The Word Game:
The ontology of an indefinable object

Espen Aarseth
IT University of Copenhagen
Rued Langgaardsvej 7
2300 Copenhagen,Denmark
+45 7218 5045
aarseth@itu.dk

Gordon Calleja
University of Malta
Msida, MSD2080
Malta
+35623403500
gordon.calleja@um.edu.mt

ABSTRACT

In this paper we address the problem of defining games formally, following Wittgenstein's dictum that games cannot be defined adequately as a formal category. Several influential attempts at definitions will be evaluated and shown to be inadequate. As an alternative, we propose a descriptive model of the definable super-category that games belong to, *cybermedia*, that is pragmatic, open, and capable of meeting the needs of the diverse, intensely interdisciplinary field of game studies for a uniting conceptual-lization of its main phenomenon. Our approach, the Cybermedia model, consisting of Player, Sign, Mechanical System, and Material Medium, offers a medium-independent, flexible and analytically useful way to contrast different approaches in games research and to determine which aspect of the phenomenon one is talking about when the word 'game' is used.

Keywords

Game Ontology, Game Definitions, Cybermedia, Lusory Attitude, Wittgenstein, Game Object, Game Process, Game Perspective

1. INTRODUCTION: There is no Tetris

In what sense can a game be said to exist? What is brought into being when a game is being played, and disappears again after it is finished? Can the activity of playing a game be identified objectively? In a movie where two actors are shown as playing chess, is it possible to determine whether they are really playing or merely pretending to play? And what does it mean to play the same game as another person? Is it enough to believe that one is doing so? In short, what are the parameters by which we determine if a particular game is being played? If we design a game that no-one has played yet, does it exist already, or must we wait for someone to play it to bring it into existence?

When two players are playing chess, everyone present will assume that they are playing the same game. However, if they can be shown to have different notions of what the rules are, while being unaware of this discrepancy, are they still playing the same game? In that case, *if we depend on rules to determine the identity of a game*, it would be easy to show that they are not playing the same game, as the two diverging rule-conceptualizations would constitute two different games. Given the complexity of many games, it is not uncommon for players to discover that their

opponents have different conceptualizations than themselves. In such cases, must we conclude that two games are coexisting in the same socio-physical space? Or that one game can exist even if there are two or more conceptualizations of it?

These questions call into doubt the exact nature of the game phenomenon. The things we call games typically go through changes during their lifetime, and still we identify them by their names. *World of Warcraft* has changed many times since its first release in 2004, and yet it is normal to think of it as one game. However, one can also find former players who stopped playing when certain aspects of the game was changed. For them, WoW is no longer the same game, and so they subsequently stopped playing it. For one group of people then, WoW is is still the same game, for others it is not. Thus, we cannot use the materiality of the game to determine whether it is the same, but rather realise that the game primarily exists as a mental construct, which may be different for different people. From this perspective, games are ideal objects (Aarseth 2011: 65), which may or may not completely overlap between players.

This is also the case on a material level. The game we call *Tetris* (originally designed and implemented by Alexey Pajitnov in 1984) is no longer one game in a material sense, since it exists in many implementations and with a number of slightly different rule sets. Games like *Paintball* and *Marbles*, on the other hand, are identified primarily through their materiality, as they have rule sets that vary significantly across cultures and player communities.

As Wittgenstein (1953) pointed out, concepts like "game" ("Spiel") are analytically indefinable; any formal definition will only frame a subset of the total set of phenomena people refer to as "games". For Wittgenstein this observation was merely a useful example for his argument about language and meaning, but for the organized study of games it becomes another kind of problem: If we cannot formally define our object of study we run the risk of "merely verbal disagreement" (Næss, 1966) when making claims about what games are and how they function. A merely verbal disagreement exists when two debaters believe they disagree but in reality are using the same term in two different senses. It should not matter to us that Wittgenstein himself was not invested in the study of games or what his real intensions might have been; his words remain a challenge to those who would define games, and an inspiration for those who agree with his critical observation that games is not a formally definable category.

A close reading of central debates that have risen within game studies gives ample indication that such a problem already exists. When we talk of "games" we are often covering an extensive range of activities, objects and perspectives that sometimes have

little in common with each other aside from their expected role of inducing entertainment.

One solution is to dismiss Wittgenstein and simply propose a definition. But until now, this approach seems to have created more problems than solutions, as it (just as Wittgenstein predicted) will lead to an arbitrarily defined subset of games, rather than of all games. Juul (2005) and Salen & Zimmerman (2003) point out the limits of their own definitions by referring to games such as *Sim City* (Juul, 2005, 47) and pen and paper role-playing games (Juul, 2005, 44; Salen & Zimmerman, 2003, 81) that by their models are rendered "borderline" or "limit cases". Any definition that marginalizes such central examples of games can only be seen to exemplify Wittgenstein's argument. "Game" (Spiel, Jeu, Ludus, etc.) is a label that always referred to many different practices, and it would be less than wise to ignore this when setting up or participating in a broad, interdisciplinary research field such as game studies. It is thus important to acknowledge that the term "game" works well in a nominal, not a theoretical sense. It is unwise to confuse the two, as this inevitably leads to an arbitrary imposition of meaning rather than an analytically accurate scrutiny of the object in question. Nominal labels must be accepted as vague, partial to popular understanding, and sometimes self-contradictory. In addition, the formal understanding of games suffers from a hermeneutic challenge related to the experiential dimension of game-play: two players of the same game might not agree on what the game is. Each can have a legitimately different view on what they are playing without altering the formal features of the game as object. Typically, games are played in ways that challenge the conception of the rules that any particular player may have, and so the notion of "what the game is" can always be contested (and typically is) despite the fact that concrete rules may exist.

