The Ontological Status of Game Ecologies

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Introduction

A computer game is an artefact that prescribes that their players act in certain ways and that they shall traverse certain motivational structures in the course of play. In this article I aim to examine the ontological status of these acts and of the agential structures they appear in.

The first part introduces the notion of a *conative ecology*. I argue that the notion of an "affordance" is unsuited to use as a basic concept to determine the reality status of the computer game environment, as an alternative I propose to analyse such ecologies as consisting of *agential properties* that determined by the contents of practical reasoning.

In the next part I discuss representationalist understandings of game ecologies. I argue that we fail to see what games are if we assume that they essentially are *systems of signs*. While most games do utilize system of signs, I hold that their main function is to prescribe action guiding properties that are endowed by cognitive mechanisms very similar to those we use when we establish social ontologies.

In the remainder of the paper I work out a proposal that game ecologies consist of artificial similarity spaces imposed by a process I call "deconditionalization", and use this proposal to characterize the nature of computer game ecologies. I put forward the claim that the function of the game mechanism is to instantiate *forms of actions* that are to be acted on for their own sake. The outcome of this proposal is an understanding of computer games that make them out to be *works of actionable structures*.

Conative Ecologies

The notion that we experience the world in terms of "affordances" was introduced by James Gibson (1950) and has been given a central place in an approach to perceptual learning called ecological psychology. The idea behind the notion of an affordance is that organisms perceive what the "environment *offers* to the animal, what it *provides* or *furnishes,* either for good or ill" (1986: 127). Gibson's own theoretical elaboration of the notion of an affordance is tied to the idea that the perceptual system attuned to pick up information carried by an "ambient light array" which transmits information about the environment.

The notion of an affordance gives rise to a general conception of an environment with features determined by its role in action. This general conception can be adopted in different theoretical frameworks and for purposes other than Gibson's own. (Norman 199) (Noe 2005) (Linderoth 2013). We can say that such approaches have the notion of a *conative ecology* as a common subject matter. A conative ecology can be defined as a set of objects, situations,

properties or relations in an organism's environment that are identified by the way in which they guide its actions.

Let me mention some examples of components in conative ecologies: A door is an object with properties that allows someone to pass on to another room. A piece of food is an object with properties that will nourish. A hill face is an obstacle for travelling. Artefacts like hammers, computers, doors and webpages can be regarded as objects designed for the very purpose of offering conative possibilities for the users. Games in general and computer games are particularly clear examples of artefacts which are designed to create conative ecologies for their user.

It is entirely natural to say that it is *true* that a door can be opened, that a stone can be used as a paperweight, that a tiger is dangerous; that a chess player had an effective opening gambit and that you can shoot monsters in computer games. But what kind of *reality status* do such properties have? Furthermore, is there a difference with regard to the reality status of the conative ecologies we find in the perception of everyday environments compared to those that are found in media or games?

We can begin a discussion of these questions by making the observation that these examples seem to cover distinctively different cases of conative ecologies. It is useful to distinguish three kinds of cases which will shed light on the question of game ecologies. There is first the *primary case* of everyday objects and events, there is then the case of *classic games* and finally there is the case of *computer games*. To have a ground for comparison, let me mention three kinds of examples of how we describe the interaction that occurs with such conative ecologies.

Primary Case: Stephen wants to drink a soda at the office. He asks where to get one, and gets the response from a colleague that it is possible to get one at the third floor above him. He looks around and sees an elevator, which he realizes can be used to transport him to that floor. He sees a button with the number "3", which he presses. The door opens, and he takes the elevator to the third floor. He sees a vending machine, and realizes that he needs money to use it. He puts on a coin, and gets bottle of soda.

Classic Game Case: Mary wants to win a game of chess with Sarah. She is in the final stages of the game. She she sees that her knight would threaten Sarah's king if she moved it to position g8. She proceeds to put her knight in position g8. She checkmates Sarah's king.

Computer Game Case: Bill is playing Bioshock (2k Games, 2007) and wants to enter a railcar that will take him to another part of Rapture. He sees that the corridor is blocked with ice, and finds no way pass. He realizes that he needs the plasmid "incinerate", and turns and walks back to an upgrade station. Using his limited funds, he buys the upgrade and implements the ability. He turns to the ice, melts it, and walks on to the railcar.

All of these cases describe conative ecologies, and illustrate the close reciprocal relationship between the descriptions of the mental attitudes and the actions performed on the one hand and the descriptions of objects and events on the other. The objects and situations - like elevator, vending machine, coin, knight, king, the position that opens in g8, the railcar, the corridor, the ice and the fact that it blocks the way - are objects and properties that are conceptualized in terms of what the user can do with them. These actionable features also enter into the description and individuation of actions themselves, since asking, pressing,

putting, checkmating, winning, melting, moving, are actions that depend on the individual *achieving certain goals* with the objects she has mental attitudes about and that she interacts with.

We can establish several features that enter into such conative ecologies. First, there appear to exist *action-types* that are identified by the kind of effects that the individual is achieving in the environment. Then there are *objects and events* that are used to individuate the action types and mental states. There are *situational scripts* which are the expected physical behaviour of objects and situations. And there are *motivational structures,* which are the way in which interaction with the environment in systematic fashions create motivational situations for the user.

We can observe there are two kinds of sources we use to identify the character of these conative ecologies. It is the *descriptions we use of the environment* on behalf of the agent, and it is the *action types* we attribute to her when interacting with it. Thus we can say that what we are looking at are descriptions of the following sort:

(1) Ga

And

(2) S performed a φ-ing

The former description apply a general term describing some putative property of the environment, like meltable, closed or dangerous, while the singular term *a* tracks an object or other particular, such as a door or a vending machine. In the action-description the schema "φ-ing" stands for an action verb, like "running", "talking", "threaten" and the like.

Our intuitions about the reality status of components of the conative ecologies are informed by what makes statements about them assertable. Thus, we distinguish between correctly and incorrectly asserting that someone opened door, put on a coin, melted the ice or check-mated the other. Such reports are typically phrased using the same set of predicates and singular terms that would be used to report the agent's own mental states, and they seem to imply some claim to existence with regard to the properties and objects that must be presupposed in order to make them assertable.

It is clear that though assertable, they seem to hold different answers with regard to the reality status of the features described. In the primary case, we have no problems identifying stones, and doors in its ontology, nor the fact that a person is running or opening a door. Matters are different with regard to games. We know that the knight is not really a knight and it perhaps puzzling on closer consideration whether there *really* is such a thing as checkmating. The problem is especially prominent for traditional computer game environments, since it is not at all clear whether there is such a thing as "running", "shooting" or a heap of ice in Bioshock. Or to put it another way, we do seem to think that it is correct that there are such things, but

we hesitate on the one hand to say that they as unreal as imagined objects in fictional stories, and on the other nor do we tend to regard them as real as objects described in the corresponding reports in the primary case.

By itself, it seems the notion of an "affordance" posited to be perceived by an ambient light array is not capable of answering these questions. Rather the ontological investigation of how to account for the relationship between the reports in (1) and (2) appears to be *prior* to the ontological question of what an "affordance" is. Furthermore, it appears that the notion of what someone can do with an object only captures one type of role that environmental properties play a role in action, since in addition comes properties that indicate the kind of value that an object may have to you, and also the instrumental role it may have in finding out what to do.

