

The Role of Imagination in Narrative Indie Games

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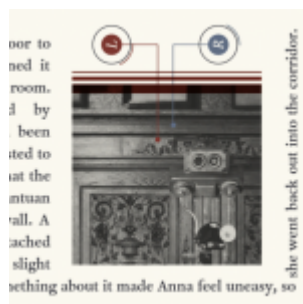
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What binds literature, electronic literature and games is "the shaping and networking of the imagination." Drawing on the ideas of Damasio, Walton and Sartre, Gordon Calleja looks at the synthesizing role of the imagination in narrative indie games.

Introduction

Wittgenstein, in his *Philosophical Investigations* (1953), argues that games are a prime example of indefinable objects that are more accurately described as a family of members with resemblances that overlap. This characterisation is particularly useful when thinking about contemporary digital games, given the wide variety of artefacts that we nominally define as games, but whose family members vary greatly from one end of the family tree to another. One section of this family tree has been loosely labelled as "indie games". While the tag initially referred to games that are designed primarily with goals other than rampant profit and were largely self-published, today the indie game sub-family is more accurately defined by its reaction to big-budget mainstream games and the awards and festivals their creators converge around, more than any specific features per se. Nevertheless this sub-family has its own clusters of family members that are markedly popular. Among these clusters are indie games which emphasise narrative, both in its pre-scripted and more emergent forms (Calleja 2011). For ease of reference I'll refer to these as Narrative Indie Games.

One important advantage of the Wittgensteinian (1953) metaphor of games as a broad family of diverse members is that the family's boundaries are not isolated from other artefacts and activities, but are importantly overlapping and related to them. Some digital games find relatives in the family of sporting activities, others in film, and others still in literature, or to be more precise, electronic literature. While the latter has its genealogy of core texts and a community that has formed over a series of events and publications, it is worth noting that the majority of narrative indie games bear stronger affinity with texts recognized as electronic literature than many of their game cousins, to whom they are affiliated by very few characteristics other than their nominal tag. Narrative indie games contain a fleshed out world or environment, one or more participating characters and a mechanical system that enables a string of events and supports the interaction of

characters in the world. Unlike their mainstream cousins, narrative indie games tend to place text as a central element in the game. Examples of these are: *Kentucky Route Zero* (Cardboard Computer 2013), *A Dark Room* (Doublespeak Games 2013), *Blood and Laurels* (Short 2014), *Device 6* (Simogo 2013) and *80 Days* (Inkle Studios 2014), among others. In various cases, though by no means all, narrative indie game creators tend to give more importance to the literary quality of their writing.

This paper will argue that a key feature of narrative indie games is their reliance on the player's imaginative input while playing. Although this reliance on the imagination tends to be borne out of restricted resources and the size of indie game teams, the effect is nonetheless a set of games whose modes of representation and game mechanics are designed to work tightly together to stimulate the player to explore novel game systems and mentally fill in gaps in representation. This is in stark opposition to mainstream, big budget games, which tend to deliver familiar game systems coupled with photorealistic representation that are easier for the player to take up, but leaves less room for the player's imaginative investment.

In an earlier paper (Aarseth & Calleja 2015) Espen Aarseth and I argued for an approach to games informed by Wittgenstein's family resemblances metaphor. As outlined above this perspective places games within a wider network of artefacts. Games and electronic literature are both subsets of the wider set of media objects that are cybertexts (Aarseth 1997, Aarseth & Calleja 2015). In the above mentioned paper we forward a set of elements that are common to all cybertexts. This paper will explore the role that these constituent elements of cybertexts play in shaping the player's imagination. This analysis will focus primarily on narrative indie games. The reason for this is two-fold. First, I have a strong familiarity with this cluster within the game family as a theorist and also as a creator thereof. Secondly, narrative indie games are the members in the game family that have the strongest affinity with electronic literature and thus are a great way of bridging the interests of academics interested in Game Studies and Electronic Literature research. The main argument I will be laying out in this paper is that the greatest quality of narrative indie games is their ability to create a vivid imaginative experience that the players feel a personal attachment to, while leveraging the power of well designed game systems to hold their player's attention.