2. VARIETY OF GAMES

Games are too often discussed as a homogenous category of objects in the world we can readily make blanket statements about (e.g. "a medium," cf Wolf 2001, Murray 2004). Games have historically included bloody, mass-audience spectacles and dangerous chariot races, as well as back-room or parlour entertainment, gambling, children's play activities, military training exercises and business simulations. But even if we address only digital games (games that rely on digital components) or video games (games that are displayed on an electronic screen), it is dangerously unfocused to address them all as belonging to one and the same medium. An arcade machine from the early 1970s or a handheld, battery-powered Gameboy from the late 1980s are not the same media as the Internet. The wide diversity of material, communicative, social and aesthetic practices (from Nintendo's 1980 gadget *Game&Watch* to Blizzard's 2004 *World of Warcraft*) can only suggest that we are dealing with a huge flora of media, some standalone, some mobile, some net-based, with highly diverse content structures and uses.

The word "game" covers content types and practices that we will find in other media that are not traditionally or intuitively considered games, such as film, music, literature and visual art, or conversations, letter writing and socializing. Thus, the piece of software that is tagged with the label "game" is often more than a game (Aarseth 2012). Although we, for ease of reference, call *Grand Theft Auto IV* a game, it would be more accurate to consider it as a virtual environment that simulates a city having a number of games embedded in it and a few linear storylines that players can progress through by completing sequences of game-like activities. When two players meet in GTA IV's Liberty City they can engage in pre-packaged games that have been coded into the system or they can decide to create their own games within the virtual playground in multiplayer free mode. The rules of the game they play are thus either upheld by the code or agreed upon socially (as is the case with non-digital games). Our players may also decide to cruise the city and chat. In the latter case it would be more accurate to consider the interaction as a shared activity in a virtual environment rather than a game. This means that not all interactions with the objects we call games (or objects within these) result in game-like activities. All these activities already have labels unrelated to games and play, e.g. listening to music, looking at art, chatting, etc. Only their taking place via a type of networking software that bears the label 'game' seems to account for the (rather curious) categorization of these activities as ludic.

The solution adopted in this paper is to accept Wittgenstein's doctrine, and acknowledge that the phenomenon of games is not a formally definable set but a historically constructed notion. Instead of a definition we propose to move to a conceptual meta-level, which addresses what it means to define games in a certain way, and how the concept of games can still be used (and more fruitfully so) as the unifying concept of a field of study. With regards to computer games we aim to distinguish the composite entertainment product generally referred to as game (game as object) from the socially negotiated activity such objects can support (game as process). The main aim of this paper is thus to provide a model of ludic entities and processes which will circumvent the confinement of games to *a priori* definitions. In so doing we hope to engage both those theorists who insist on the value of definitions and those who reject them as formalist devices that ignore the situated practice of gaming. In particular, we will argue that "game" has come to denote several different, yet equally valid concepts and that all these should be identified and acknowledged by the practitioners in the field.

3. GAME DEFINITIONS

As a new academic field is assembled, it is only natural that some degree of energy is spent on trying to define its main objects. In some cases such definitions are highly necessary; in others, they are less so. In literary studies, which have been around for more than two millennia, there is no consensus about what literature actually is, nor is this lack of consensus a cause of worry. In media studies, a much younger field, there is not one canonical definition of what a medium is. This does not hinder the productive evolution of the field. But at some moments in the establishing of new fields, discussions of how best to define the object of study tend to manifest. Game definitions have been addressed in game studies since the inception of the field. A contributing factor to the need for defining games in the early days of game studies was the (erroneously labeled) "narratology vs. ludology" debate. The disagreements in this discussion were more readily attributable to disciplinary interests and merely verbal disagreements than to the nature of games per se. An outcome of this all-too-often misunderstood and misquoted debate (see Aarseth 2013) was the need for game theorists to define the phenomena under scrutiny.

To date, the most quoted game definitions have been made by Jesper Juul in *Half-Real* (2005) and Katie Salen and Eric Zimmerman (2003) in *Rules of Play: Game Design Fundamentals*. They both build them by reviewing and combining elements from a series of existing definitions of games found both in contemporary game studies and also in classical works on play and games such as Johan Huizinga's *Homo Ludens*

(1955) and Roger Caillois' *Man, Play and Games* (1961). The former thinker is particularly prominent in the work of Juul, Salen and Zimmerman. We will go over the constituent parts of each of the two definitions and then consider their respective utility for understanding and defining games.

Salen and Zimmerman define games as follows: "A *game* is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome" (p. 80). They isolate six elements: system, players, artificiality, conflict, rules and quantifiable outcomes. According to Salen and Zimmerman, all games are intrinsically systems (p. 50). They define a *system* as "a set of things that affect one another within an environment to form a larger pattern that is different from any of the individual parts" (p. 50). *Players* are a crucial constituent of the game, which is experienced by acting within its system. The third element, the *artificial* aspect of games, refers to a mode of experience different from everyday life. This is related to the notion of the "magic circle" mentioned by Huizinga (1955) in *Homo Ludens*. The fourth element is *conflict*; "all games embody a contest of powers" (80). Conflict encompasses both competition and collaboration with other players as well as conflict with a game system (such as the case in solo games). *Rules* are seen as being essential to games enabling play through defining what players can and cannot do. A *quantifiable outcome* or goal means that at the end of a game a player has either won, lost or at least received some sort of numerical score.