What determines the relationship between environmental descriptions in (1) and the descriptions of actions in (2)? What is clear in all of these cases is that these properties specifically emerge from the motivational situation of the user. The problem with the notion of an affordance is that relies on an undefined notion of agency. To have any prospects of addressing the ontological question, we need a deeper account of the relationship between *agency* and *ecological features*, and I will now propose a model that attempts to trace the exact character of these properties to the motivational situation if the player. This analysis will allow us to go beneath the notion of "affordance" and to examine in much greater detail the cases of games and virtual environments.

The central point I wish to pursue is that conative ecologies arise from the fact that they function as *reasons for actions* for agent, and that we can provide an account of the nature of these ecologies by studying their role as reasons. I will hold that the various aspects of conative ecologies, such as action types, object scripts and motivational structures can be derived from an account of agential properties (Sageng 2015). I will outline a simple model for such properties based on practical reasoning which will enable us to formulate a theory of such properties.[1]

What is an action? One broadly Davidsonian approach to this question, which in turn is placed within an Aristotelian framework about practical reasoning, will answer question in the following way: It is an event which is intentional under at least one description (Davidson 1963). A person may as an action turn on a light switch, and as a result alert a burglar to your presence.

What makes this event into an action is the existence of a practical reasoning which rationalizes the action. While these may be the same event, it is the first description which contains a reference to the fact that the person *intended* to turn on the light switch. The role of this rationalization can be brought forth by the classic case of a practical syllogism, which

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[1] This standard model constitutes just one way one may approach the phenomenon of action, but I do not have the space to problematize these aspects here. I suspect that my main points will can be transposed to other approaches to the character of action. This model is in some sense too advanced for all conceptions of agency, since applies to creatures which can be guided by conceptual content and logical inferences, but since these features will be crucial to understand game ecologies, I will leave aside the question of how to characterize agential properties for creatures that are unable to possess propositional attitudes.

traces a connection between what the individual values, what she takes to be the case about the world, and what she then acts on. According to Aristotle, an action is recommended by a pattern of reasoning that serves as a basis for performing a given certain action. This is the well-known example of a practical syllogism from the Nicomachean Ethics (Aristotle, 1999).

Dry food is good (Major normative premise)
This is dry food (Minor factual premise)
Therefore, this food is good (Particular normative conclusion)

Thus, according to this understanding of rational action, an action consists of some sort positive attitude towards ought to be the case, which may be derived from emotion, likings, preferences and so on, and it must be combined with a factual belief. Somehow, the conclusion of this practical syllogism is transferred to an *intention to act*, which may then be carried through by the agent.

Following Davidson, I will adopt the term "pro-attitude" to describe the attitude towards some states of the world, and talk of factual beliefs that form the basis for practical reasoning that is able to support an intention to act. The pro-attitude will contain the description of some states of the world with some sort of *valorisation,* i.e. some feature determining the character and strength of the attitude that some feature of the world "ought" to be the case.

Finally, we may talk of the *reason* that the agent has to act as the pair of a factual belief and a normative-pro-attitude that forms the basis for practical reasoning. We can furthermore say that practical reasoning in this fashion serves to formulate an *attainment condition* for the action in question. Thus in the practical reasoning above, the attainment condition is ontologically dependent on the establishment of action guiding features in the major normative premise (dry food) over the factual minor premise to the content of the intention: "I want to eat dry food". Acting on the intention is *successful* insofar as the agent manages to make the world fit with his pro-attitudes and unsuccessful otherwise. From the fact that it is the intention (i.e. the intention to eat of dry food) that makes the event into an action, it follows that the agent is guided by his understanding of the properties as conceptualized in his pro-attitudes in a manner which satisfy the demands of cognitive and conative rationality.

I propose further that we think of the ecology as being the outcome of a *particular way to represent the phenomena* they contain. We can say that the perceptual apparatus consists in an ability to discriminate between various features of the surroundings, and that the properties and other features of the surroundings that are relevant to cognition and action are those that he individual reliably can identify. We can say that the link between environment and the kind of properties that enter into propositional attitudes in action depend on a dispositional *similarity space* that the agent can latch onto when making cognitive commitments. In other words, the individual is perceptually capable regarding colours, cats, cups, vending machines and money notes as similar, and this discriminating ability supports the features of the individual's environment that make them out to be components of a conative ecology.

Given this sketch of the motivational situation an agent, and the way in which it connects the descriptions of the environment and the way she forms intentions when acting, we can now proceed to study the nature of the agential properties in the primary case.

The proposed criterion for an agential property is now that they consist of the kind of properties that are transferred from a pro-attitude, over factual beliefs, to the goal attainment condition given by the intention of the agent. I'm deliberately keeping it open the exact role that agential properties have. It may be properties that serve as enablers for what an individual can do, but it can also be properties that are capable of guiding practical reasoning in any other way.

What kind of things are these agential properties? It may easily be held that they are not real properties of the environment, but merely some sort of *projections* or overlay of actual properties of things. However, it there is no reason not to regard them as real, at least in many cases. We can rather say that agential properties, via their dependence on pro-attitudes of an individual, merely are cases of *relational* properties, like being high or fast. Being an agential property of an environment merely means that that it plays a *proper role in the practical reasoning* for some subject S, and it remains a "fact" that it can do so, even though it does not play a role for one who does not have these attitudes. A visitor to a prison may not personally care about features of the prison that may make it possible for the prisoner to escape, but she can be aware of these ecological features nonetheless. It is perhaps possible, that in the widest sense of the word, that any property can be an agential property, because it is possible that any property can be appropriated to guide action in some sense.

Since the agential properties are determined by the pro-attitudes of an individual, they often give rise to conative ecologies that are different from individual to individual. The properties that guide the attainment-conditions for the intentions for one person may not enter into the attainment-conditions of the intentions of another person. One person may like coffee, while another does not. One person may appreciate horror movies, to which another is indifferent. However, this is not a reason to call them "subjective" as opposed to "objective", any more than it is a "subjective" property of Harry that he is higher than Bill, because Harry also is smaller than David. It is a real relational fact that certain features of the surroundings can guide the actions of the individual given her pro-attitudes.

It is a part of their objectivity that an individual can be *mistaken* about whether some agential property is instantiated or even that it exists. One possible model for the existence of agential properties may be certain interpretation of secondary sensory qualities, which are commonly taken to be relational in the sense that they depend on the specific way the sensory organs pick up the qualities of surfaces and which are dependent on how they are experienced to a mind. Despite this dependence, it is possible to hold that they exhibit a degree of objectivity, because what counts as a specific colour depends on certain normal conditions for lighting, the proper functioning of the eyes and so on. Something similar holds true for the properties that enter into conative ecologies. The spurious pro-attitudes of a deranged person do not exhibit enough coherence or permanence to establish action-guiding features of the surroundings. Furthermore, a person may be mistaken in her reasoning about how to change the world to achieve what she wants. The pro-attitudes may conflict, and not recommend a consistent course of action. In some cases she may also be mistaken about her own pro-attitudes.