Imagination

Imagination plays a crucial role in our experience of games, and other media objects, yet it's one of the most under-studied subjects across media. This is perhaps because it carries little currency in a world dominated by empirical science, since empirical science has only managed to sketchily map the outskirts of its vast and changeable jungle. Like its ephemeral parent, consciousness, our understanding of the imagination is, for the most part, theoretical.

It is also a multi-faceted phenomenon that is hard, if not impossible, to treat holistically.

Imagination can refer to the ability to mentally visualize that, which is not being physically perceived. In doing so we are able to assemble mental images made up of entities that do not exist in themselves, but are made up of a blend of stored memories. Imagination

thus plays a strong role in our capacity to summon past experience in order to simulate the future. Imagination is also associated with creativity and generation of ideas. This breadth of application of the concept requires some rigour in narrowing down the scope of analysis. This paper thus focuses on imagination as mental image or visualization, whether this visualization is derived wholly from within, or afforded through engagement with a physical or representational analogue. The crucial thing to note is that the imagination is a key facet of our game-playing experience. It lies at the heart of some of the more contentious areas of game studies: immersion, narrative and play, to name a few.

Perception and Imagination

We tend to think of visual perception and imagination as two distinct cognitive operations.

In this conception visual perception is the awareness and processing of sensory data originating from the external world, while imagination is the awareness of internal imagery that is generated from stored memories. The ability to distinguish one from the other being generally understood as a basic need for our survival in the environment. A breakdown in this ability to discern stimuli that arise from the external environment to those generated internally is a dangerous and, recreational drug use aside, undesirable state of affairs we refer to as hallucination.

In effect perception and imagination are co-dependent. Every act of perception involves an element of imagination and every act of imagination is derived from perception.

Damasio (1999) argues that the senses contribute data of the outside world to the brain, creating an internal representation of our surroundings. The activation of early sensory cortices derived from their respective stimulation contributes to create the internal representation in the form of a mental image of what is being perceived. We react to the stimuli that pass through and converge in the associative cortices (the basal ganglia, thalamus, limbic system and limbic nuclei) that in turn feed the main output sectors. The mental images created help test possible outcomes to the situation at hand and aid in making decisions relating to a particular course of action and relay this information to the main output areas controlled by M1, M2 and M3 cortices that control the movement of the whole body, limbs and vocal apparatus among others (92).

Perception is thus part of the feedback loop between us and the environment. No part of that process can be fully considered without acknowledging its link with the rest of the circuit. Damasio places importance on the neural activity present in the connection between the object perceived and the subject perceiving it. For Damasio it is a "third party" of firing in neuronal ensembles he calls convergence zones that "couple the current state of the self with the current state of the object world" (Solms & Turnbull, 2003, 92).

The perception of an external object through stimulus of the senses thus creates a topographically organised pattern of neuronal firing in the early sensory cortices. This pattern modifies physiological structures in the brain used to store perceptual and proprioceptive information (memories) and in turn interacts with them in order to create the experience of perception. In the short term period following the perceived experience known as short term memory involves groups of interconnected cells firing together in

self-reactivating loops (Solms & Turnbull, 2002). While the pattern of firing is maintained the information is held in the mind. The longer the duration of this synchronised pattern the higher the chance that it will be activated again. The cells involved become wired together as the synapses making the cell connections become more permeable leading to a more permanent anatomical process. “The continual firing of cells at certain junctions activates in the cells genetic mechanisms that promote the growth of further synapses at those junctions”(146). This turns short-term memories into long-term ones.

Thus the perceptual process is dependent on memories while at the same time, it forms and creates new ones. Following Hebb’s discovery in 1949 of the physiological and anatomical process of forming memories, they can be seen as biological occurrences that inform our view of the world while it imprints itself physically upon us. According to Damasio these memory structures contain potential patterns of neuronal firing called “dispositional representations” (or dispositions). These dispositions are forms of encoded memories that can order configurations of neuronal topographically organized firing in the early visual cortices to reassemble the pattern that caused them to form in the first place through perception. The reconstituted pattern does not recreate the sensation of seeing the object in question, but only an approximate of that object. The reason for this is that in the case of perception there is more data supplied to the topographical pattern in the early visual cortices derived from the stimulated senses than there is in the recall through dispositional representation. This means that there is a striking similarity and physiological common-ground between perceived and imagined objects. The key to solving the long standing debate about the similarity or otherwise of imagined and perceptual objects can be found not in the percept or the imagined object per se but in the temporal and spatial location of the pattern of neuronal firing which they have in common.