Juul adds to Salen and Zimmerman's definition through a model for defining games which he calls "the classic game model" (Juul, 2005, p. 22). His aim is to create a definition that applies both to non-digital and digital games and in so doing show the relationship between them.

> A game is a rule-based system with a variable and quantifiable outcome, where different outcomes are assigned different values, the player exerts effort in order to influence the outcome, the player feels emotionally attached to the outcome, and the consequences of the activity are negotiable (p. 36).

This definition is built on six constituent elements: Rules, variable and quantifiable outcome, valorisation of outcome, player effort, player attachment to outcome and negotiable consequences. Juul argues that because *rules* can be computed by a machine or enforced by human participants, they are the common factor linking digital and non-digital games. In his account, the rules constitute the system of relations which is the game, and these rules are independent of the media by which effect is given to the rules. Rules also create the possibility of a *variable and quantifiable outcome*. This refers to a definitive state of affairs which is objectively final at the end of the game and is *valorised* by the players involved. Some of the possible outcomes are objectively better than others and therefore harder to obtain, and these valued outcomes are a result of *player effort*. The rules of the game define which player actions can influence the state of the game and thus its outcome. Therefore, the player has to invest some amount of *effort* for the game to actually occur. This effort will tend to result in an *attachment to the outcome* of the game. Winning is favoured over losing and yields more pleasure. Juul states that this element of the definition is less formal than the others and is dependent on the player's attitude. Finally the *consequences* of the game are *negotiable*. Games can therefore be optionally assigned consequences that reach beyond the domain of the game. Juul adds a proviso for this element of his definition by saying that the consequences can be varied per game session.

One does not have to look very far into these definitions to find examples of artefacts we call games that are not satisfied by their essentialist characteristics. Let's take a characteristic they both have in common: quantifiable outcomes. While both definitions can be comfortably applied to what James Carse (1986) has labeled "finite games": games that have a specific start and an end agreed upon by all players involved, this is only a limited subset of games, digital and otherwise. Infinite games, Carse explains, do not have a clear beginning or end, and thus no outcome to be quantified. Infinite games are about engagement in gameplay, not about a definitive outcome. Both Juul and Salen and Zimmerman discuss borderline cases that do not fit their definitions, but they refer to these as anomalies to a norm. But as Carse rightly points out, these are just two, broad types of games. Furthermore, Carse was considering non-digital games. When digital games are brought into the picture the existence of quantifiable outcomes becomes even more problematic, as the examples of infinite games are even more widespread. MUDs, MMOGs, multiplayer social games like *Farmville* or *Mafia Wars*, simulation games like *The Sims*, sandbox games like *Minecraft* and many more are examples of infinite games without quantifiable outcomes. And most narrative-based games that do have a start and end, cannot be said to have a "quantifiable" outcome. They end because the scripted narrative (Calleja, 2011) or spatial trajectory they chart comes to a close, but this is not really a form of quantified outcome, as much as a narrative device borrowed from century-old traditions in story-telling across media. Then there are games which blend the latter with the former: open worlds with an optional scripted narrative story line one can engage with or avoid as they please. Games like *Skyrim, Fallout* and the *Grand Theft Auto* series have a start and end to their scripted narrative lines, but they do not have an overall quantifiable outcome. This single central defining element found in both definitions removes a large portion of games from being viewed as such, making the definitions questionable, at least as an overarching definition accounting for all games.

If we consider rules, another characteristic found in both definitions that is commonly taken for granted as a defining element of games, we also run across definitional difficulties. As Gregersen (2005) points out, a "rule" is not a homogenous and straight-forward concept, but conceals a number of disparate elements, such as measures of success, descriptions of spatial, temporal and material arrangements, the existence of natural or simulated laws (one cannot have a football world championship take place on the Moon, for gravitational reasons) emergency procedures and so on.

How do we account for a digital game that has several, different sets of rules depending on the specific activity we are engaging with at that particular time? We are here referring to games like *Grand Theft Auto IV* which has a sprawling environment with overarching rules implemented and then other sub-games with their own rule-sets one can play on their own or with others such as darts or billiards. The rule-sets of the latter examples only take effect when engaging with the sub-games and have no bearing on the rest of the game experience. Do we thus have one or several games in one? What about games that have a single player campaign and a multiplayer mode with several different game modes, each of these with their own rule-sets? How do we apply a definition that has as its corner-stone a specific rule-based system to games that have multiple rule systems implemented in them, and, to make matters more complicated, provide rule-systems that are conflicting within the same space and time? Let's take a game of *Call of Duty IV* (Infinity Ward, 2007) as an

example. Let's say we are playing a conventional round of multiplayer deathmatch; trying to help our team score as many kills as possible while not giving away kills to the enemy. What we just described is the specific rule system we are presented with when we play a round of team deathmatch. But another rule system that *Call of Duty* presents us with across all multiplayer modes is the achievement system. In order for us to be competitive at the various game modes we need to level up our characters and use "perks" (abilities) and upgrade our weapons through the accumulation of XP. XP is accumulated from fulfilling game objectives, killing players and, more importantly, by fulfilling various goals set by the game called achievements. These yield a far greater lump of XP than can be accumulated by simply fulfilling mission goals and killing players (ie interacting with the individual rule-system of the respective game-mode). But these goals often conflict with those set by the individual game session's rule-system. In this case, for example, somebody else on our team is playing a different game: they are trying to kill an opponent while falling off the highest building on the map. The goals of the suicidal player are not only different, but contradictory to ours. So although we are all playing the same multiplayer mode type on the same map, the suicidal player is playing a different game than us. Our rule sets and quantifiable outcomes are different and thus it would be logical to argue that we are, in fact, playing different games within the same game environment. Neither Juul nor Salen and Zimmerman's game definitions allow for this, altogether common situation in games.

