

## **Virtuality and depiction in videogame representation**

### **Abstract**

This paper seeks to clarify the role of the image in videogame representation. I argue that virtuality is incompatible with depictive representation, and that the distinction between virtual environments and interactive depiction is important in game theory and analysis.

In the first part I combine a critical modification of Kendall Walton's concept of reflexive representation with Edmund Husserl's concept of image consciousness, in order to clarify the ontological difference between physical models and depictive images. In the second part, I discuss the relationship between physical models and virtual things, and the difference between photographic depiction and screen-mediated prosthetic vision. Finally, I show how this theoretical framework can help clarify the nature of interactive depiction in games.

**Keywords:** representation, depiction, simulation, virtuality, Husserl, Walton

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The role of the image is unclear and ambiguous in videogame representation. On the one hand, in most games, the player perceives and interacts with a computer-modelled environment of some kind. As such, games appear to be comparable to Lego sets, architectural models, or theme parks, none of which we tend to think of as pictorial phenomena. On the other hand, the modelled

environment of video games, unlike such phenomena, is only accessible to us as images projected on a screen. How to conceptualise this duality has implications for how we think about the relationship between games and other visual media, especially cinema, and it also informs how we understand the role and nature of depictive representation in contemporary digital culture more widely.

In Bård Ask's video installation *Notio Viri Placet* (Ask, 2005), 12 singers from the Norwegian State Broadcasting boys' choir were filmed individually, performing their part of a short composition by Jan Erik Mikalsen. The composition could then be performed by playing the individual video recordings together, as a choir. When exhibited in Bergen Kunsthall in 2005, each singer was displayed on a separate screen, and the screens arranged as in the image below. The choir alternated between singing the composition and taking long breaks while looking into the camera.



*Notio Viri Placet* (Bård Ask, 2005)

Whether by intention or not, the effect of this particular audio-visual and spatial arrangement was startling. Seen in isolation, each individual screen was nothing special: a person singing and looking directly at us through the camera. However, the arrangement of the screens, and the way in which the individual performances were put together, generated a sculptural effect, as if there were a choir there in the room with us. As I was moving around in the room, the singers followed me with their eyes, like statues come alive, eerily acknowledging my presence in the room as well as their own.

I will argue that the strange perceptual effect in this case is caused by a paradox, namely a visual representation that is at once an image *and* a kind of sculpture, a model. Kendall L. Walton's theory of depictive representation can throw light on this paradox.

### Depictions and space

A representation, Walton asserts in *Mimesis as Make-Believe* (1990), is anything that has the function of being used as a prop in a game of make-believe. A teddy bear is a representation insofar that it has the function of being implemented in a game of make-believe, a game that might involve, for example, going to bed and falling asleep for the night. The same would go for novels, sculptures or paintings, according to Walton: their defining function is to be used as props in games of make-believe. When we are looking at a painting, we *pretend* that we are actually looking at, for example, a ship at sea. Through such acts of make-believe, prescribed by props and rules (games of make-believe), we establish the depicted as "fictional", that is, as being true in a fictional world, as being "fictionally the case". In Cézanne's painting *Still Life with Kettle*, for example, it is fictionally the case that we see a kettle.

Walton's concept of *depiction*, accordingly, includes paintings as well as sculptures or teddy bears. In both cases, we are engaged in a "perceptual game of make-believe"; we pretend that we are looking at a kettle, or we pretend that we are touching a teddy bear. The way to assert that a

representation is a depiction, in this broad sense, is that the game of make-believe allows us to point and say *there*; we can point and say "The kettle is there", just like we may say "Teddy is under the bed". So when participants engage in a perceptual game of make-believe, they are sharing the pretence of perceptual presence. In verbal representation, the same is not the case; we cannot point at the word "horse" and say that the horse is *there*.

However, does this mean that there is no significant difference between the presence of, say, an action figure, and the presence of a character in an animated movie? Walton does not address this question with respect to depictive representations specifically, but he does point out, more generally, a difference between, on the one hand, "world props" like novels or paintings, and on the other hand props like for example a doll. He points out that we do not ordinarily treat the latter kind of prop as having a *work-world* – that is, a world of its own, independently of the world of game in which the doll serves as a prop. Walton then suggests, albeit tentatively, that this difference could have something to do with *space*:

...a doll's location in real space is significant in a way in which the actual location of a painting is not. The fact that a doll is in Heather's arms or on her bed probably makes it fictional (in her game) that a baby is in her arms or on her bed. But the fact that the Unicorn Tapestries hang on the walls of the Metropolitan Museum does not make it fictional that there are unicorns there. (Walton, 1990, pp. 62-63)

So even if we are able to point at a unicorn and say that it is "there" – because the tapestry is a depiction – the unicorn is not there in the same way as a doll would be; it is not *here*, with us.

Hence, I would argue, there must somehow be, within Walton's inclusive category of "perceptual" games of make-believe, two different kinds of presence involved. Walton's own suggestion, made in passing, is that "It might be said that paintings, (many of them anyway) create their own

"fictional spaces", whereas dolls operate in "real space", in Heather's playroom, for example" (Walton, 1990, p. 63). He concludes that this distinction seems important, but that it is not directly related to his central concern, which is the distinction between work-worlds and game-worlds.