Evidence for this claim comes from both experiments in perception and imagination as well as work with patients suffering from brain damage. It has been found, for example, that damage to the cortical areas V2 and V4, that processes colour, results in a lack of ability to imagine colour. Also, as Damasio points out in “patients with extensive damage to the early visual cortices lose their ability to generate visual imagery” (Damasio, 1999, 101).

Kosslyn et al. have conducted a series of experiments to test this hypothesis wherein they use positron emission tomography to reveal that the early visual cortex (primarily area 17) is activated when objects are visualised. They also found evidence that collaborates the hypothesis that mental imagery contains an element of depictive representations not just language like descriptions. An important implication of these findings is that since stored visual information “can affect processing in even the earliest visual areas suggests that knowledge can fundamentally bias what one sees”(Kosslyn et al., 1999, 202). Kosslyn and his group made further experiments that further collaborated these findings with specific attention to Area 17, one of the early visual cortices in the brain. They successfully show that when patterns of stripes are visualized, area 17 is activated and such activation underlies information processing in visual tasks, both derived from perception and mental imagery.

These findings are part of a growing number of a body of evidence that supports the hypothesis that mental imagery and visual perception occur in the same areas and are therefore strongly related in nature. The distinction between perception and imagination becomes one of intensity of stimuli and thus of the intricacy of information that causes the pattern of neuronal firing in early sensory cortices whether internally or externally derived:

Given the belief in the Basic Guess that the firing of neurons causes consciousness, "being conscious of something" makes use of the same neural circuitry whether this is actually perceived or imagined (Aleksander, 1996, 117).

All sense modalities feed into the relevant sense's early sensory cortices and they all leave their mark on the early visual cortices as internal maps of what is being perceived are created and stored physiologically and anatomically in memory through dispositional representations.

Games, Perception and Imagination

Games, like any other media object, require a combination of perception and imagination in order to make sense. Early games required more imaginative investment from the part of the player. As game representation became more mimetic and the technologies it employed improved, less imaginative work was required of the player. The designed game world became more fully formed from the developer's side. While both *Doom* and *The Witcher 3* take place in a 3D navigable environment, the two decades of technological development that separate them result in a simulated world that is far richer in both representation and the flexibility of turning planned internal images into on-screen action (Calleja, 2011).

If we had to plot a rough graph of the imaginative input required from the part of the player to make sense of the game environment we see a steady decline going from games like Crowther's *Colossal Cave* to the *The Witcher*. But when we introduce contemporary indie games into the equation, the role of the imagination is placed-centre stage in the player experience once again.

To consider another example, while *The Witcher's* landscape is more easily perceived as a gorgeous landscape, *Minecraft* landscape requires more imaginative investment to be processed. When a player performs that imaginative investment, however the world of *Minecraft* will tend to feel more personal. The lower the fidelity of a represented world, the more effort one has to put in to process and internalize it, but since the player invests the world with her own imagination, she will tend to get more attached to it. Imaginative investment creates familiarity. This idea of imaginative investment onto a percept comes from Sartre's (2012a, 2012b) work on the imagination, but has also been used by Iser (1979) in his work on psychology of reading and Walton (1996) in his theory of make-believe in.

Walton's Theory of Fictionality

Walton's work on the imagination, fictionality and make-believe outlines the various modalities that the imagination takes. He argues that our need for make-believe does not leave us when we grow older, but instead is transformed in our appreciation of various forms of artistic representations. What concerns us most in this paper is Walton's prop theory.