Furthermore, games without formal rules do exist, and in some cases it is unclear whether rules exist or not. For instance, puzzles and riddles, usually seen and labeled as ludic forms, do contain goals (i.e. solving them) but often they do not come with explicit rules for use. For example, an amusement park labyrinth can be played without the use of explicit rules. Because the means and goals are clear, rules are not needed. In roleplaying games, the behavior of the game master need not be bound by explicit rules, nor does the computer game necessarily have to follow specific game rules in their execution. Exceptions and special cases can be invoked in ways opaque to the player, and nothing is stopping such programs from cheating, that is, irregularly departing from the rules the player has come to expect. One such example is "the last bullet", a situation in some first person shooters where the player, facing a powerful monster and with only one round of ammunition left, is able to kill it with only one shot, something it is not normally possible to do. This is not the same as the fact that computer games contain rules that are opaque and hidden from the players, but that even these inferred rules can be skipped in situations when the player has every reason to expect them.

The above challenges with the existing definitions begs the question: are these definitions flawed or are they symptomatic of a broader problem with defining games? It is not at all clear that a game definition, even if possible, is needed for the continued healthy existence of the field of game studies. Perhaps it would even be, to some extent, detrimental to it if a common definition could be agreed upon, because this could mean that the field is closed off from useful future expansions, and also from many types of current phenomena that enriches and informs much of the field's practice. As important as definitions generally are, it is just as important to recognize which terms and concepts can and cannot be formally defined, and also which consequences the definitional act will have. This problem of unresolved definitions can be found in all academic fields, including the natural sciences. Pluto was until recently a planet, but lost its status by simple vote when a definition of 'planet' was elected that excluded it. As this

did not go down well with fans of the former planet, a search immediately began for a definition that would reinstate Pluto to planethood. As planets until that moment had not been subjected to rigorous scientific definitions, we can observe how the act of scientific terminologizing carries a high political significance, even in a field such as astronomy. Changing the definition again to include Pluto could have unforeseen side effects, such as bestowing planetary status upon the Earth's Moon (Battersby 2009).

As a nominal category, games are activities and objects that are constantly morphing and expanding. The challenge posed to game theorists is to either come up with a definition that invariably omits a good portion of these activities and objects from being games or to accept that no definition is possible. These two positions are well represented in philosophy by Ludwig Wittgenstein's argument for the undefinability of games and the critique thereof provided by Bernard Suits.

4. WITTGENSTEIN VS. SUITS

Sixty-two years have passed since the publication of Wittgenstein's *Philosophical Investigations* (1953), wherein he pointed out that the phenomena we think of as "games" could not be subsumed under a formal definition. Juul misunderstands the nature of Wittgenstein's position when he addresses this challenge in a footnote (2003):

> As Bernard Suits points out (Suits 1978, p.x), the suggestion that we should look and see whether there are commonalities to games is a good one, but it is unfortunately not really an advice that Wittgenstein himself follows.

Wittgenstein bestows the burden of finding commonalities upon those, like Juul and Suits, who would claim that these commonalities must exist, which is exactly the opposite of Wittgenstein's position. Wittgenstein merely assumes a null-hypothesis, that no commonalities exist, and therefore he does not have anything to prove, since a negative cannot be proven.

Bernard Suits took up this challenge in his work: *The Grasshopper: Game, Life and Utopia* (1978). Suits criticizes Wittgenstein's claim of games' undefinability by arguing that Wittgenstein is guilty of not following his own advice to "look and see whether there is anything common to all" (Wittgenstein in Suits, 21); that is, of not actually analysing games enough to find their defining characteristics. In response Suits delivers a book-length defence of his definition of games:

> To play a game is to attempt to achieve a specific state of affairs [prelusory goal], using only means permitted by rules [lusory means], where the rules prohibit use of more efficient in favour of less efficient means [constitutive rules], and where the rules are accepted just because they make possible such activity [lusory attitude]. (54-55)

However, Suits is here not defining an attitude as such, but rather the operational mode of accepting and following rules. One can agree to follow rules for a number of reasons and with a number of attitudes. Also, a number of activities, such as doing a school exam without cheating, would satisfy Suits' description, while clearly not being a game.

While a valiant attempt at a definition, Suits misses the central point of Wittgenstein's reason for using games as examples, *par excellence,* of undefinable phenomena: the category of activities and objects that are productively called games evolve and expand in ways that no static, essentialist definition can ever hope to cover. All we can ever manage is to define a subset of the broad

family of games. The advent of digital games, for example, severely challenges several characteristics of Suits' definition. Although digital games existed at the time of Suits' definition, it is understandable he did not cover them as they were still quite culturally marginal. So before we go into the difficulties that digital games create for Suits' definition, let us first consider his definition in relation to the games more widely available at the time of writing.