The agential properties that determine everyday conative ecologies are relational in the sense that they are defined by their role in pro-attitudes. However, they still come in many kinds, depending on the character of these attitudes. The attitudes may be preferences, likings,

duties, emotions and so on. They may be *autotelic*, like the value attached to play or drinking wine, or they may be instrumental like the value attached to going to work or using a tool for some further purpose. They are frequently interconnected, since the normative premises in practical reasoning may either be derived from other more general practical reasons, or they may be weighed off against conflicting reasons. They may be *idiosyncratic*, based on the individual likings of different individuals, or they may be strongly *intersubjective*, like the properties that follow from ethics, logic or settings where there is a shared set of pro-attitudes, such as the corporate aim of a business.

The properties that guide action in this fashion may be said to come in two main varieties. On the one hand there is *fundamental base* for all agential properties, which are properties which merely are *appropriated* for action guiding roles. On the other hand there are those that are *constitutively* action guiding.

An appropriated agential property is a property that is what it is independently of any role in action. The clearest case for such properties will be the properties of physical reality as described by the laws of basic physics. The properties relate to their roles in nomic behaviour of physical phenomena, and they are what they are entirely on these roles. The same probably holds true of the features of the lifeworld-phenomena of middle-size dry objects that we interact with, though it is an interesting separate question of whether these are entirely independent of their role in action. One might argue that our concepts of solid objects, situations, and causal features are in fact their contribution to similarity spaces determined by the manner in which they can be manipulated by us, or the way in which they frustrate or facilitate our actions. If a physical object suddenly ceased to be something we could lift, move or which obstructed our actions, we might prefer to hold that it no longer was an object of its kind. If this is the case, the domain of constitutive agential properties extends to our normal life-worlds. It seems at the very least likely the properties we relate to our lifeworld-ontology are those that have *benefited our survival in evolutionary adaptation*, and in this sense have a sort of intermediate status between appropriated and constitutive agential properties.

Of particular interest to the subject to the subject of game ecologies is the nature of *constitutive agential properties*. Ethical properties, many social properties and possibly logical and mathematical properties are properties that would not exist unless they could serve some sort of role in action. It may be possible to characterize the role of constitutive agential properties by using the notion, found in Gibson and others that the role perception is to *transmit information* about the surroundings to the individual. If we hold on the notion of a similarity space, the grounding for agential properties consists in inclinations to regard features of the surroundings as similar, and that these capacities serve to ground the properties that are conceptualized in the pro-attitudes of the individual. In the case of appropriated agential properties, these similarity dispositions can be said to transfer information about them that *obtain independently of the attainment conditions* of the individual. The cognitive role of perception and cognition is such cases is merely serve in the function of epistemically *foregrounding* these properties to the agent so that they become accessible to the successful satisfaction of attainment-conditions. This is not the situation for constitutive agential properties, since those features of the surroundings are similar *in virtue* of their contribution to attainment conditions.

I will in particular here point out especially important case of constitutive agential properties, one which will serve as a component in my analysis game ecologies in the next sections. These are themes especially made popular by John Searle's *The Construction of Social Reality* (Searle 1995).

Important agential properties are those that govern our interactions with other people. Thus, something becomes a fence in virtue of its contribution to the frustration of the attainment-conditions of some people (those who want to pass) and the success of the attainment-conditions of those who put it up (those who want to prevent people from passing).

A particularly important case of constitutive agential properties to the modern human is the presence of signs in speech, writing, in the form of depictions or sound recording in media. These signs serve the agential role of communicating some content to other people, and thus they exist in virtue of whether or not they serve such aims for the users. It is here important to distinguish between the kind of representation that exist in mental states of the individual on the one hand, and the kind of representations that are used in communicational practice on the other. The latter owe their status as agential properties in virtue of their role in a practice and they depend for their existence on the former.

Searle (ibid) has proposed an analysis of a special kind of social properties that he thinks derives from what he calls "status functions", which he analyses as the kind of duties and powers which are given in interaction by functions satisfying the schema "X counts as Y in C". Examples of such properties may be being a leasing contract, a waiter, a policeman, or a money note with the value of e.g. 10 euro. In these latter cases, knowledge of, and adherence to such rules mean that these properties enter the similarity spaces of the participants in virtue of a practice which is successful merely in virtue of whether it serves the satisfaction of some practical aims.

Adapted to my own framework, we can say that in these latter cases, there is a *dual set of similarity responses*, since the participants must first able to recognize the kind of properties that take the place of "X" in the status function, such as pieces of paper or persons, and secondly they must be able to regard them as similar in virtue of property they are endowed with, such as being a money note with a certain value.

Against Game Ecologies as Semiotic Systems

Having discussed the nature of agential properties in the primary case, and how they can be seen as various types of relational properties that arise from individual's pro-attitudes, we can now turn the two other cases, those of classic games and of computer games environments.

These cases both describe *parts or domains* of the primary case, so they are contained within normal ecologies. The players of a board game like chess, sport like soccer, or a computer game system like PS4, perceive and cognize features of the ordinary world, but they are localized ecologies which are islands in the sea of ordinary motivational structures, since they for the most part do not vary with the environments, and because they can be replicated at different times and at different places. An alien interpreter who tried to make sense of the activities of humans would puzzle over the purpose of the elaborate actions that were done in

such cases, because there would be nothing discernible that these actions were *for* in the same fashion as building houses or making food would be. Described from with action descriptions that hold for the primary case, the participants would in a game of chess merely move pieces of wood around on a small board, and in a computer game, the user would seem to produce images on the screen in a way that gave no reliable benefits for the users in the fashion that spreadsheet or sending emails would do.

It is very tempting to make the following observation about gaming activities: They gain their character of being reasons for actions for their participants in virtue of the fact that *they are systems of signs.*

This inclination is reflected in much thinking about games. Thus they are thought of as "interactive fictions" (Tavinor 2009), "simulations" (Frasca 2003), "cybertext" (Aarseth 1997) or systems characterized by "semiosis" (Myers 2003).

This theoretical inclination is all too natural. It is after all a striking similarity between the activities that take place in such games and those that take place in acts of communication. Games are pieces of physical reality that are lifeless on their own, they must somehow *be interpreted* by their participants, and once assigned an arbitrary scheme of properties, they come to life as meaningful systems users can interact with. In this sense they seems to be no difference from the myriad of ways that the normal ecologies come to life in virtue of representing states of affair, as evidenced by the way in which different languages get meaning, how street-signs direct traffic, or how photographs of cats stand in for pet cats.

Applied to the two game cases, the representational model might regard a chess game as having a set of properties which represent that certain states of affairs are the case, such as being a piece of a certain kind, and the position on the pieces on the board as symbols signifying a certain game state. This understanding certainly seems to hold for computer games. Older games had text adventures, which looked exactly like ordinary text, only that it was generated in response to user input. Modern games depend on environments that seem to rely on the semantic phenomenon of *depiction* to gain life for their players. This corresponds to the notions that they are "simulations" or "virtual environments", which can be understood as a claim that computer game environment depend on the function to provide representational *substitutes* for the kind of objects and events that happen in the ordinary case.