## Reflexivity and the image

My own suggestion is that the difference between the "real" space of dolls and the "fictional" space of paintings is to do with *self-representation* – or what Walton refers to as "strong reflexivity":

A doll directs players of the game not just to imagine a baby but to imagine the doll itself to be a baby. So it generates fictional truths about itself; it represents itself. Let's call it a reflexive representation (...) It is fictional in Titian's Venus that a woman reclining on a couch, but it is not fictional of the painting or any part of it that it is a woman or a couch. Venus does not in that way represent itself. (Walton, 1990, p. 117)

It is precisely this reflexivity that is lacking in the Unicorn Tapestries. Even if we can say that the unicorn is *present*, in a certain way (we can point and say 'there'), we are not pretending that it is present as an object in our space. Instead, Walton's unicorn has that very particular kind of presence that is characteristic of a depicted object. It is not fictionally present by way of being manifested as an object in space, but by way of being manifested as a different kind of "object", as image.

Indirectly, then, Walton's theory of representation throws light on the way in which we as viewers are captured by the non-spatial or non-present presence of the depicted image. If I walk around Edvard Munch's *Self-Portrait in Bergen*, this does not mean that I am representationally walking around Edvard Munch. His eyes will be looking at me no matter where I am positioned in relation to the painting, but this does not mean that it is "fictionally the case", in Waltonian language, that

he is following me with his eyes. Instead it means that my position as a body in actual space is cancelled, made irrelevant, because that is what images do; my position in relation to the image of Edvard Munch (although not in relation to the painting, obviously) is given by the image itself. This is what we may call the space of the image, or *image-space*, a space that is immediately given in perception, given that we recognise the objects depicted.

Image-space constructs in this way, on behalf of the viewer, an abstract kind of embodiment, which is represented rather than actual. By implication, represented embodiment is not defined in terms of agency; because neither unicorns nor kettles or Norwegian painters are *here*, in our actual space, we cannot play with them, touch them or act towards them in any way. Or more accurately: we neither can nor cannot talk to, touch, or otherwise act towards an image, just like we neither can nor cannot save the hero when we are watching a tragic drama. Agency is not recognised in this kind of game, the question of acting or not acting never raised.

In contrast, as Walton observes, a doll, when engaged with in a game of make-believe, generates “fictional truths” about *itself*, as a physical object in space, existing in relation to other objects. Our own spatial position relative to the doll can therefore be acknowledged as representationally significant; it does matter whether we put Ken gently to bed, or leave him on the floor.

Nevertheless, Walton’s aim is not to explain how pictures and dolls may differ in this respect, but on the contrary to explain how they are related, how they are both *depictions*, variants of the same perceptual game of make-believe, which involves, in one way or another, the pretence of some kind of presence.

### **Image-consciousness**

While acknowledging its usefulness, Walton’s broad concept of “depiction” can also be somewhat misleading. Referring to dolls or wax figures as depictions hides their status as reflexive props.

Because they represent themselves as physical objects in space, I will argue that they are ontologically different from images, which appear in perception in a very different way, projected on a surface. If we approach this difference as a matter of depiction versus something else – some kind of non-depictive perceptual representation – we will stay closer to common intuition (we do not commonly refer to cuddly toys as a “depictions”), and we will also have, I will argue, a sharper tool for analysing the messy landscape of digital representations.

Reserving the concept of “depiction” for the phenomenon of image-projecting surfaces, that is for the *pictorial* in a more restrictive sense, is also more in line with traditional theories of depiction. Edmund Husserl’s analysis of image-consciousness is here of particular interest, as it appears to directly support Walton’s somewhat hesitant observations on the significance on “location in real space”.

In a series of lectures, Edmund Husserl (Husserl & Brough, 2006) investigates the distinction between fantasy and what he calls *image-consciousness* (Bildbewusstsein). Image-consciousness, or “imagination in the proper sense” (p. 89), is that which is being generated by a picture, a “Bild” as a physical thing, a surface plane. According to Husserl, the image that we see when we look at a picture, the *image-object* (Bildobjekt), appears to us in perception in a strange kind of way. We see it, but not as something that exists in “present reality”:

Perception gives the characteristic of present reality. The surroundings are real surroundings; the paper, too, is something actually present. The image appears, but it conflicts with what is actually present. It is therefore merely an “image”; however much it appears, it is a nothing [ein Nichts]<sup>1</sup>. (Husserl & Brough, 2006, p. 50)

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<sup>1</sup> The only way in which one can say that what is depicted by the picture *does* exist, according to Husserl, beyond the “nothing” of the image-object, would be through a third movement, a third

In a manner also reflected in later theories of depiction, including Walton's observations above, Husserl points out that the image-object, which does not exist in space, instead presents to us another kind of space, its own framed space:

The frame is in the visual field. It frames the landscape, the mythological scene, and so on. We look through the frame, as if through a window, into the space of the image, into the image's reality. (Husserl & Brough, 2006, p. 50)

It is this "reality" that we are, according to Husserl, seeing *in* the picture (p. 28), as opposed the actual, present reality that we see when looking *at* the picture as a physical object. Unlike direct vision through an actual window, this image is an aesthetic object, characteristically produced in the framed surface of the "Bild" as a physical thing.

Husserl's distinction between physical and projected image has been echoed in various ways by later theories of depiction, notably by Richard Wollheim (1968), who in a similar way emphasizes that the act of *seeing in* (or "recognitional" seeing) is non-spatial in nature. More recent discussions by Lopes (1996), and Cohen and Meskin (2004), also point to the way in which images can be defined as a distinct perceptual form by way of their inherent lack of information relating them spatially to the viewer.