Like Juul, and Salen and Zimmerman, his definition has, as one of its central characteristics, and one which Suits emphasizes as crucial, a single goal that determines the completion of the game: "the achievement of a specific state of affairs [prelusory goal]". Suits describes three kinds of goals: the overall goal of the activity, which he labels the prelusory goal, the achievement of the prelusory goal by adherence to the rules (that is, winning the game) and the goal of generally participating in the game.

Out of these three Suits argues for the primacy of the prelusory goal, since the other two presuppose it but it does not pre-suppose the others. Suits rightly points out that the goals and rules are inseparable: we cannot achieve the second form of goal, the win, without reaching the prelusory goal through adherence with rules. For Suits, not following rules simply means you are not playing a game. As we have argued above, however, this emphasis on a definite outcome or goal à la Salen, Zimmerman and Juul, leaves out all games that Carse has identified as infinite. Of course we can say that these are not actually games at all, but then we are hard pressed to pin down what they actually are. Suits defends himself against the critique that some things he has called games are not always called games, such as races, by arguing that games are the category of objects that best describes races as there is no other category of objects that better describes them and thus he is justified in placing them under the game subset. What Suits does not do, is go through all, or at least some, of the games that do not have a stipulated goal and make a case for them being more readily fitting some other category of ontological objects. The only example from these open-ended games he does comment upon is *Ring Around the Rosie*, which he feels is better described as a theatrical performance rather than a game. But when was it ever performed in a theatre?

Suits explains that his method of data collection to establish his definition involved settling on a number of games that he calls "hard core games" (164) which, in his words "if members of this group are not games, then nothing is. In this category I included places, bridge, baseball, golf, hockey, chess and Monopoly – things everyone calls games" (164). The problem here, of course, is that this list of hard core games is entirely culturally specific, if not entirely subjective. But even if we stick to this criterion, that of games which are generally considered to be such by the majority of people in Western culture at a specific historical point, the advent of *Dungeons and Dragons* occurred 4 years before the publication of Suits' definition, and by the time of Suits' writing, it had become a widespread phenomenon, closely followed by its digital offspring: *MUD* in 1978. The existence of, and the table-top wargame legacy behind *Dungeons and Dragons* meant that it is intensely rule-based but utterly open-ended. It would be hardly logical to apply Suits' evasive tactic of claiming that this was not a game, since it is a thing everyone calls a game.

The advent of D&D and digital games not only explodes this category of rule-based things that have no specific goal into such a multitude of game genres that it becomes impossible to claim that all such things are not games, but it also undermines Suits' other core characteristic of games: the lusory attitude.

The lusory attitude is the mode of experience into which a player enters when they engage with and abide by a game's rules:

> The attitude of the game player must be an element in game playing because there has to be an explanation of that curious state of affairs wherein one adopts rules which require one to employ worse rather than better means to reach an end (p. 52).

The voluntary decision to follow an inefficient course of action in order to play by the rules only applies to the socially negotiated aspect of digital games yet the majority of actions possible in digital games are programmed into the game system and cannot be changed. To stick to Suits' own example, if in physical golf we can use more efficient means to grab the golf ball by hand and place it in the hole, in the digital version of golf we cannot do this. We simply do not have at our disposal anything but what Suits calls the "inefficient means" to perform our chosen task. To bring another example, one cannot decide to ignore the rules written into a game like *Fable II* (Lionhead Studios, 2008) and, for example, drag a chair found in one's house to the town square and decide to sit there. The game does not allow for this to take place because the actions are not programmed into it. Similarly the player cannot jump off a low ledge onto the ground instead of running around the prescribed path simply because it would be more efficient because *this* particular game does not allow that. More efficient ways of doing things outside of the rule structure imposed by the game are simply not available to the players of digital games. The criterion of inefficiency that Suits requires through his lusory attitude is a cornerstone of his definition and quite simply put, this element is redundant in digital games as no alternative exists.

Thus, if we had to follow Suits' logic, our inability in a number of digital games to voluntarily adopt inefficient means in playing them means that we cannot enter into a lusory attitude, and thus such activities are not games. Of course, a cheat-code or game hack can be used, but by Suits' own definition these are not within the rule-set of the game so engaging them would mean, for Suits, that one is not playing a game at all.

5. PROCESS VS. OBJECT

As discussed earlier, the primary aim of this paper is to facilitate discussions within game studies by providing an analytical framework that acknowledges the wide variety of cultural artefacts we refer to by the "game" label. There have been a number of debates in the field that have been complicated unnecessarily by a lack of agreement upon the exact subject of discussion. The involved parties might be discussing "games" without making it clear which members of the family of games are actually considered in their analysis.

One of the fundamental distinctions that have been made when discussing games is that between *game as object* and *game as process* (Cf. Aarseth 2001, 2007). A board-game like *Settlers of Catan* is both a set of material objects imbued with signs that may make sense in and of themselves as well as accruing a more specific meaning through the accompanying set of game rules. These rules are intended for interpretation and deployment by an implied player or group of players and their associated socio-cultural context. We can discuss various aspects of the game as object in isolation from the actual situated playing of that game. In relation to *Settlers of Catan,* one can comment on the visual qualities of the hexagonal board pieces or the colour scheme used in its deck of cards. One may be critical of the value of the robber in the game, which blocks players from drawing resources from the tile on which it is placed. A genealogy of board-games may

consider the influence of *Settlers of Catan* on subsequent board-game design, and so on.

This can also be applied to digital games. The majority of rules are coded into the game instead of being upheld by players and the material objects involved in its enactment are the software and hardware machines that run them instead of physical game pieces, but the consideration of the game as a tangible object separate from its actualization through player activity remains the same. All of these concerns relate to the *game as object* and although they tend to have important implications on the actual game-session, we need to acknowledge that the subject of our discussion is the object and not the process.

