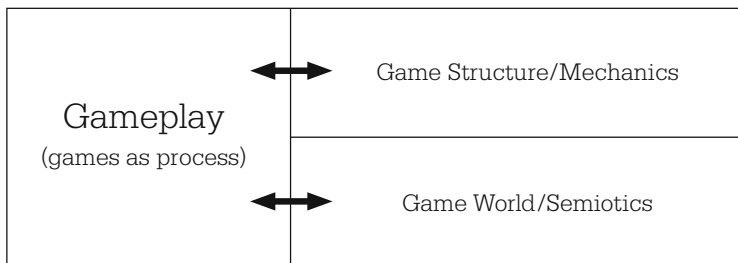


Fig. 1: A simple division of the empirical object into three main components

Mechanics and semiotics together make up the Game Object, which is a type of information object, and when a player engages this object the third component, gameplay, is realized. The Game Object should not be confused with the material object we buy in a game store.

This is a software package that may contain many kinds of information objects besides one or several games. For instance, when using MAX PAYNE (2001), we are exposed to animated movie sequences and comic book sequences in addition to the gameplay.

To use a cliché, game software often contains “more than just a game”. – The Game Object is the part of the software that allows us to play. The semiotic layer of the Game Object is the part of the game that informs the player about the game world and the game state through visual, auditory, textual and sometimes haptic feedback. The mechanical layer of the game object (its *game mechanics*) is the engine that drives the game action, allows the players to make their moves, and changes the game state. The tokens or objects that the player is allowed to operate on can also be called game objects (plural); these are all discrete elements that can enter into various permanent or temporary relations and configurations determined by the game mechanics.

Game objects are dual constructs of both semiotics and mechanics. Some games may have a player manifested in the game as a game object, typically called an avatar. Other games may simply allow the player to manipulate the game objects directly through user input. A typical example of the latter is TETRIS, where the game objects are blocks of six different shapes, and which the player manipulates, one by one, with the simple movement mechanics of move left or right, or turn left or right. – To illustrate the duality of semiotics and mechanics, consider the two simple internet games THE HOWARD DEAN FOR IOWA GAME (2004) and KABOOM! – THE SUICIDE BOMBER GAME (2002).



Fig. 2: THE HOWARD DEAN FOR IOWA GAME (Screenshot)



Fig. 3: KABOOM! – THE SUICIDE BOMBER GAME (Screenshot)

In DEAN FOR IOWA, the player must flash an election campaign sign at the right moment to attract the maximum number of people's attention. In KABOOM! the player must detonate the bomb at the right moment to kill and injure the maximum number of people. In both games, the player's character can run bi-directionally on a busy street where people walk back and forth at different speeds, and the points are scored in the same way, by pressing a button at the optimal time. Mechanically, these two games are identical. In terms of semiotics and meaning, they could hardly be more dissimilar. Even so, are they the same game, despite the very different references to the world outside?

As we move from observing the games as played by others and become players ourselves, the different visuals fade into the background and the engagement with the game becomes an obsession with the game goals and mechanics, a narrowly targeted exercise where the number of points scored becomes the dominant value, not the sight of convinced voters or dead, mangled bodies. While suicide bombing might be too disagreeable for many players, scoring points by symbolically killing virtual enemies is typically not.

So the reason why we as players are able to enjoy symbolic killing is that the internal value system of scoring points takes precedence over the violent symbolism of the external reference. When I started playing the online team part of RETURN TO CASTLE WOLFENSTEIN (2001), where players choose between German and US avatars, because of my family history from wartime Norway, where both my grandfathers were affected by the Nazi occupation, I was very hesitant to play as a German WWII soldier. However, as the game became familiar, I came to enjoy the defensive role afforded by the German position of my favorite map, and my initial reluctance vanished. A total decoupling between external and internal value systems had taken place.

The mechanical layer of a game is of course not completely devoid of any ideological meaning, but it will, through players playing, create its own ideological discourse, through a reinterpretation of the game's semiotics, which de-emphasizes the ideological meanings and interpretations that non-players will produce upon seeing the game semiotics for the first time.

Neither would it be correct to suggest that the production of game meaning is a deterministic process uni-directionally produced by the game system. Players typically fight and disagree over games, and this conflict discourse is an integral part of what a game is. Gameplay is inherently ambiguous (Sutton-Smith 1997), and playing a game is a constant renegotiation of what playing means and how important it is.

Games are real to the players playing, but in different ways, and the ambiguous reality of games allows different interpretations. "It is just a game" is the eternal protest heard when player A feels that player B takes the game too seriously. But player A would not have felt the need to remind player B of this seemingly trivial fact, if it had been trivially true at all times. A game is never 'just a game', it is always also a ground or occasion to discover, contest and negotiate what the game really is, what the game means.