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intentional act, through which we are able to imagine that depicted people, things, and events have an existence independently of being depicted. This third aspect of image-consciousness is directed towards the depicted as image *subject* rather than as projected object (Husserl & Brough, 2006, p. 21).

So Kendall Walton's concept of reflexive props, along with his hesitant observations on space, actually chime rather well with Husserl's phenomenological analysis, as well as later discussions on the nature of the image. This is maybe not as surprising as one might think. After all, Walton's general category of "perceptual games of make-believe" is not all that far from Husserl's idea that image-consciousness is a matter of "perceptual imagination" (Husserl & Brough, 2006, p. 89).

### **Physical and concrete models**

However, if we decide that dolls or wax figures are not depictive representations, insofar as they do not project "image-objects", then how do they represent? It seems very clear that such representations appear to us in perception, and that this is essential to their function as props, but what should we call their particular brand of perceptual make-believe? Husserl and traditional theories of depiction can hardly help us here. Instead I suggest we combine Walton's concept of the self-representational prop, as outlined above, with the concept of the *model*.

In the context of computer games, "model" primarily refers to the abstract set of principles (equations, instructions, algorithms) that govern the behaviours of a computer simulation . Drawing on Zeigler, Praehofer, and Kim (2000), game theorist and designer Gonzalo Frasca, presents a useful general definition of simulation:

A simulation has three main elements: a source system, a model, and a simulator. The source system is what is being simulated, such as a city, a machine, or a living organism. The model is the behavioral abstraction of the source system, (...) The third element, the simulator, is the agent that follows the model's instructions and generates output data (...). The simulator can be a computer program – as in the case of a computer program – but it can also be a human mind (Frasca, 2014).

Whereas in computer games and other interactive simulations, the simulator would be “a human mind” and a program in collaboration, many kinds of models are implemented by humans alone, like business- or educational training simulations, for example. *Physical* and mechanical models are also typically implemented by human participants alone. As Frasca points out, toys and games can be considered as simulations in this general sense: “When manipulated by players, a foosball table can be said to simulate a game of soccer” (Frasca, 2014, p. 452).

Frasca’s general definition, although broader than more restrictive uses of “simulation” in science and education, is echoed by the standard US military definition. A model, according to the official glossary, is “a physical, mathematical or otherwise logical representation of a system, entity, phenomenon, or process” (Army Modeling & Simulation Office, 2017). Looking to theories of representation, Umberto Eco’s concept of the *functional* representation is a relevant parallel. For example a hobby horse, Eco explains, is a sign whose meaning is established not primarily through visual likeness or through convention, but through its functionality (Eco, 1976, p. 209). When playing with the hobby horse, the child can implement a set of behaviours that are more or less characteristic of those of a horse. Similarly, US Army personnel can engage with the mock Afghan village at Camp Pendleton in ways that presumably represent, in some relevant aspects, the features and behaviours of an actual Afghan village.

So a physical model is a visual representation, yes, but also a functional or “logical” one, a targeted simplification, a “behavioural abstraction”, in Frasca’s terms. A Lego dinosaur is a model rather than merely a visual representation insofar as we can position it in meaningful ways in relation to other objects, for example in relation to a Lego sheep, make it move around a location in some fashion or another, maybe move individual limbs, and so on, stuff that we would not be inclined to try out with a dinosaur wall poster.

Walton's theory of make-believe usefully adds to our understanding of such phenomena. The notion of the reflexive prop throws light on the role of perceptual make-believe in our engagement with models, and the role of models in our games of make-believe. Physical models, unlike climate models or economic models, are representational in the perceptual sense, and they are, as Walton shows us, representational in a *self-referential* way, which is their unique and defining feature. At Madame Tussauds wax museum in Hollywood, what matters is not that Arnold Schwarzenegger is depicted, which he is everywhere, but that he is represented as being physically present. In our "perceptual imagination", in Husserl's terms, the wax figure itself is Arnold. As long as we are playing the game, the nature of the prop prescribes that we can see, touch, and move around him, with us, in our own embodied space.

Because physical models represent perceptually, the concept of a "functional" representation does not quite capture the nature of the phenomenon. Knowledge of the function of a model can be acquired in any number of ways, not necessarily through perceptually immediate, hands-on experience. Physical models, however, are functional *because* they are reflexive representations; it is because wax-Arnold is spatially present (referring to itself as being Arnold) that I may want to check, for example, whether my own leather jacket would fit him or not. By definition, a reflexive perceptual representation carries functional analogies.

So unlike depictions, physical models invite actions that go beyond mere looking, either implicitly or explicitly. Even if looking at a fairly simple model, like for example a cardboard motorcycle, we will be implicitly aware that there is some kind of functional analogy with the real thing; maybe that we could "sit" on it in some manner, or that it would need some support mechanism not to fall over. Without the intuitive awareness of such functional analogies, the cardboard

motorcycle would not be a reflexive representation, and we would instead be looking at a depiction, an *image* of a motorcycle<sup>2</sup>.

Similarly, the rationale behind making an architectural model, rather than just stick to a drawing (or even a list of measurements), is to be able to engage participants in a particular kind of perceptual make-believe. The hands-on model may allow us to see, for example, how its shadow falls on the environment, or we could be slightly more frivolous and expand the make-believe by adding miniature plastic people, parks, and trains. A physical model helps us perceptually imagine what the real thing would be like if it was actually present.