The *game as object* is always partial or incomplete. The dormant code, board pieces or rule-set present a potential that is actualized during game-play; in other words, when a player or players use them.

This brings us to the second perspective: *games as process*. Social theorists like Taylor (2006) and Malaby (2007) have made arguments in favour of a processual approach to understanding games. Malaby argues that:

> One of the first things we must recognize is that *games are processual*. Each game is an ongoing process. As it is played it always contains the potential for generating new practices and new meanings, possibly refiguring the game itself (8).

The term "processual" refers to the potential for change in every engagement with the game and favours a dynamic and recursive view of games. A processual perspective thus presents games as ever evolving and socially contingent in a manner consistent with other domains of social experience. The processual nature of games also presupposes a ludic perspective from the part of the player towards the game object. One person might look at a set of marble chess pieces laid out on a chequered board as an on-going game of chess where white's rooks are threatening the black queen in order to subsequently move in on the queen, while another individual sees a set of decorative objects and yet another a number of solid projectiles on an unattractive black and white board. The last two might have a different perspective on the chess set than the first due to a lack of knowledge of chess as a game system, or due to the affordances of its pieces to a need they have. Either way, it is only when one takes a game perspective on the chess set that a game of chess can proceed. This distinction might sound trivial in the case of chess, since it is such a popular game with a widely known rule system, but, as we will see in later sections, it is crucial to acknowledge the fact that a thing some people call a game might not be a game at all for others. What is important to keep in mind is that this ludic perspective is just that: a perspective. It cannot be defined exactly because it is a subjective view of what a game is that varies from person to person, from culture to culture and across time. A perspective cannot be pinned down with a subjective definition. It is not simply a matter of looking and seeing what a game is, because there is nothing to "see". The qualities of a game shift according to the individual or social group that enact its playing. The game is in the seeing, not in the seen.

This emphasis on game as perspective has particularly strong implications for our current understanding of digital games. The objects we call digital games are not games in and of themselves. They are software applications that are designed to afford one or several simultaneous game perspectives. Several people can be interacting with others on a specific server and a specific map of the multiplayer part of a *Call of Duty* session, with all of them playing different concurrent games. We will delve deeper into this below. Other times individuals may be interacting inside a game world without engaging in any aspect of the game, but just using its virtual environment as a meeting place or a source of great screenshots to print and hang up on their office walls.

All this does not mean that digital games are some amorphous, undefinable mass that is impossible to interpret or comprehend. On the contrary, we believe there is a clear way to *describe* digital games that lays out their basic constituent elements and how these relate to each other. Unlike an essentialist or disjunctive definition, our description is not static and ahistorical, but dynamic. It does not dictate those characteristics that are specific to games and only games, but outlines general elements that are present in games and a number of other systems. What makes any of these systems such is, ultimately, the subjective ludic perspective taken on it. This results in a model of games which is over-productive, but useful in its inclusiveness.

6. GAMES AS CYBERMEDIA

The descriptive model we are proposing here builds upon Aarseth's (1997) cybertext framework which sought to conceptualize ergodic (materially dynamic) literature in a more accurate manner than the earlier distinctions of digital/non-digital and interactive/non-interactive media allowed:

> The concept of cybertext focuses on the mechanical organization of the text, by positing the intricacies of the medium as an integral part of the literary exchange. However, it also centers attention on the consumer, or user, of the text, as a more integrated figure than even reader-response theorists would claim. The performance of their reader takes place all in his head, while the user of cybertext also performs in an extranoematic sense…This phenomenon I call *ergodic*, using a term appropriated from physics that derives from the Greek words *ergon* and *hodos*, meaning "work" and "path". In ergodic literature, non-trivial effort is required to allow the reader to traverse the text (1).

The non-trivial effort required from the user is an important cornerstone of a theoretical model of games. Aarseth also places importance on the role of mechanical system at work beneath the sign surface. This gives three factors whose interplay yields the cybertext: human operator, (verbal) sign and medium. These form a matrix where each of the vertices effects and is effected by the other two. Although Aarseth included (text) games in the category of cybertexts, the aim of the work was not to describe games as a specific category, but to demonstrate that the cybertextual perspective could be applied to them as prime examples.
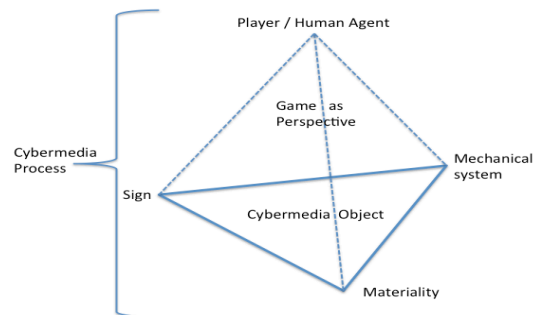

Fig. 1: 'Game' as perspective on cybermedia objects and processes

The triadic matrix that Aarseth posits more generally for cybertexts will here be expanded into what we are calling a descriptive model that includes game phenomena, but also others, which we call cybermedia. This over-productiveness is as it

should be, since we (along with Wittgenstein) don't believe it is possible to build a model that just frames games and nothing else, and, if all games are framed, we will inevitably also have caught other fish in our net. The model we are proposing here frames a more general class of phenomena (cybermedia) to which games belong, and is a matrix constituting four elements: the representational (or surface) sign, the mechanical system the material medium and the player. In so doing we are dividing Aarseth's composite notion of medium as both channel and machine into two separate aspects: the material medium and the conceptual/mechanical structure. Each of these will be described briefly below.