I will now argue that the representational model gives the wrong picture of game ecologies. I am of course not denying that games to a large extent rely on semiotic phenomena, but rather I hold that *it is not the feature of representation that make games out to be game ecologies*.

We can get hints of why this picture is wrong in the ontological intuitions we have about both the classic game case and of the computer game case. While it is undeniable that both of these cases involve cases of representation, such as the shape of a knight in the classic game signifying a knight in the primary case, and that the on-screen images of guns in a computer game signifies guns in the primary case, this is not all there is to it.

It does not take much reflection to realize that the representational property of being a knight in chess is immaterial to the understanding of the game. An alien who did not understand the symbols in a poem would never understand it, even if he happened to reproduce the sounds

exactly right. But it would not matter if he had no idea what a "knight" was if he knew the powers of the piece on the board.

This tells us that the property of being the kind of piece that a knight is, cannot be a representational property at all. It is simply a property of piece given by the rules of the game. An analogy can be given with a bank note. A fake bank note may *signify* exactly same properties as a real bank note, but those representations cannot be what distinguishes the agential properties the fake bank note from that of the real note.

Likewise, we immediately realize that when shoot a splicer in Bioshock, you are *doing something more* than merely displaying a set of pictures of a fictional event, as it would be if this were an animated movie. The fact that you are obtaining something with your action may be the reason why we call it a "virtual" action compared to a fictional one (Sageng 2012).

Given the analysis of game ecologies in terms of reasons for actions proposed in the earlier section, we are now in position to analyse this proposal in more detail, and I shall argue that a semiotic understanding of game ecologies cannot account how they serve as systems that *prescribe reasons* for actions for the player.

While all agential properties arise from the faculties of representation in perception and general cognition, communication can be seen as behaviour that in various ways aims at making the contents of such representations *available to other participants*. Thus a street sign informs which way to drive, a company logo on a shirt indicates that the person wearing it is working in that company, a photograph is intended to convey a state of the world, and an utterance conveys some propositional content by way of some speech act to the recipient. We can call such pieces of behaviour we call "signs", "utterances", "sentences" and the like for instances of *communicational representation,* in contrast to the mental states in perception and otherwise on which they depend, which can be called *original representation.*

Instances of communicational representation, like making a depiction of a gun or uttering the sentence "snow is white" are exemplary cases of agential properties, since both the originator and the interpreter attempt to attain goals with the contents they express. The question of whether the classic game case or the computer game case are to be understood as systems of signs that can be investigated by the nature of the attainment-conditions that they enter into, i.e. they can be used to argue that such an understanding is mistaken both with regard the agential properties of classic games as well as the agential properties presented by dynamic depictions in computer games.

Communicational representation is representational in the sense it centres on the ability to *be more or less accurate about the world*. Being a representation implies a functional role which involves some sort of representational purport, i.e. that the function is to stretch out across time and space to be *about some other aspect* of reality Thus a sign may correctly or incorrectly fail to *refer* to some entity other than itself, or a picture or a proposition may be *true* or *false* about some other feature of reality. Using a sign implies at the very minimum that this functional role of "aboutness" is instantiated.

Thus communicational representations turn into reasons for actions for an individual in two fashions. On the one hand there are those reasons they invoke in *virtue of being communicational acts*, and addition there are those reasons they invoke by facilitating pro-attitudes that are *external to the act of communication itself*.

There are a number of communication-internal reasons that are presented to an individual when interpreting communicational representations. The first reason is to identify it as a communicational representation of a certain type, meaning that understanding it means to recognize its representational purport, which in turn cannot be done without assessing whether or not it makes some sort of correct statement on reality. For example, if you tell your friend that there is a cake in the kitchen, then you may in central circumstances attain your goal by performing that communicational act only if there is a cake in the kitchen. Very often, and especially in games, the representations do not aim to refer to actual objects or to be true about the world at all, but evidence for this is actually still dependent on making an assessment about what is actually the case in the first place. This is called the principle of charity, and it holds true because understanding is tied to a presumption of truth in the methodology of interpretation.

Secondly, a number of communicational internal reasons for actions arise from *the force of the speech acts* involved. For ordinary utterances, issuing a command can give the listener a reason to *obey* or *refuse*, issuing a question may give listener a reason to *give a response*, and giving a name to a child might give a reason to call him by that name afterwards. Of special importance is the speech act of assertion, which can be regarded as primary, and which may involves making some sort of commitment with regard to something that is the case (cf. Brandom 1999). In such cases, there are various options for reasons that are invoked for the listener: due to the role of testimony, she can be given a defeasible reason why the asserted content may be true, or she may be given a reason to justify his opinion if he is prepared assert something different himself.

The *communicational external reasons* that can be facilitated by communicational representations are probably as multifarious as there exist reasons at all. A person can use communicational utterances she can provide reasons to be entertained, to gain information, to gain food, to reorganize department, to pay taxes, to conduct a meeting and so on.

The tenet that games, *qua games*, are systems of signs can with these observations be shown to be deeply misguided. There is no denying that most games to a great extent depend on signs in the form of pieces in the shapes of towers, point counters, speech, sounds effects, depictions and so on, but these communicational agential properties cannot account for the *kind of reasons* they prescribe to their users.

First, it can be noted that the kind of properties found in games like chess simply do not have a communicational intent. It may be true or false whether something a king-piece in chess, but the property of being a king is itself neither true or false, and nor is it "about" some other state of affairs in the world. Unlike a picture of a king, the property of being a king does not refer so something else. Being a king in chess is in this respect just like an ordinary property, like being white or made of wood. So, at least for traditional games, the agential features simply do not have the constitution that can make them out to be representations.

Secondly, it can be shown that they in any case do not offer the right sort of motivational structures. The argumentation is here a little more involved, but no less definitive. By itself, a system of signs merely is true or refer to some other states of affairs or objects. These are *lifeless* as reasons for actions unless *some other pro-attitudes* are added to the description.

And here there are two options; they can either be internal or external to the act of communication. Such signs can carry the force of speech acts, such as assertion, but the mere act of stating that something is the case does not provide reason to act in the manner described, just as truly asserting "this is a shovel" does not by itself give a reason for someone to use it. Nor do the games correspond to other speech acts like questions, commands and so on, though of course they can be used for this purpose if the gameplay prescribes that the player adopts reasons to treat them as such.

With regard to external reasons, there is really only one important candidate, and that is the attitude of make-believe, which is indeed a common component in many games. (Walton 1991). Yet, again it is easily seen in the case of traditional games that they are not cases of make-believe, both from the fact that there is no apparent make-believe in abstract games like soccer or checkers, and from the attitudes the individuals have toward such events. Intuitions clearly support a distinction between the properties of "offside" in soccer versus the property of being "Santa Claus" at a Christmas party.

Yet, it is true that many games depend on make believe, such as when the player of Monopoly (Hasbro 1935) is pretending that she is owning hotels and taking rents, and especially with regard to simulations in computer games, which depends on make-believing that the simulation is taking place.