Walton (1996) distinguishes between what he calls "prompters" (21) and "props" (37). A prompter is a physical object that stimulates the imagination to see it as a different object by virtue of similar features. The example Walton uses is of a tree stump that resembles a bear that acts as a prompter for us to imagine a bear. Walton explains that prompters act as an aid to our imagination, especially to the less imaginative ones among us. They also aid us in exploring new imaginative territory by prompting what we would not otherwise imagine.

Another advantage of prompters over free roaming or verbally directed imagination is the immediacy by which they make the relevant imaginings present to us, in a way that is only partially within our control. Walton explains that this frees us from our natural tendency to reflect and analyze the imagining, which takes away an aspect of its spontaneity. Walton comments on the use of what he calls "artificial prompters" (22) such as toys and sculptures, that allow us to share and coordinate our imaginings with others without the need for "disruptive discussion" (23). Following Lewis-Williams (2002) work on the origins of representational imagery, I would also add that another important function of artificial prompters is the need to fix upon a material substrate the internal world of the imagination in order to give it a stronger sense of reality (Calleja, 2006).

Let us now turn to the more commonly addressed term from Walton's work on fictionality: the prop. A prop, according Walton, is an object that projects a fictional truth. Going back to bears and tree-stumps, if we agree that all tree stumps, regardless of their shape, are bears in our game of make-believe, the tree stump prompter takes on the status of a prop. The difference from prompters is thus that props originate out of a social contract with others about the status of the relevant prompter within the agreed upon fictional world. As Walton puts it: "Props generate fictional truths independently of what anyone does or does not imagine" (Walton, 1996, 39). It is important to note thus that for Walton the crucial property of props is their ability to set out principles of generation that dictate what is to be imagined once the context for the game of make-believe is accepted.

Sartre's Theory of Imagination

Walton's theory of fiction is described in his *Mimesis as Make Believe*. But a good 50 years earlier Jean Paul Sartre had covered similar ground in his two manuscripts: *The Psychology of the Imagination* (2012b) and *The Imagination* (2012a). In these works he discusses at length the process of "dressing" a perceived material analogue (what Walton calls a prompter) with the imagination to arrive at a joint experience of the media object or performance. He calls this process "synthesis". Unlike Walton, he does not develop a theory of fictionality around his work on imagination, striving instead to dissect the workings of the mind in relation to the interface between the perceived and the imagined.

Like Walton, Sartre emphasizes the importance of the spontaneity of the imagination. This is one of the four essential characteristics of the image which are: intentionality, quasi-observation, nothingness and spontaneity. Spontaneity is the characteristic that is most pertinent to the argument being made in this paper so I will delve briefly into what it represents.

Sartre views perception as passive, as opposed to imagination, which is spontaneous, in that the imaginer can move wilfully from one image to the other. The only thing that holds them in existence is the first characteristic, the imaginer's intention:

Sartre proclaims the necessity of distinguishing between the purely mental image, which because it relies on nothing outside of itself possess the highest degree of spontaneity and non-mental images, which are less spontaneous in that they are related to an external analogue for example a painting or photograph (Kearney, 1998, 64).

The spontaneity of an image is higher in the case of the purely mental image. If there is a material representation, no matter how crude the degree of spontaneity starts decreasing. A present photo of a friend will make the image of that friend less spontaneous since I have something present in perception to guide me to seeing him, and I am therefore not relying solely on my will to keep him present in my mind. The picture or other material crutch that aids or projects my imagination is called the material "analogue". The picture of a space or object makes an object appear before the viewer that can make sense of that space or object enough to see it as such. For Sartre "the existence of a psychic phenomenon and the meaning it has for consciousness are identical." (Sartre, 2012b, 19). He goes on to claim that "images, caricatures and photographs are so many species of the same genus" (19). This genus is equivalent to Walton's prompter.