Confusing the Real with the Physical

On March 4th 2006, a group of people is meeting for a memorial service for a recently deceased friend at her favorite fishing spot, a lake in a remote place called 'Winterspring'. As the group forms a long line down towards the water, Mozart's *Requiem* is playing. Not far away, another group is running through a tunnel, then out into the open valley, to the tune of horror punk band *The Misfits*' "Where Eagles Dare" from 1979. When the running group reaches the procession, they start slaughtering the mourners, who are dressed in black, and, not carrying weapons, not in a state to fight back. Soon, all the mourners are dead, their bodies strewn across the landscape.

This event took place in the MMO WORLD OF WARCRAFT, after one of the players had died of a stroke a few days earlier. The two groups were opposing “guilds”, player organizations that would fight each other as part of the normal gameplay. The event was announced on the web forum of the game, and the attacking guild, called “Serenity Now,” made an in-game footage film about the attack and posted it on *YouTube*, with parts of text from the forum reactions to the event.

Perhaps more interesting than both the event itself and the video production was the ensuing debate, typically between players who were either amused or abhorred by the incident:

- I know a real girl died but it wasn’t a real funeral, I bet most people didn’t even knew her in real life

- Define real moron. I think you’re confusing the terms ‘real’ and ‘physical’. You’re assuming the medium used justifies whether or not people should be respectful.

- I’m not being insensetive [sic] or disrespectful at all. I just find it stupid how people are getting pissed at people playing a game that revolves around fighting other players, the way it’s meant to be played... Which is what happened.

- Even know [sic] it was mean it was really god damn funny.

This example may serve as a perfect illustration of how the same in-game event can be interpreted both as a serious act of commemoration interrupted by harassment, and as playing a game “the way it’s meant to be played”. Situations like these are typical for any kind of game where it is possible for players to interpret events in more than one way. The players’ subsequent discussion in the YouTube comments field shows how the ambiguity of games and gaming situations can produce profound ontological and ethical reflections:

Why must “real” always mean ‘physical’? Is it not a real commemoration when it takes place in a virtual game world? Should players feel justified in disrupting events like these, just because the game rules do not stop them? The profoundly bipolar and irreconciliatory disagreement between the players who found the incident perfectly acceptable and even funny, and those who found it utterly distasteful suggests that sentiments and attitudes towards events in virtual environments are far from universal or developed into a common ideology, if it ever will be.

Online games are among the first intellectual tools for exploring what it means to communicate ‘in cyberspace’, and is therefore often used as a metaphor for the online social experience. In Vernor Vinge’s classic novella *True Names* from 1981, for example, a group of hackers conspire against an oppressive government via a fantasy-based online virtual world. Vinge captures very accurately the experience of future multiplayer games such as *EVERQUEST* (1999) as he explores the social dynamics of online game culture.

The Implied Game: The Phenomenology of the Game Object

The game object, as mentioned above, is not a material entity, but a phenomenological one. Players cannot comprehend the game object directly, and so must project or construct an ideal game object in its stead. There are several reasons for this: A game session is the result of combinatorially determined choices both on the part of the player and the game; the player cannot access a *general* play session (unlike watching a movie or reading a novel) but only *particular* ones; actions taken preclude other potential actions, etc. Still, the player is aware of playing the same game object, but never exhaustively, and thus, they cannot claim complete knowledge about an ideal game object, only that such knowledge may in principle exist. This object we may then call the ‘implied game object’.

In very simple games, such as TETRIS, the difference between the implied game object and the actual game object (the object the player actually encounters) is not great. TETRIS is an extremely simple game (like all puzzle games with very simple geometry) in the sense that it is perfectly solvable given enough time (which is what the player, increasingly, is denied). In other words, in the case of TETRIS there is almost no complexity, which means that the essence of TETRIS is revealed in virtually any particular game session. TETRIS' implied game object, then, is very close, but not identical to, the actual game object encountered by most players.

An implied game object does not exist, but is imagined by the player as what the game *is*, or ought to be. A game riddled with software bugs, for example, is perceived as merely the flawed, actual version of an uncompleted, implied game. We conceptualize the *real* game as being without the annoying bugs, and the present version as a premature, unwanted stand-in version for the real (implied) thing.

In games with a higher level of complexity, the difference between actual game object and implied game object increases. Players are aware of the partial nature of their experience, the numerous strategies and paths not taken, and the fact that the game may contain mysteries they will never encounter, solutions outside their reach, tactics beyond their skill level. The implied game contains all these secret moments that the actual game may never reveal. Even for deterministic games with simple rules, such as John Conway's Game of Life, or Chess, the complexity of massively parallel actions or mutually exclusive moves makes the gameplay practically indeterminate.

Game ontology is a necessary first step in the slow process of making sense of games and gaming. It is not possible to say anything about games without a game ontology as basis, but this simply means that unspoken, poorly conceived notions about what games are will always be an alternative to the more sophisticated ontologies of games. As this article no doubt shows, we are still scratching the surface of ludic understanding, and it does not take much imagination to predict that better ontologies will succeed the current ones.

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