6.1 Sign

The first element of the framework, the *sign*, will here refer to the general sense of *one or more systems of signification,* whether this is alphanumeric text, imagery or sound or other expression types. Our concept of sign follows general semiotic theory (Eco 1976) and refers to the interpretable, "surface" representational elements that players read/observe in order to be able to use/play the game.

6.2 The Mechanical System

The mechanics corner of the matrix represent the machinic operations which structure the process, e.g., to switch from one state to another, or simply to change some informational condition, great or small. Any mechanical change that can potentially be recognized as such by an observer with sufficient access to the system's informational sphere will have been effected by the mechanical system, be it purely informational, or, in the case of physical media, a material alteration with processual consequences. An example of a mechanically irrelevant change is the specific placement of a chess piece within a square. The placement of a piece touching two squares, on the other hand, would be an illegal move and therefore with processual consequences.

In the case of a mentally upheld process, such as a dual-blind chess match, the mechanical system is the shared responsibility of the players. In such cases the corners of our model collapses into a bipolar dimension of sign – player(s), but the mechanical system would still be accessible through player communication.
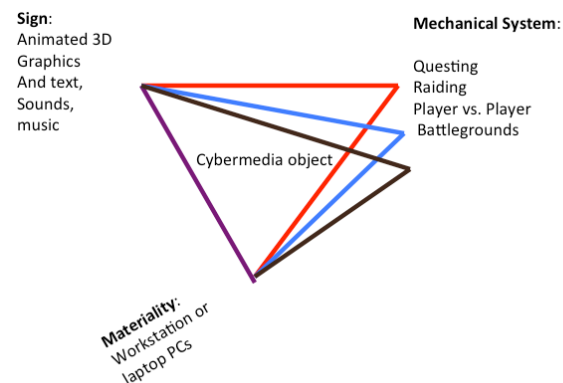

Fig. 2. World of Warcraft: one sign system, one material medium, several mechanical systems.

The notion of a mechanical system underlying the representational sign layer is a crucial component of cybermedia, whether biologically, digitally or analogically based. However, in some cases the mechanical system is interchangeable and flexible, while it may be the material or semiotic basis that makes us recognize a particular cybermedium/game. For instance, *World of Warcraft* has several mechanical systems that are not all active for the same

player at the same time, but the player may switch between them and the activities they define, at will (See figure 2).

6.3 Material Medium

The specificity of the material instantiation of the cybermedium, the hardware, needs to be taken into consideration. Even if the same semiotic and mechanical system is being discussed, its material incarnation on one platform will influence its form and experience to varying degrees. To take a game example, playing a real-time strategy game or a first-person shooter using a Playstation controller makes for a very different game than playing the same title on a PC using a mouse, for example. Different types of hardware also allow for different social contexts in which cybermedia are used. For example, Nintendo DS systems are handheld devices small enough to fit into a jacket pocket and easily connected via infra-red ports, permitting a wider variety of contexts and thus different experiences, than, say, a home PC enables, with a laptop somewhere in-between.
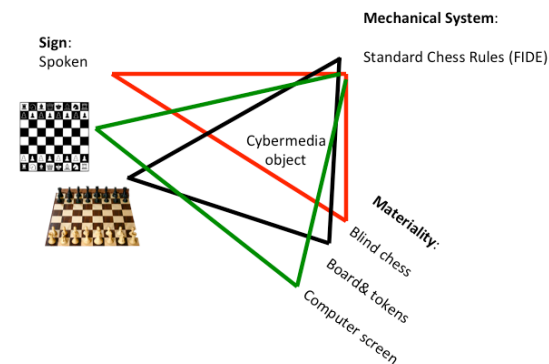

Fig. 3. Chess: several sign systems, several materialities, one mechanical system.

We can also consider a second example which highlights the relationship between physical and digital cybermedia from the world of boardgames. Taking a physical incarnation of *The Settlers of Catan* and its digital port, the importance of materiality becomes particularly marked. Although the rules of the game remain the same the practice of playing the game is going to be different. The lack of a tangible board laid out on a table, resource cards held up by players and game pieces creates a markedly different incarnation of *Settlers* that the model importantly accounts for. Whether this can or should be called a different game altogether is less important than having an adequate analytical tool to account for the differences.

6.4 Player

The above three elements form the matrix of relations that describes the cybermedium as object. We express this as the base triangle of our pyramid diagram to signify that it can be studied or considered in isolation from the user (or player, in the case of games), as an artifact. In our nominalist perspective, games are those cybermedia objects that users identify as such. Games are thus an individual or a group's perspective on the perception of a cybermedia object. It can thus be the case that two individuals view the same cybermedia object as both a game and not a game. E.g., for some it *World of Warcraft* is viewed and used as a game, while for others, it is a social space. An individual may change their perspective on a cybermedia object, viewing it as a game on one occasion and a different form of cybermedium on another.

Another example is the simulational-literary genre of text adventures that emerged in the 1970s. These software applications were soon labeled "interactive fiction", and it was not obvious, at the time, that they should be called games.

We use the term *player* to refer to the human agent, or agents, that engage with those cybermedia objects that are commonly referred to as games. The use of the term "player" should not, however, be limited to the characteristics commonly attributed to "play". We are not here subscribing to a notion of play that prescribes a particular experiential disposition, such as "playfulness" (however that is conceptualized), to the human agent engaging with the game. We are here using the term "player" instead of "human agent" to keep with the convention within game studies to refer to the latter with the tag "player".