In *Notio Viri Placet*, because each video recording is displayed in a separate frame and with its own individual singing performance, the installation comes across, whether indented or not, as a physically modelled group of singers. At the same time, the look of each individual singer, into the camera, unavoidably situates our view in relation to the space of the image. In other words: a group of screen-projected images is tricking us into perceiving them – paradoxically – as if they were present and functional in space. The resulting impression is that of magically animated sculptures, following us with their eyes, like in a haunted mansion.

A physical model is a reflexive perceptual representation, and as such inherently functional or “logical” in nature. However this definition does not require that the model is in plastic or metal; it merely requires a model that is *concrete*, that is reflexively and logically present here and now, in our space. Imagine that we are encountering an algorithmically constructed hologram of Arnold rather than a wax version of him. With the appropriate technological apparatus (gloves or suit), we

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<sup>2</sup> Cardboard cut-outs of a person, like the photographic cut-outs of film stars sometimes found in cinema lobbies, are ambiguous in this respect, although arguably tilting towards the image-projecting side, as their potential functional analogies are only very weakly present.

could even be able to touch and be touched by this kind of “live” sculpture. Such a model would not be a physical model in the strict sense, but it would have a similarly concrete, hands-on presence. Obviously, a holographic Arnold would actually be an implementation of an abstract model running underneath, but it would still *appear* in experience in the same way that physical models appear in experience. That would indeed also be the purpose of its making.

This is how Walton’s concept of the reflexive prop again proves to be useful: it allows us to conceptualise the way in which a model can be concrete, that is, representing itself as a present object here and now, without necessarily being a physical model. From the perspective of simulation and modelling, a concrete model is a special kind of model. From a Waltonian perspective, a concrete model is a special kind of perceptual make-believe.

Incidentally, Walton’s category of reflexive representations also helps us distinguish between algorithmically constructed concrete models on the one hand, and visualisations of abstract models, like for example a chart diagram, on the other. The notion of a visualisation, by its very definition, refers to visuals that are *not* to be taken as reflexive props. Depictions, especially simple ones, therefore work very well as visualisations of computer data and processes. In computer games, typical examples are inventory icons or map screens.

The holographic Arnold, however, is not a visualisation of a model, but *is* the model. When implemented in a perceptual game of make-believe, the model represents itself as Arnold, here and now, in Husserl’s “present reality”.

## Virtuality

However: what if we instead have a 2-dimensional miniature Arnold, on a screen, in front of us, as in the action-platformer game *Predator* (Source the Software House, 1987)? Is Arnold then a screen-projected image or a concrete model, or both? I would argue that during play, the

representation of Arnold does not appear in experience in the way a depiction of Arnold does, nor does it appear as a visualisation of what goes on at the algorithmic level. The visuals, in this case, are realised through play as a particular type of concrete model, a *virtual* Arnold.

What is virtuality? Taken as a common adjective, the term applies to anything that is functionally similar to, or “in effect” similar to, some phenomena or entity, in such a way that it can, in some relevant respect, replace it, stand in for it. If we proclaim, for example, that we have virtually arrived at some targeted destination, we presumably mean that we are “for all intents and purposes” there, that our situation is “as good as” being there, in some important respect, and that we should therefore be able to settle for that.

Grant Tavinor’s concept of *virtual representation* draws on this general meaning of the term. A virtual representation, Tavinor suggests, is “one that is capable of reproducing structural aspects of its target, so that it can be treated, for some purposes at least, as a proxy for the target” (Tavinor, 2009, p. 49). This definition is quite similar to the general and medium-independent concept of the model discussed above, especially Eco’s “functional” representation. Tavinor is here also in line with Espen Aarseth, who similarly suggests that simulated things and events, in whatever way implemented, are virtual in nature, and that virtuality must be seen as distinct from “fiction”, understood as imagined things and events (Aarseth, 2007).

Following this approach, we could look at real-time objects and environments as a particular kind of depiction in the inclusive (Waltonian) sense, namely as depictions of the virtual kind. A *virtual depiction*, Tavinor explains, is a “depiction that preserves some functional aspect of its target, and so allows for an interaction of the kind one might have with the target object” (Tavinor, 2012, p. 195). From the point of view of simulation and modelling, we could say that such “virtual” depictions are depictive models, that is: functional representations of the depictive kind.

In this way, Tavinor shows how we can describe the relevant representational properties of real-time environments through general and technologically non-specific categories: real-time objects, he suggests – a videogame racing car, for example – are simply depictions that are also “proxies”, models. The concept of virtual depictions (or depictive models) covers *any* depiction that is able to stand in as a functional replacement or proxy, in some relevant aspects, for that which it depicts. Hence physical models are also “virtual”, in this general sense.

But this solution, however clarifying, comes at a cost. Because Walton’s inclusive notion of depiction, as I have argued above, disregards the defining role of image consciousness in pictorial experience, Tavinor’s notion of “virtual depiction” trades away what is arguably distinctive of depictive representation in the first place. A *proxy* is a self-referential representation, and is thus incompatible with image consciousness. Put differently: if a depiction is taken as a model, it is no longer a depiction. This is what explains the unsettling paradox of Bård Ask’s *Notio Viri Placet*, a work that tries to be a depiction and a model at the same time.