In such cases there is indeed a prescription that the player makes-believe that objects and states of affairs represented by symbols is actually existing, but *this make-believe does not constitute game play*. It is possible to make-believe for many reasons. It can serve an epistemic role, such as actions performed in utility software, which aims at picturing how a finished product might be like, or it can facilitate some further purpose, such serving as a metaphor for aiding the user to perform certain tasks. What comes in addition to make-believe is the phenomenon of being the kind of reasons that stems from being a *game*, which shows that this is a feature which comes *in addition* to the pro-attitudes involved in make-believe, as important as these attitudes nevertheless are in much play and games.

Game Ecologies and Status Functions

It is now time to turn to a positive proposal of the kind of properties that define game ecologies. I will begin by commenting on how to understand the classic games, and then move on to the problems of extending any such understanding to computer game ecologies.

The most conspicuous feature of game ecologies is the way in which they are isolated from the ecologies in the primary case, since they create self-contained motivational systems that vary little between players, and can be transported from one external conative setting to another. This conative independence has often been recognized and attempted utilized as a defining feature of the activity of games. Thus, according to Jesper Juul's attempt to formulate a "classic game definition", a game is described as rule-governed activity where the consequences are the activity are "optional and negotiable" (Juul 2005, 16), and in Suits a game is directed achieving a "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."(Suits, 54-55).

The problem with these definition-attempts show up both in the problem of extensional adequacy and with regard to the way in which they attempt to capture the essence of games. While there is a rough-and-ready degree of truth to Juul's proposal that games have negotiable consequences, it is neither necessary nor sufficient. It is not necessary, because playing a game of Russian roulette requires using real bullets, and it is not sufficient, because cancelling e.g. traffic rule does not make the previous activity a game. Suits on his side holds that playing a game requires inefficient means, which also seems neither necessary nor sufficient. It is not necessary because e.g. computer games do not allow less efficient means, and it is not sufficient because it is possible to pursue inefficient means for their own sake without making something a game. Both descriptions apply to running competitions, and to chess, but the former does not seem like a game in the same manner as the latter.

They also seem to have problems with capturing the conative aspects of being a game. Juul's definitions identify the normative pro-attitudes in various traditional psychological characteristics; however, it seems possible to play a game entirely independently of possessing such attitudes. It is simply false that it is a necessary condition for playing a game that you attach some emotional value to the outcome, although of course it is often the case.

In Suit's case, there appear to be something missing in the notion that you play according to rules that are accepted just because they make the activity possible. It is possible for a player to play without any regard to this particular motivation, and in any case it does not answer the question of *why* a player would find it desirable to perform the activity just because it is possible.

I propose that we search for an analysis of what the "rules make possible" which takes an explicit look at the ecological consequences of adopting rules in traditional games. What is just out of the picture in both Juul and Suits is the fact that games are *artificial ecologies.* They contain agential properties and motivational systems share with such things as social ontologies, mathematics and ethics which are independent of idiosyncratic pro-attitudes. Just like the correct interpretation of language endows utterances with specific ways of interpreting them which provide autonomous communicative reasons in interpretation when assigning meanings, the rules in a game produce a system of non-agential representational properties, action types, situational scripts and motivational structures which is what we recognize as "game".

What is missing in these classic definitions is simply an account of this essential role of the rules in traditional games in producing these structures. We can here use a point from Juul, who observes that the problem-solving activity in Tic-Tac-Toe can be represented in programming as something which perfectly maps the moves in the game when played on a board (Juul 2005). Still, it can be objected, that though the rules are the same, the game is not the same, since agential properties that are created by the *visual similarity space* cannot guide the player in the same fashion as one found in abstract programming. The notion of a rule, then, is apparently only a component in creating a game, and what we must understand is the manner in which they create agential properties that guide player during play in an autonomous fashion.

It is here useful to start out with traditional games, and then move on to the interpretation computer game actions. My primary model for the agential properties in game will be the kind of ontologies one finds in social setting. As outlined by Searle in "The Construction of Social Reality", there are a range of features that exist merely in virtue of the fact that they are accepted in a social setting, which I mentioned before under conative properties we encounter in the primary case. These are the properties of being waiters, policemen, money, contracts and the like. A great deal of properties exist because of the fact they depends on relations to others, such as promises, artefact-functions and so on, but there is a special kind of properties which are constituted in the course of social interaction, by something Searle calls "status functions", and I propose modelling the existence of games on a version of these functions.

The basic proposal for a status function is given by the following schema:

X counts as Y in C

Where something is a bank note or a policeman, some physical substrate X takes the role of a carrier of the status function, in this case either a piece of paper or a person. The status function *endows these substrates* with properties that guide action by the way it is upheld by a set of normative practices accepted by the participants.

Thus, a contract is a contract in so far that the participants *accept it* as having certain powers vis a vis the people using it. Similarly, a game has certain properties in virtue of the fact that the user *accepts the rules* of the game for traditional games.

While the connection between games and social status functions are obvious, and in fact Searle is using games a prominent example of such ontologies, there are several interesting differences. First, we must note that while games are social, they do not need to be. Thus, games like solitaire or Doom are physical systems that are endowed with certain features in virtue of rules, but they do not depend on anyone else accepting the powers of the player. So games do not need to be social, yet it still seems like they use some sort of status function to work and the player does need to be credent to the rules if the game properties are to emerge. For example, a dealing a particular card counts as move in Solitaire only if the player remain credent to certain powers the card has to perform actions in a game.

Next, there is modal difference between social ontologies and games. A game which has never been played, but where the rules have been clearly defined, nevertheless counts as a game. On the other hand, a social structure with merely imagined status functions, does not count as an actual social ontology, but only as a possible one.

Finally, there is of course the principled difference between social ontologies and games which consist in the fact that games are disinterested in a fashion that social ontologies are not. The ultimate value of money is not *simply* given by whether it is accepted or not, but whether it satisfies pro-attitudes for the people using it. If there was no more need for the security of a contract, it would cease to be valid. If everyone could get all they wanted from a replicator, money would cease to have value. Games, on the other hand, are free to implement any sort of scheme for agential properties, which is a part of their attraction.

To understand how status functions apply in games, we need to understand the particular kind of properties that are implemented with status functions as a key to understanding game ecologies.

Consider the similarities and differences between using physical substrates for make-believe versus game rules. Thus in the case of make believe, we can say that the make-believer must have the cognitive capacities to imagine a possible state of affairs.

X is used by S as a prop for make-believing that *p*

In this case S must have the cognitive capacities to imagine a possible state of affairs expressed by *p*.

In the case of games and social properties, the substrate X likewise depends on imagining a possible state of affairs Y by some subject S.

X counts as Y in C by S

In the former case we have the agential properties associated with communicational representation, while in the latter we have an entirely different phenomenon. The former has conative force which stems from using X as an aid when participating in make-believe, while the latter has conative force in some different way.

Let me attempt to track the actual attitudes someone has when adopting the kind of pro-attitudes that comes from being directed at properties instituted by status functions. We can imagine the following succession of attitudes that gets the agent from attitudes toward the base and to the adoption of a conative scheme.