We conceive of the player corner of the matrix as the actual, active player that engages with the three other elements described above that form the cybermedia object.

As outlined above, for the object or system to become a game a player needs to think of it as such. That is, she needs to actively interpret the activity as a game for it to be considered a game at all. The set of practices she deploys in doing so are always considered in relation to the social and cultural contexts of the player. These have an important formative role in the individual's perspective and disposition prior and during engagement with the game object.

In the enactment of the game as process it is often the case that different players engaging the same mechanical system, signs and material medium have different perspectives on which game they are actually playing. The variation in perspective can come from a simple misunderstanding of the rules or a different, self-created game, or through a conflicting set of rule-systems and goal hierarchies implemented in the actual object itself.

7. CONCLUSION: Games are Perspectives on Cybermedia Objects and Processes

"Game", "Play" and "Gameplay" are discursive operations, used to point out and mark certain objects and practices in a specific way. To identify the use of the ludic perspective it is enough, for us, to know that someone would find a cybermedia phenomenon ludic. So instead of a definition of games, we merely have to point to a discursive practice whereby a phenomenon in the larger and definable category of cybermedia is being tagged as such. Whether that phenomenon "really is a game", is not something we can determine, any more than whether the feeling someone purports to have is "real love", "real guilt", etc.

Within the category of cybermedia, games are simply those members that are cybermedia *and* referred to, by someone, as games. If some phenomena or objects outside this category, e.g. love, war, and business, are *also* referred to as games, they are not targeted by our model, since they are not cybermedia. Typically, those examples would be seen as games in a metaphorical sense, which means that they are, primarily, something else. In addition, many objects and phenomena that are not games also belongs to the cybermedia category, such as playing an instrument, using a word processor to write a text, using *Photoshop* to modify a photograph, marking trees or cattle with a paintball gun, etc. Operationally there is no difference; instead, the difference is discursive. They are not games simply because no one labels them as games, and only as long as no one does.

8. REFERENCES

[1] Aarseth, E. 2013. "Ludology", in Wolf & Perron (eds.) *The Routledge Companion to Video Game Studies.* Routledge.

[2] Aarseth, E. 2012. "A narrative Theory of Games", *Foundations of Digital Games Conference Proceedings.,* p. 129-133.

[3] Aarseth, E. 2011. "'Define Real, Moron!' -Some Remarks on Game Ontologies". In S Günzel, M Liebe & D Mersch (eds), *DIGAREC Keynote-Lectures 2009/10.* vol. 6, Universität Potsdam, Potsdam, pp. 50-68. DIGAREC Series.

[4] Aarseth, E. 2007. "I Fought the Law: Transgressive Play and The Implied Player", *Situated Play: Proceedings of the Third International Conference of the Digital Games Research Association (DiGRA)*. Pp. 130-133.

[5] Aarseth, E. 2001. "Computer Game Studies, Year One", in *Game Studies*, vol. 1, issue 1. gamestudies.org/0101

[6] Aarseth, E. 1997. *Cybertext: Perspectives on Ergodic Literature*. Johns Hopkins University Press.

[7] Battersby, S. 2009. "Going Round in Circles", in *New Scientist*, 25 July, pp 44-5.

[8] Caillois, R. 1961. *Man, play, and games*. University of Illinois Press.

[9] Carse, J. P. 1986. *Finite and infinite games. Ballantine*.

[10] Eco, U. 1976. *A theory of semiotics*. Indiana University Press.

[11] Gregersen, A. 2005. "Designers, Games and Players: Same Game, Different Rules?" Copenhagen: DAC 2005.

[12] Juul, J. 2003. "The Game, the Player, the World: Looking for a Heart of Gameness". In *Level Up: Digital Games Research Conference Proceedings*, edited by Marinka Copier and Joost Raessens, 30-45. Utrecht: Utrecht University, 2003.

[13] Juul, J. 2005. *Half-real: Video games between real rules and fictional worlds*. Cambridge, Mass.: MIT Press.

[14] Malaby, T. M. 2007. "Beyond Play: A New Approach to Games". *Games and culture*, *2*(2), 95-113.

[15] Murray, J. 2004. "From game-story to cyberdrama." *First person: New media as story, performance, and game*, *1*, 2-11. Ed. Noah Wardrip-Fruin & Pat Harrigan. MIT Press.

[16] Myers D. 2008. "Play and Punishment: The Sad and Curious case of Twixt." In S. Mosberg Iversen (Ed.) *Proceedings of the [Player] conference*; Copenhagen, Denmark, August 26- 29.

[17] Næss, A. 1966. *Communication and argument: Elements of applied semantics.* Oslo, Stockholm: Universitetsforlaget, Sv. Bokförlag.

[18] Salen, K., & Zimmerman, E. 2003. *Rules of play: Game design fundamentals*. Cambridge, Mass.: MIT Press.

[19] Suits, B. 2005. *The Grasshopper: Games, life and utopia*. Broadview Press.

[20] Taylor, T. L. 2006. *Play between Worlds*. MIT Press.

[21] Wittgenstein, L. 1953 [2001]. *Philosophical investigations*. Hoboken, NJ: Wiley Blackwell.

[22] Wolf, M. J. (Ed.). 2001. *The medium of the video game*. University of Texas Press.