According to Sartre, the purpose of the three members of the image family is to make the scene or object they depict appear in its absence. Thus the viewer's intention is directed to that absent object (19). The act of consciousness to make this possible turns consciousness into the imaginative. In the case of the photo this would require little work; the scene or object are given clearly. The sketchier the representation, the more interpretation (and thus internal, imaginative "work") needs to be done. A square with a triangle on top and a smaller rectangle within will direct the Western viewer's imagination to posit a house. Other lines around it might be roads, hills, trees. The space is created with indistinct etchings that are assembled internally and unconsciously by drawing on previous experiences. For a member of a tribe that is used to seeing semi-spherical huts, the lines will not bring to imagination a house and its surroundings, and possibly no space at all will be experienced if the internal imaginative work done on the assembly of lines yields no sense of space. This bringing together of the material analogue presented to perception and the imaginative processes that make present the absent scene or object is the act of "synthesis". Sartre compares the experience of seeing a portrait and an imitation of Maurice Chevalier by the mime Franconay. The difference arises from how the spectator makes the synthesis of material analogue and imagination:

The difference between the consciousness of imitation and the consciousness of the portrait arises from the materials. The material of the portrait calls directly upon the spectator to operate the synthesis, because the painter endowed it with a perfect resemblance of its model. The material of the imitation is a human body (28).

The impersonator is seen as someone “possessed” (30) by the image of the person imitated. Sartre describes this as a “hybrid condition” (31) that ensues when the imagined object appears (as a synthesized consciousness) on the material analogue. He cites a difference between this sort of synthesis and our experience seeing faces in clouds or inkblots. The distinction made here is that on the one hand we have an artist manipulating a material analogue; the imitator or painter that is using signs to direct our imagination through the synthesis with the manipulated material analogue. On the other hand we have our consciousness creating freely the face in the cloud or inkblot. In one case the synthesis is directed from another agent, in the other it is done by the viewer himself spontaneously.

The central notion which I will take from Sartre’s account is that of the synthesis between the material analogues in perception with the imagined internal consciousness during game-play.

Characteristics of Games

How do these concepts relate games in general and narrative indie games in particular? In a similar analysis carried out in relation to literature, Jean Paul Sartre and Wolfgang Iser examined the process of translating arbitrary signs on a page into images in the mind. Both theorists emphasize the importance of seeing the text as the product of syntheses between arbitrary signs and the perceiving mind. In some cases images can be present thus these are added to the process of syntheses. Aside from these the physical incarnation of the text also plays a minor role in how its contents shape the imagination.

When it comes to games the situation is more complex. When we consider the constituent elements of the game object that shape the perception and imagination of the player we have a set of representational signs, similar to literature, but these representational signs interact with a matrix of other elements that make up the game-as-object influencing considerably our perception of each individual element (Aarseth & Calleja, 2015). In a paper presented at the Foundation of Digital Games Conference 2015 Espen Aarseth and myself outline the core characteristics of cybermedia objects, of which games are a subset. These characteristics of games are : the variety of representational signs the game employs (audio, visual, verbal text etc), the mechanical system (rules and code), materiality (physical instantiation of the game) and the player or human agent whose perspective on these elements potentially turn the cybermedia object into a game.

Representational Signs and the Imagination

Representational signs take the form of verbal text, still and moving images, sound effects and a soundscape. All of these elements can be either diegetic or non-diegetic, with some instances landing somewhere in between. In games it is quite common to have images, sound and text, and at times haptic feedback, that give the player information about elements which are not otherwise accessible, such as the internal state of the characters, memories or purely ludic information such as the score the player has attained so far.

Verbal text draws on the power of the written word to generate an infinite range of imaginings that benefit from the nuance of arbitrary expression, are flexible to deploy and have the potential of achieving literary affect, the latter being a goal that games like *Kentucky Route Zero* (Cardboard Computer, 2013), *Device 6* (Simogo, 2013), *80 Days* (Inkle, 2014) and *A Dark Room* (Doublespeak, 2013) aspire to. The written word requires effort to take in, however, and in an age where attention spans are decreasing and cognitive engagement increasingly emulates the rhizomatic structures of its networked prosthetics such effort is in short supply.

Adding images helps to cut down on unnecessary descriptions while conveying mood, spaces and anchoring the player in a specific location within that space giving her a sense of presence therein (Calleja, 2011). Visuals and animations also facilitate navigation and interaction with the environment in ways that would be very cumbersome to achieve solely through text, for example. The more abstract, or low-fidelity nature of visual representation used in these games is crucial to allow the player to generate her own internal images in harmony with the other prompts being discussed here. If the visual representations are too mimetic in nature they will dominate and leave less space for the player to imagine her own version of the world.