(i) S believes (X occurs in context C)

(ii) S accepts (X counts as Y in C)

(iii) S believes (Y implies S ought to φ)

(iv) S believes (S ought to φ)

This succession of attitudes makes clear that the key to understanding the agential properties in games is to understand what is happening in (ii). What does it mean for S to "accept" that X counts as Y in C?

It seems that the outcome of this acceptance is that a wide range of agential properties *are added to the similarity space* of the individual accepting the status function. Furthermore, the similarity space and the agential properties that follow with it are *intersubjective* because they offer reasons for actions that can be shared by the participants in the practice of accepting these functions.

For example, the valorisation and the manners in which you buy something for 5 euro converge on the same assessments, in the same manner as the potential strength of the queen is the same for both players. So, properties created by the status function contribute to goal attainment conditions based on reasons created equally for every participant of the practice in question.

I propose that underlying the game ecologies is the phenomenon of *deconditionalization,* according to which some *possible agential structure* is *made actual* by taking on a commitment to act in a manner which make the resulting agential properties emerge in the similarity spaces of the participants.

In other words, we can imagine a two stage process of acceptance which aims at establishing a set of agential properties. In a traditional game, the pro-attitude *that the rules ought to be followed* is voluntarily adopted in order to make in-game pro-attitudes guided by emerging agential properties. The result is an objective similarity space designed to make a match between the properties mentioned in the pro-attitudes and the attainment conditions that the user is acting on. We can see that this sort of deconditionalization is an advanced cognitive accomplishment, involving the ability to conceive in a freestanding fashion a possible way the world could be, and then implementing that into one's similarity space.

So this is what I will propose as an account of agential properties in games as well as social ontologies: At the heart is a particular kind deconditionalization of features which give rise to properties that serve in attainment-conditions. I think it is likely that the existence of game is as a matter of evolutionary history connected to the existence of social ontologies, because a general capacity for deconditionalization is required for free and creative adoption of status function.

This account now allows us to account for the basis for game ecologies by paying attention to the pro-attitudes that enter into creating the similarity space. The crucial difference between social ontologies and games is that while social ontologies are based serving externally valid pro-attitudes, games share with make-believe the feature that they can be acted on by voluntarily adopting a normative premise. The difference is that while make-believe isn't associated with real beliefs, games are. I call these "lusory" attitudes for *IDAV-attitudes*, or intentionally determined and arbitrarily valorised pro-attitudes.

The fact that such attitudes can be adopted at any time, independently of their larger conative context, explains the differences between games and social ontologies. The game ecologies do not depend on interpersonal acceptance-relations, since they merely make use of the *cognitive mechanisms* that support deconditionalization in a social setting. Finally, the fact that any agential structure can be implemented independently of an actually held set of pro-attitudes, explains the fact that merely a possible agential structure also counts as an actual

game, while a merely possibly social ontology does not count as actual social ontology, because that depends on *actual acceptance*.

Given this proposal of a principled relationship between a cognitive function of deconditionalization and its role in producing the similarity spaces that underpin conative ecologies, we can finally turn to the question of how to characterize the ontological status of game ecologies.

The Ontological Status of Game Ecologies

According to the analysis outlined in previous sections, the ontological status of the ecologies we find in the classic game case and in the computer game case must be answered by accounting for the relationship between environmental descriptions like "Ga" and "S performed a φ-ing" where the action verb and the pro-attitudes that serve as reasons for the action contain essential references to the properties like G and objects like "*a*".

I will begin with the classic game case, and then proceed to the more difficult case of computer game ecologies.

In the case of chess, the descriptions of actions like "castling", "defending", "check-mating" refer to actions that presuppose that the player can identify the agential properties that emerge on the board. These agential properties can in the classic game case be seen as the result of similarity spaces that emerge by adopting the arbitrarily valorised pro-attitude that the player ought to follow the rules of chess and that the winner ought to achieve the winning condition of the game.

In this description it might seem like there is only one arbitrarily valorised pro-attitude, that of winning, but in reality the game rules themselves constitute a voluntary assignment of values, since the abilities of the pieces constitute chosen value-assignments. However, once these constitutive reasons for play are adopted, the effect is that the game *emerges as a complete conative ecology*. Each situation on the board can be recognized or even perceived by a player as consisting of reasons to move pieces, as situational scripts like that of knocking out another piece or castling, or motivational structures like the various options for following certain attack strategies. By being credent to the rules, the player adopts a normatively shaped similarity space in perception, much in the same way as an ethically individual can discern just and unjust actions in perception.

In the game of chess there is still a representational element, since the pieces represent "kings", "pawns" and "armies". However, the role of these representational roles is merely heuristic support for deconditionalization. In the case of a piece like the king, the deconditionalization means making certain possible powers of the king-piece to *actual counterfactual behaviour* when the participants start to play. The symbol of being a king serves to inform the player that it is this kind of piece which has these powers, rather than referring to an actual or fictional king.

The ontology of this sort of conative ecology is relatively straightforward. The action reports refer to pieces of wood that can take the base role in the status function, while the emerging agential properties like being a king or being in a particular position on the board are

constitutive properties that emerge from the IDAV-attitudes. It has the same character as the property of being a 5-euro note, only that it does need to depend on social acceptance in the same way.

However, the real problem is how to account for the case of computer game ecologies. What are we referring to when we are reporting actions such as "running", "jumping", "buying", "killing" and so on in a 3d or 2d interactive environment like the one we find in Bioshock?

There are two central problems in applying the perspective of constitutive rules in this case. First, that it seems that it seems that the proposal presupposes that we know what should take the base role in the status function. In the case of classic games this was relatively straightforward, because a chess pieces is piece of wood and it is easy to describe the situations and events they enter into. However, in the case of interactive graphical environments it is not clear what kind of objects or properties these things have. These environments are called "virtual" or "simulations" and it is not yet clear how we can bypass such descriptions.

Secondly, it seems that there is nothing to take the role of rules in computer games, since they utilize *game mechanisms* that institute behaviour that cannot be adopted in the same manner as constitutive rules for chess. These mechanisms will only allow certain actions to be performed, and often the player has no say in it. This means that there is a problem in accounting for how the status function is implemented, since there apparently is no element of acceptance of the sort found in social ontologies and in many classic games.

Let me begin by commenting briefly on some approaches to the question of what "G" and "*a*" refer in these environments. I will here mention two that are especially relevant to the present approach to computer game ecologies: Philip Brey, which specifically discuss social roles in general and status functions in particular, and also David Chalmers, who propose a structuralist theory of virtual objects and environments which is also different from mine.

Both of these writers hold that virtual objects are what they call *digital objects*. Philip Brey holds that such digital objects are "symbolical structures" implemented in programming (Brey, 2015) but also hold that they have features in common with fictional objects in that they "appear in products of imagination", "do not have real existence" and that they require the user to "act as if they are actually happening" and "as if they are real" (p. 45). Despite the fact virtual objects and actions are taken to exhibit these features of unreality, Brey nevertheless argues that they have real effects insofar as they can serve as basis for status functions, and only in so far as they have real effects *outside* the virtual realm.