However, my alternative approach creates a problem that we would avoid if we just stick to Walton’s and Tavinor’s inclusive concept: How can real-time models in games be *non-depictive* when they are clearly – unlike holograms, robots or wax figures – displayed as images on a screen? The concept of a screen-projected non-image appears to be a contradiction in terms.

The problem requires that we look more closely at the particular type of concrete models we encounter in screen-based real-time environments. These are not merely “virtual” in Tavinor and Aarseth’s general and medium-independent sense, but also virtual in a narrower and *technologically* defined sense. This takes us closer to the intuitions behind the noun “virtuality” in common language, which implies something to do with computers.

The kind of virtuality I am suggesting here relates to what David Sudnow, in his classic study *Pilgrim in the Microworld* describes as the “extending touch” (Sudnow, 1983, p. 37), reaching across the divide between real space and screen space. During play, we are, via the screen, able to experience real-time modelled objects and environments *as if* they were physically present, even if they are, underneath, mathematical in nature. Real-time virtual objects are second-order models – visual models of algorithmic models – that appear in experience as first-order concrete models of the quasi-physical kind. Such *virtual* objects are, at once, algorithmic entities and tangible objects. This dual ontology carries associations to the scientific concept of nature as information, nature as code.

The real-time calculated visual displays of *Tennis for two* (Higinbotham, 1958) and *Spacewar!* (Russel, Graetz, & Wiitanen, 1962) put players in contact with this type of *reified* abstract models for the first time, in a way that simulated the familiar physicality of pinball and other electro-mechanical arcade games at the time. Like the balls and mechanics of a pinball machine, or the plastic figures of table hockey, the graphical environments in arcade-action video games do not appear to us as existing in some projected realm; they are concretely present and playable here and now, on the surface in front of us.

Key to the status of real-time graphical objects being part of our “present reality”, in Husserl’s terms, is precisely this intuitive experience of tangible contact, and tangible interfaces of control. Tangible interfaces, as opposed to symbolic, command-based interfaces, confirm the actual presence of graphical objects. Unlike people or processes, material objects do not respond to symbolic instruction; because cannot instruct a chair or a marble to move out of the way, some kind of direct physical interaction is required. Symbolic, instruction-based interfaces, on the other hand, do not confirm virtual presence in this way, and are therefore better suited to interacting with conceptual or image-based environments.

As Sudnow discovered during his excessive playing of *Breakout* (Atari, 1978), the experience of tangible presence does not necessarily need to be supported by an advanced physics simulation. It is the *impression* of relating to objects in present reality that matters, their nature as they appear in perception, in the moment of looking and acting<sup>3</sup>.

The question of how, exactly, such objects represent something in the world, given that they are neither depictive nor simply “virtual” in the general sense, is beyond the scope of the present discussion. The main point here is that computer games are able to undermine and effectively cancel pictorial experience by making displayed objects and environments a present reality, analogous to the mechanical machinery of a pinball game.

### Screen-projected 3D graphics and prosthetic vision

But there is an additional problem. In navigable 3D environments, the presumed “virtual” objects are not merely displayed on a surface, like figures on a flannelgraph, but projected on a screen, as if photographed by a virtual camera. In their study of visual representation in games, Dominic Arsenault and Audrey Larochelle explain:<sup>4</sup>

The appearance of polygonal 3D graphics can be understood in the same light as photography and the film camera (....) Polygonal graphics can automate all the viewing operations that fall under the scope of perspective; one only has to stage the objects and determine an angle and lighting for the shot to produce what would have required extra

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<sup>3</sup> As we know, in jazz pianist David Sudnow’s case, the experience of simulated physicality broke down as he eventually, in order to become fluently competent, was forced to relate to the visuals of *Breakout* as rhythmical abstract patterns, in a way similar to mastering an instrument.

<sup>4</sup> Their reference on this point is to Edmond Couchot’s account (1998) of how cameras automated some the construction of perspectival images.

sketches and drawings in the form of graphical sprites for 2D video games”. (Arsenault & Larochelle, 2014)

So how can it make any sense at all to deny polygonal graphics the status of images? If we go back to the holographic Arnold Schwarzenegger, let us now imagine that we are instead watching a *video* of his holographic self, from the comfort of our own living room. Whether recorded or live, surely the moving image on the screen would then not represent Arnold as being *here*, with us, in our space? The situation appears to be similar when concrete models of real-time 3D environments are being shot by a virtual camera.

Now, there is way in which we can deny not only “virtual” video recordings, but *any* video recording, the status of images. Following Kendall Walton, and resonating with the realist tradition of film ontology after Andre Bazin, we could claim that any photographic re-production is transparent, in other words that looking at objects and events through photographs or video recordings is not a matter of representation at all, but a matter of technologically mediated prosthetic vision. We would then say that we are, quite literally, *seeing* the objects and events of a live recording. Walton argues as follows:

Slippery slope considerations give this claim an initial plausibility. No one will deny that we see through eyeglasses, mirrors, and telescopes. How, then, would one justify denying that a security guard sees via a closed circuit television monitor a burglar breaking a window or that fans watch athletic events when they watch live television broadcasts of them? (Walton, 1984, p. 252)

The concept of image consciousness, however, does require that we place a hard stopper, at some point, on the «slippery slope» between direct vision – that is: seeing things *as* things that are present in actual space – and *depictive* seeing, or “seeing in”, which is directed towards the

image's own space. But it is not immediately clear where to put the stopper, or how. When watching a live sporting event, or looking at a security camera monitor, is it not the case that those events in fact *do* exist “in present reality”, and that they *do* have a specific location in relation to our own – so that we are, as Walton is claiming, seeing them directly rather than as depicted?