When we add audio to the mix of representational signs we get a powerful means of summoning images of the source of the sounds in question. The sound of wolves howling in the distance brings to mind an image of the pack and adds to both the atmosphere and the sense of danger the howling might create. Ambient sounds can greatly contribute to both the mood and sense of space created by the visual representation and text.

The Material Medium and the Imagination

The material medium that is used to experience the game shapes the perception and imagination of its content in a more considerable fashion than is the case with most other media. An obvious example of the way the material medium that is used to experience the game shapes the imagination would be the difference between playing a first-person shooter while wearing a virtual reality headset such as the Oculus Rift and holding a gun-controller and walking on an Omni treadmill to playing the same game on an iPad. A less obvious and perhaps more pertinent example to the subject at hand would be the difference in experience between playing an indie narrative game on PC as opposed to an iPad. The mouse and keyboard controls of the PC along with the chair and desk sitting arrangement creates a considerably different experience to curling up, headphones in ear, with one's iPad on a couch and engaging with a narrative indie game. The latter

enjoys a closeness of experience and haptic playfulness that I believe fosters more openness to imaginative engagement than the latter for the same reasons that reading a print novel on a couch fosters a stronger engagement with the fictional world described therein than reading the same novel while sitting at one's desktop PC.

The Mechanical System and the Imagination

Finally we have the mechanical system. This constitutes the code and rules of the game.

I separate them here for convenience but of course rules are enacted, at least for the most part, by the game by code and also partially through the game's community in the case of multi-player games. Although code is an essential part of the game and it influences heavily our overall experience, it does so in a way that is mostly opaque to the player. Rules however, are either presented to the player directly or are learnt through interaction with the game system; testing its boundaries for what is and is not possible in the world. Rules are a crucial element of shaping the player's imagination and greatly supplement the representational signs both in terms of interpreting the situation at hand but also and importantly to give a sense of reality to the game world.

Travelling through *A Dark Room's* (Doublespeak, 2013) world, communicated through a minimalist ASCII character map I can only survive if I have enough food and water. Each day I travel away from sources of food and water I consume these resources and risk dying of hunger. When my water run out I cannot help but imagine my character struggling to travel, parched and sullen. Rules thus supplement the mental images that are generated by the iconic and arbitrary signs that make up the majority of percepts in the game.

Rules and code can be a powerful set of prompters. They encourage and enrich what Walton and Sartre have called the spontaneity of the mental image. Rules prescribe a set of parameters that game imaginings are structured upon without determining their exact nature. Rules thus act as a spontaneous and transparent source of imaginative synthesis.

Furthermore, rules give a reality status to the imaginings by imbuing the world and its inhabitants an existence beyond the mind of the player, a key feature of prompters, according to Walton. In addition the hierarchy of goals and feedback loops these enable also structure the player's activities in the world, which importantly increases the intensity and longevity of involvement, which goes a long way to combat the waning of audiences' attention mentioned above.

Conclusion

So let us return to our question regarding the success of narrative indie games. I would argue that one of the major factors for the success of this subset of games has been their ability to stimulate the imagination vividly by drawing on prompters from every part of the matrix outlined above. The key factor here is that these games draw on prompters from all their constituent elements, with each element supporting and enhancing the process of synthesis of the other. This combination of prompters from the various parts of the cybermedia characteristics matrix described above is maintained through a delicate balance of stimulating mental imagery without determining its contents. Their attraction

speaks to the more active, or writerly forms of media engagement, to quote Barthes, that mainstream games have not only failed to address, but for the most part managed to pointedly work against.

The conversation about the malleable, if not outright amorphous, boundaries between literature, electronic literature and games tends to focus either on their formal elements or the merits and downfalls of each in relation to the other. Under that lens the differences that abound seem irreconcilable. But in reality there is a common denominator that binds them together: the shaping and networking of the imagination and it is here that I propose that we explore for further insight into the three media forms.

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