David Chalmers in defending a robust realist view of virtual environments like the ones depicted in the movie "The Matrix". He also calls them "data structures, which are grounded in computational processes" (Chalmers 2015, 7). According to Chalmers, the reality of virtual objects, events and properties is found in the fact that they *replicate the same functional roles* in perception as the non-virtual objects. Thus a virtual square is a square which instantiate the same functional or structural role as a non-virtual square on normal perception, and virtual redness is property which consists in being appeared to as red in the normal conditions for virtual perception.

Both of these proposals of virtual objects as "digital objects" contain their respective advantages in accounting for the real nature of virtual actions, since they can explain when a virtual X can be regarded as an actual X and also the inclinations we have in regarding some aspects of the virtual as real. According to the version put forward by Chalmers, a virtual X will be the same as a Y, if what makes Y a Y is a particular structural role. For example, a virtual calculator will be the same as real calculator since it is identified by the very same structural role. Brey, on the other hand, allows that those virtual actions are real that produce non-virtual effects, such as scaring someone, or those that are capable of carrying status functions, like money or contracts.

It seems to me that Brey and Chalmers must differ in their view of their assessment of the reports of the environment and their actions. Brey holds that they require attitudes towards "non-existent" objects and the fact that the user is required to act *as if* they are real, so it seems that he should regard action descriptions that depend on the user being directed at attaining goals with such objects for being *literally false*. To Chalmers, on the other hands, virtual environments are real because they have *real functional roles*, and so most of the descriptions will count as true, only about virtual objects with certain functional roles.

I will not attempt to address the full issue of virtuality in this paper, but more narrowly examine the case of how to account for computer game ecologies using theoretical resources I have outlined in this paper. I will note what I take two be problems with both of these attempts to characterize virtual worlds. A problem with both of these approaches is that while it is true that virtual objects may be *realized* with the help of data structures, they cannot *be* these data structures. A data structure is an abstract object, which does not have effects in a physical world like a substance. Furthermore, while an object in a game can cease to exist in the course of a game, a data structure remains intact.

Likewise, the objects and events in computer games do not depend not simply on the causal power that the programming give the game object, but also on their *causal histories* and *larger causal context*. Imagine also being on a LAN-party with many people watching multiplayer soccer game on many screens. You can see people observing the same ball from different perspectives, but then you suddenly realize that there are two different game-parties present and hence *two different balls* in play on different sets of screens. While the ball may be represented by a particular data structure on all screens, this is not sufficient to identify the ball. Since data structures serve a similar role to as laws in nature, the point can also be made this way: Two simple physical systems with identical balls bouncing around in an identical boxes may in a perfectly similar fashion adhere to same laws in the two instances, but there would still be two different balls. Applied to data structures, the implication is that neither Brey's "as if" balls, nor Chalmer's functional-role balls, can exhibit these indexical and contextual roles.

Brey in particular holds that only virtual actions that have consequences outside the game should be regarded as real actions, and that "intravirtual effects should not be understood as really occurring". For example, when a user is killing a character in a virtual world "no real act of killing has occurred" (Ibid, 49). To this one must retort that while it is true that no killing has occurred, it seems true to say that *something* has occurred, and furthermore that

player has been *guided* by real properties of the game environment when trying to attain the in-game killing.

The kind of environments we find in Bioshock start out as *animations*. I will in the rest of this section approach this problem from this specific starting point, which is the central case of computer games, which are designed to present the player with a display of interactive animations in response to user input via controls like a keyboard or a controller. For simplicity, I will not here take up the problems of extended cases of virtual worlds like those depicted in movie "The Matrix", virtual reality headsets, or augmented reality.

Animations are from the outset representations that prescribe the semantic role of depiction. I will argue that the problem is how to account for the fact that actions performed with these representations get to become actions and objects which are more than merely fictional, and work out how the function of deconditionalization in gameplay turn them into real actions, objects and events.

How do we account for the nature of the relationship between action reports which contain action verbs like "shooting", "walking", "jumping", "killing"? If we start out with the assumption that a player S is performing actions on *representations* of such actions, we get a distinction between the *content* depicted and the *representation itself*, which consist of graphical shapes on the screen. Since we have no independent way of referring to these representations, I will call the actions performed with the representations themselves for C-actions. I.e. if a person is performing a shooting, then she produces a pattern of graphical shapes on the screen which serves to depict the shooting.

In a game like Bioshock such depicted content is by itself never true (there is of course no Rapture), so the communicational role of such depictions is to prescribe that the user pretends or make-believes that what the content expresses holds true.

An action in gameplay is normally reported as:

(3)   S performed a φ-ing in G

The actual action performed by S then has two components. First there is the action performed on graphical shapes:

(3a) S performed a C-φ-ing in G

And secondly, there is the fictional element of make-believe that these basic actions are made to represent:

(3b) S performs a C-φ-ing she pretends to be a φ-ing in G.

This analysis now gives us the complete motivational context for typical gameplay action. As with action generally, a player S acts on a motivational set of beliefs and pro-attitudes, which forms the basis for deliberation in a specific situation. Based on this set of beliefs and pro-attitudes, S forms an intention, and carries it through by clicking the controls.

Corresponding to this dual layer model, there are three types of motivational states that enter into the gameplay action: 1) Those that pertain to the game-mechanical layer; 2) those that pertain to the represented layer; 3) and those that pertain to the semantic and motivational interaction between the two.

As I have argued elsewhere (Sageng 2012), the key to understanding the nature of actions in such environments is to realize a peculiar semantic phenomenon which occurs when a player is acting by representing that he is acting in this way. When a player acts with such representations, he becomes responsible for satisfying the attainment conditions of such actions. The fact that he must be *regarded as an agent* then has the effect that referential role of the C-action is *cancelled out*, and takes on its own life. In a report of the actions performed, the action verb can *shift reference* from a fictional event depicted by the representation, to an actual action performed with the representation itself.

These gameplay actions, in other words, can now be seen to form the heart of the conative ecology of the computer game. This analysis presents an answer to the puzzle of how to account for the differences between the classic game case and the computer game case. While the "G*a*" in the environmental reports can be taken to refer to pieces of wood in the chess case, they can now be taken to refer to graphical shapes and their properties in the computer game case. Thus, a C-gun is graphical shape on the screen, and C-shooting is a sequence of events performed with a C-gun.

Since most computer games also retain their fictional role, it is necessary to expand on the complete set of motivational structures in a computer game environment. Most computer games remain works of fiction; even though they are have a core of gameplay, so they prescribe reasons for actions based on make-believe and general psychological reactions. Thus, an adventure game is very dependent on prescribing that the player make-believes that he talking with fictional characters or fighting fictional monsters. It also uses environmental sounds to create emotional reactions and so on.

The gameplay acts of "finding a treasure", "opening a door" and so on, on the other hand, is according to this analysis real, and likely carries a *double interpretation* in such game, i.e. that it is both true the player is prescribed to make believe that he is finding a fictional treasure, and at the same time also true that he is actually prescribed to find a C-treasure and solving real C-problems when doing so.