Cohen and Meskin's counterargument (Cohen & Meskin, 2004), in their refutation of Walton's transparency thesis, is very useful here: Even if we may or may not have, in the case of live video, knowledge about the depicted events' time and location in relation to our own position (or whether they are in fact located in real space or not), this kind of “egocentric” information is not integral to the perceived object itself, whose nature is precisely what is under debate.

Consequently, when considered independently of any contingent external information available, the display of a live feed or broadcast is still by nature an *image*, like any other, projected as a non-present object on a physical surface plane. In phenomenological terms, we would say that image-consciousness is a matter of how depictions appear in experience. Hence, video recordings, whether live or taped, are not like mirrors or binoculars, not merely another case of technologically mediated prosthetic vision.

*Video conversations*, however, through Skype or similar types of technology, are another matter. As in any live video transmission, there is a piece of hardware, a physical object, with a screen, a surface plane, through or “in” which can see various non-present objects – for example a lamp, in a room, and a grandmother looking at some point below the camera. However, once contact is made, grandmother is no longer *in a video*. Instead she is here, now, having a conversation with us; the sharing of a present reality is impossible to deny, and integral to the way in which the screen display appears in experience. So we have to conclude that, in comparison to a life television event, image-consciousness in video conversation is, as it were, put on hold, or at least severely repressed. At the same time, technical difficulties along the way, supported by the lack of eye contact, may allow the pictorial experience to slip back in, sabotaging the connection, making

us feel that, instead of being together via the screen, we are watching a moving image of each other.

My argument is that in real-time polygonal 3D, the live-rendered screen image is undermined in a similar manner, through a tangible contact that confirms a shared present reality. This non-depictive quality is an important difference between video games, movies and other image-based media. During play, we are not shooting a piece of film with the virtual camera (although we could, obviously), but rather engaging with the real-time environment *through* it. We are using the virtual camera as a prosthetic apparatus, as a way of being able to look and move around, to perceive and act. This manner of relating to the polygonal environment is comparable to how we experience the real world through night vision goggles, video conversations, or drone vision.

Drone vision is a particularly relevant case. Through drones, vision is tele-cast as well as screen-mediated, but the spatio-temporal presence of objects and environments, like the spatio-temporal presence of the doll in my initial example from Walton, is nevertheless integral to the nature of the display, acutely and undeniably. In this case, the only way to reintroduce Husserl's image-consciousness from its suppressed slumber would be to either lean back and watch the view (which we can do at any time also in natural perception), or, alternatively, to start remotely *filming* rather than tele-presently moving and acting.

## **Interactive depiction**

The distinction between image-consciousness and virtuality also helps to analyse how depictions in computer games may be made playable in ways that do *not* question their status as image-projecting surface planes. Certain kinds of games invite us to interact, wholly or in part, with interactive depictions rather than virtual environments.

The notion of interactivity is quite fitting with respect to depictions, but not of much use with respect to virtuality. Obviously, virtual objects are “interactive” in the sense that we interact with them on a computer, but beyond such general categorisations, the concept does not tell us much. The problem is that a vehicle in a racing game, for example, is inherently “interactive” in nature – just like a toy truck, a Lego set, or a whole lot of other things that are present in the world, and that therefore recognises our agency.

Obviously, our world is full of constraints, and so are virtual environments in games, but that does not turn them into depictions. For example, in *Call of Duty*'s (Infinity Ward, 2003) scripted on-rails opening of the Stalingrad level, action is limited to turning and looking around your own axis. Nevertheless, the prosthetic visual apparatus of the first-person navigable camera puts you in a position from which it is undeniably apparent that you are *not* immersed by an interactive 360° movie. The events going on around you, however synthetic in nature, however mediated, and however meticulously scripted, are actually taking place, in present reality. Even if you may not be able to act, the point is that you *could* act – where it not for the fact you happen to find yourself, conveniently, locked in place in a small crowded boat.

Depictive images, on the other hand, as noted above, do *not* recognise agency as relevant, because they are not present. What we can interact with is what is present in front of us, which is not the image-object – not the projected settings, people and events – but the picture, the “Bild” as a physical thing. We can cut and rearrange a strip of film, for example, or navigate a branching path of pictures, or draw moustaches on people in the newspaper. With computerised images, we can make larger and far more complex sets of selections, traversals and transformations. Similarly, we can interact with and co-write the material structure of interactive texts (Landow, 1992), interactive stories (Murray, 1997), and interactive works (McIver Lopes, 2001).

Interactive depiction is a separate artistic and expressive form, distinct from the ontology and aesthetics of virtual environments. Strategies of interactive depiction in games are variants and combinations of three main principles: depictive *spatial navigation*, depictive *hypermedia*, and depictive *interfaces*.

In recent years, 2D scrolling platformers like *Limbo* (Playdead, 2010) or the revived *Donkey Kong Country* series from Retro Studios (Retro Studios, 2010), are prime examples of depictive navigation in games. The feel and atmosphere in these games rests heavily on the style and implementation of their panoramic backdrops. Layered parallax scrolling creates an impression of depth, without compromising the depictive nature of the backgrounds. The backdrops appear in perception as sliding visual projections, like a medieval fresco, or elaborate mechanical backgrounds on a theatre stage.

Depictive *hypermedia* is a form that is especially prevalent in point-and-click- adventure games and the related tradition of “interactive cinema” games (Perron, 2003). In recent years, Quantic Dream’s *Fahrenheit* (2005), and Telltale’s *The Walking Dead* (2012), and its respective successors, has been a particularly important strand of genre development in this area, artistically as well as commercially. In hypermedia games, the unfolding of events is conveyed through pieces of still or moving image (animated or cinematographic), interlinked in a hypertext structure, and often cinematic in style and generic convention. The player needs to make particular events happen through interacting with the depictions, and through exploring possible paths through the structure of canned events. Traditional ways of doing this involves locating and clicking on hotspots, performing urgent Simon Says type responses, and the like. Many games have also explored various innovative ways of using controllers, movements and gestures for this purpose.

In hypermedia depiction, players' actions are symbolic rather than tangible in nature. The player is instructing, pointing, indicating, commanding, gesturing, in order to get to the next picture or trigger the playing of a particular sequence of cinematic animation.

Finally, particularly in the strategy- and role-playing genres, depictions are also utilised as a kind of interactive visualisation, as *interfaces* to game-events that are articulated in formal terms. The theoretical framework from Walton and Husserl is especially useful with respect to this third principle of depiction, as it draws out the distinction, as noted above, between a visualisation and a concrete model.

At first glance, depictive interfaces may be mistaken for virtual objects and environments, but their nature and function as images rather than reflexive props becomes apparent as soon as one starts engaging with the game. In *Advance Wars*, for example, (Intelligent Systems, 2001), the on-screen visuals clearly do not function as a modelling of objects and environments on a physical battlefield. Instead, every piece of animation serves to visualise and provide access to sets of actions and events calculated and articulated at the formal level, from movement ranges to damage impact. As a player, you select your target and type of attack, the game system then runs the calculations, and visuals and numbers inform you of the outcome. In this situation, any kind of physics simulation – perhaps with an intent to make animations more lively or “realistic” – would be entirely superfluous, a cosmetic add-on, simply because the graphics is not where the action is going on. The graphics is not the model, but a depictive visualisation of the model, a depiction appropriated as information interface.

Depictive interfaces, like chess pieces, do not themselves generate game events. In chess, game events are not generated from the behaviour of reflexive props – or indeed from the properties of

any material objects<sup>5</sup> – but from a system of formal rules. If your king is accidentally knocked out of position, this does not mean that your king has moved or fallen. If the game says the king is at D4, the king is at D4. In fact, the king is at D4 *because* the game says that the king is at D4, not because the king piece is located there. The king piece is just a visual aid, and interface. When playing make-believe, in contrast, your soft toy is itself a reflexive prop. If this prop accidentally falls out of the bed, then Teddy has fallen out of bed.

Equally, in *Advance Wars*, a “grenade” does what the game says a grenade does. Hence you will not find, for example, that it accidentally rolls down a hill and explodes among your own troops. To the extent that game events are, in this way, defined in formal terms, projected screen images will remain images also in the moment of interaction; there is no need for virtuality, it has no role to play within the game. If we imagine, on the contrary, a strategy game in which the simulated physical properties *do* matter, as in Bungie’s *Myth: the fallen lords* (Bungie Studios, 1997) – where a grenade can actually, with bad luck, roll back down the hill – we have a very different kind of strategy game, arguably a genre of its own.

There is a way in which can say, as Kristine Jørgensen (2013) suggests, that *any* visual representation in a gameworld is part of the interface, insofar that it enables the player to act meaningfully within a formal game structure. From a phenomenological point of view, however (including Walton in this category), virtual objects stand out as different. Although they do function, most of the time, as means to achieving something in a gaming situation, they do not, unlike interactive depictions, appear in experience as information interfaces. If we consider them as software components, they do of course mediate actions and processes that go on at the algorithmic level, but in the context of gaming and gameplay, their defining function is to generate relevant events from their own properties as concrete models – unlike depictions.

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<sup>5</sup> Football and other physical sports are crucially different in this respect. Here the whole point is to allow the physical properties of objects (and not least the physical properties of the participants themselves) to generate game-relevant events.

Games based entirely on depictive interfaces are *transparent* as games. When we play *Advance Wars*, events do not take place in a virtual environment, but in a game environment that happens to be computerised. Players could, in principle, given sufficient effort, material support and cognitive capacity, play *Advance Wars* without computers. In contrast, computer-generated concrete models are essentially and uniquely digital phenomena.

Not all games, however, are as pure in their approach to transparent gaming as *Advance Wars*. Applying the virtuality-depiction distinction as an analytical tool would reveal a lot of ambiguities. For example, in PC-based action role playing games, from *Ultima Underworld* (Blue Sky Productions, 1992) onwards, there is a built-in tension between depictive interfaces and the principle of virtuality. Whereas the role-playing part uses graphical objects as an information interface, enabling the player to play with a set of formally defined events, the action part of the genre requires, on the contrary, that events unfold from the player's interaction with concrete models, in a reified, quasi-physical environment. The technology of real-time graphics can perform both functions at once – as both depictive interface *and* concrete model – but not without conflicts and ambiguities.