The game-mechanical and the representational layer can both interact and diverge. Good design will ensure that the real gameplay actions play into the fiction as enhancers of make-believe. Thus, player will not simply *imagine* that he is shooting, but will perform a game task that gives the make-believe event have a particular experienced character. It may also diverge, when the prescribed gameplay *contradicts* the prescribed make-believe. As we shall see, the interaction also goes the other way around from representational layer to the game mechanical layer, since the representational layer serve can serve as status-function indicators for the prescribed gameplay properties.

According to this proposal, the heart of the matter for the ontological status of game ecologies is found in the following question: What kind of actions are C-actions and how do they get to be the kind of actions they are?

The answer is that this is determined by how the graphical shapes can support attainment conditions implied by action verbs and descriptions. A major source of puzzlement for understanding what kind of things in-game actions and objects are, is found in the aforementioned fact that we do not have an independent vocabulary for describing them. In the classic game case, we already have a vocabulary capable describing the events in terms of a "board", "pieces of wood" and so on, but there is no corresponding vocabulary for the in-game objects and events.

If you are killing someone, you are performing a C-killing, which is something different from killing, since no one is dying, unless you manage to create a lethal epileptic seizure with the graphical shapes. It is, however, possible to scare someone, or to pay with real money, since graphical shapes are sufficient to support such effects, and in the case of money, not much is needed to support deconditionalization of the corresponding social status function, other than the usual functions like the fact that the amount of money remains constant, that it does not perish after transactions and the like. Generally speaking, you cannot perform with C-actions action types that presuppose a role for the body.

What make some such C-actions to game actions? My proposal is as follows: Just as the representational layer makes use of the mechanisms for semantic representation to instil make-believe, the game-mechanical layer makes use of the process of deconditionalization of possible agential structures to create action types. In other words, when a player understands how to play a game, the player understands how the graphical shapes prescribe *a particular agential structure*.

To make this point is best to return the classic game case. I have already described how accepting rules from arbitrary valorisation gives rise to an emerging conative system in a board game like chess. There is an important point to make here which may bridge the gap between the gameplay actions in traditional games and games in graphical environments. The process of making a game involves endowing pieces of wood with an agential structure by imposing a winning condition and weighting of values for the pieces that takes effect once the player starts the game. This is similar to what Suits says when he proposes a game player accepts the rules just because they make the activity possible. However, this cannot be the full motivation for adopting the game rules, since there are an endless variety of ways in which one could do this, which would end in uninteresting and unplayable games.

This description misses something about the *telos* of a game and I propose as a first approximation that the point of deconditionalization with arbitrary valorisation is to *create interesting action types* to be performed for their own sake. The expression "for their own sake" does not seem entirely correct, however, because the point I want to make is not that the point of this process is something which necessarily is autotelic in the form of "fun", but rather that the system produces actions to be performed, not for what you *achieve* with these actions, but rather because you perform the actions in order to perform the actions of this

type. It is this second-order motivation for performing which is achieved by arbitrary valorisation, since the result is naturally disinterested form of action.

It might also help to use Aristotle's observation in *Poetics* (Aristotle 1995: 144b3), where he talks of the "pleasure all men takes in imitation". It is a striking fact that people take pleasure in imitations. For example, a person may take no particular interest in a tree, but take pleasure in a good depiction of the tree in a photograph or drawing. One might perhaps say that what man finds pleasurable is the *form* of the tree, as opposed to the tree itself. Something similar may hold for games. As I have already argued, games are not representational expressions, but rather actions performed by someone, but just as images capture the form of object*,* games may derive their interest because they display the *form of actions*.

If this is a correct diagnosis, we may have a way to interpret the function of a game mechanics. If we look at the classic game case, we can say that the point of adopting game rules is to turn an uninteresting piece of reality into a conative system which via deconditionalization realize interesting forms of actions. In doing so, the classic games are inherently limited in how well they can realize this *telos*, because they are have a limited valorisation strategy, that of winning. For this reason they are limited to abstract and emergent game types that are possible by appropriating the ordinary physics of macroscopic objects.

The real difference that a game mechanics makes is not that it creates hard borders around game rules, but rather that it frees the *telos* of the game function from the narrow limitations of classic games. A game mechanics has the nomic flexibility to realize forms of action directly. This relies on the same process of deconditionalization, but it works by making the C-actions prescribe a perceptual similarity space that express action types and motivational structures to be performed for their own sake.

It might perhaps sound like this proposal can be accounted for by simulated or virtual actions, but for reasons mentioned earlier, this would be the wrong interpretation of such games. First, because the intrinsic interest of game acts in classic games stems from performing *real acts* and not virtual acts. Secondly, because the conative ecologies in games places relatively little value in replication or simulation.

Even a game that makes heavy use of simulation, like a shooter, never really makes attempts at replicating action types, situation scripts and motivational structures with great accuracy. They rather pick out certain forms of actions that are somewhat similar, but where the ordinary agential structures are largely ignored. What they do pick out are action types that are somehow interesting in the ecology of the game.

Consider for example the act of walking in a game. This act has nothing to do with an ordinary walking. In the case of a point and click adventure, it only shares with walking the form of a simple localization attainment-structure. Even in a game like Bioshock, walking is nothing but a form of directed movement. Actual walking involves using the body, proprioception, lifting the legs and using the kinetic properties of the body. Walking in Bioshock is a *form of action* that is shared with rolling a wheel-chair, flying with a balloon, and actual walking. Consider also the use of gravity in Tetris- the game blatantly introduces behaviour like turning a block mid-air without emulating a plausible causal mechanism for a

connection between the player and the in-game action. Again, the aim of the game is clearly not to replicate some action type, but to allow the user to act on a form which is interesting in its own right.

There is also the act of killing someone in a game, which involves an attainment condition that cannot be realized with graphical shapes. In a game, most players can respawn, get another life, or start again, so killing attains something different that actually killing someone. Rather, the act killing in a game is form of action which it does shares with actual killing, but also with actions that aim at restricting the options available to the other player, such as cancelling a library card, or dropping someone off in the middle of nowhere on the way home.

Players are evolutionary and socially adapted to certain ecological structures and computer game ecologies for this reason do tend to adopt action types, object scripts and motivational structures found in the primary case. However, the aim of a computer game ecology is to make *artefactual realities* rather than virtual realities. Rather than just replicate agential structures, games also simplify, elaborate, extend and invent forms of action.

Concluding Thoughts

I have in this paper characterized the nature of game ecologies. I have argued that an undefined notion of affordances is not sufficient to answer this question for game ecologies, since this notion by itself cannot inform us about the ontological status of these affordances. As an alternative I have proposed to analyse the notion of an affordance as a relationship between action-guiding properties conceptualized in practical reasoning and implemented in the similarity space of the agent.

I have proposed that the similarity spaces of games arise from a "deconditionalization" of possible action types and motivational structures. Using this framework I have worked out a proposal for how gameplay in computer games can understood to support a deconditionalization of action forms, motivational structures and situation scripts to be performed for their own sake.

An outcome of the analysis based on the deconditionalization function is that computer games emerge as fairly unique artifacts, certainly different from interactive media, but also different from traditional games because of their much larger potential to shape action types.

Games

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