There are also cultural and cross-media ambiguities. The depicted desolate landscapes in *Myst* (Cyan Worlds, 1993) may not be all that different from the virtual desolate landscapes in *Dear Esther* (The Chinese Room, 2012). On a more general level, visual perception carries with it resonances from the images that saturate modern life. This parallel track of resonant image-consciousness is arguably accentuated when we perceive and act through the cinematographic eye of a camera, and especially so if events mimic the generic scenarios of cinema.

Still, engaging with present objects and events is not the same thing as engaging with depictions of objects and events. One of the appealing qualities of computer games is the way in which they

allow us to mix and match between both modalities, most of the time guided by established convention, but sometimes also in new and surprising ways.

Aarseth, E. (2007). Doors and Perception: Fiction vs. Simulation in Games. *History and Theory of the Arts, Literature and Technologies*(9), 35-44.

Army Modeling & Simulation Office. (2017). M&S Library: Modeling & Simulation Glossary. Retrieved 21.03.2017 2017, from <http://www.ms.army.mil/library/gloss.html>

Arsenault, D., & Larochelle, A. (2014). From Euclidean Space to Albertian Gaze : Traditions of Visual Representation in Games Beyond the Surface. *Proceedings of the 2013 DiGRA International Conference: DeFragging Game Studies*.

Ask, B. (2005). Notio Viri Placet [Video installation ]. Bergen: Bergen Kunsthall.

Atari. (1978). Breakout [Atari 2600]. Atari

Blue Sky Productions. (1992). Ultima Underworld: The Stygian Abyss (Version Wing Commander II & Ultima Underworld) [DOS CD-ROM]. Origin.

Bungie Studios. (1997). Myth: The Fallen Lords [Macintosh]. Eidos

Cohen, J., & Meskin, A. (2004). On the Epistemic Value of Photographs. *Journal of Aesthetics and Art Criticism*, 62(2), 197-210. doi:10.1111/j.1540-594X.2004.00152.x

Couchot, E. (1998). Du style et des images numeriques. *Espace*(43), 5-12.

Cyan Worlds. (1993). Myst [PC Windows 3.x]. US: Brøderbund Software.

Eco, U. (1976). *A Theory of Semiotics*. Bloomington: Indiana University Press.

Frasca, G. (2014). Simulation. In M.-L. Ryan, L. Emerson & B. Robertson (Eds.), *The Johns Hopkins Guide to Digital Media* (pp. 452-455). Baltimore: Johns Hopkins University Press.

Higinbotham, W. (1958). Tennis for two [Analogue computer]. Long Island: Brookhaven National Laboratory

Husserl, E., & Brough, J. B. (2006). *Phantasy, Image Consciousness, and Memory (1898-1925)*. Dordrecht: Springer.

Infinity Ward. (2003). Call of Duty (Version 1.0). Uk: Activision.

Intelligent Systems. (2001). Advance Wars [Game Boy Advance]. Nintendo.

- Jørgensen, K. (2013). *Gameworld Interfaces*: The MIT Press.
- Landow, G. P. (1992). *Hypertext: The convergence of contemporary critical theory and technology*. Baltimore: Johns Hopkins University Press.
- Lopes, D. (1996). *Understanding pictures*: United Kingdom: Clarendon Press.
- McIver Lopes, D. (2001). The ontology of interactive art. *Journal of Aesthetic Education*, 35(4), 65.
- Murray, J. H. (1997). *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*. New York: The Free Press.
- Perron, B. (2003). From Gamers to Players and Gameplayers: The Example of Interactive Movies. In M. J. P. Wolf & B. Perron (Eds.), *The Video Game Theory Reader* (pp. 237-258). London: Routledge.
- Playdead. (2010). *Limbo* [Playstation 3]. Playdead.
- Quantic Dream. (2005). *Fahrenheit* [Playstation 2]. Atari Europe.
- Retro Studios. (2010). *Donkey Kong Country Returns* [Nintendo Wii]. Nintendo.
- Russel, S., Graetz, M., & Wiitanen, W. (1962). *Spacewar!* [DEC PDP-1]. Massachusetts Institute of Technology.
- Source the Software House. (1987). *Predator* [ZX Spectrum ]. UK: Activision.
- Sudnow, D. (1983). *Pilgrim in the Microworld. Eye, Mind and the Essence of Video Skill*. New York: Warner Books.
- Tavinor, G. (2009). *The Art of Videogames*. Hoboken: Wiley.
- Tavinor, G. (2012). Videogames and Fictionalism. In H. Fossheim, T. Mandt Larsen & J. R. Sageng (Eds.), *The Philosophy of Computer Games* (pp. 185-200). London & New York: Springer
- Telltale. (2012). *The Walking Dead* [Playstation 3]. Telltale
- The Chinese Room. (2012). *Dear Esther* [Windows]. UK: The Chinese Room.
- Walton, K. L. (1984). Transparent Pictures: On the Nature of Photographic Realism. *Critical Inquiry*, 11(2), 246-277.
- Walton, K. L. (1990). *Mimesis as Make-Believe*. London: Harvard University Press.
- Wollheim, R. (1968). *Art and its objects : an introduction to aesthetics*. New York: Harper & Row.
- Zeigler, B. P., Praehofer, H., & Kim, T. G. (2000). *Theory of Modeling and Simulation* (Second ed.). New York: Academic Press.

