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## Introduction

Thanks to the high speed rendering possibilities of modern-day computers, digital games' graphics are closer than ever to become 'photoreal'. Many new video games display astonishing film-like graphics that were unimaginable even only a couple of years ago. However, photorealistic graphics are not the only visual trend: indie video games employ more and more different kinds of aesthetics such as old-fashioned "pixelated" aliased aesthetics, or even hand-drawn-style graphics. 'Cartoonesque' aesthetics are not new – let's think of digital games aesthetically close to Japanese *manga*. However, even if such graphics were purposefully produced by some studios (and weren't simply attempts to avoid the challenge of creating photorealistic graphics), this style was not widely applied throughout the games industry until recently. Today a new taste for analogue-looking graphics is arising, and it has being boosted – and not hindered – by the new high speed rendering possibilities.

Non-photorealistic rendering (NPR) mostly concerns indie games such as *Superbrothers: Sword and Sorcery* (Capybara Games 2011) and *Limbo* (Playdead 2010) or indie games gone mainstream such as *Minecraft* (Mojang 2011), but it is gradually expanding to larger productions – for example the FPS *Borderlands* (2K games 2009) and its sequels. It appears that in a culture that is dominated by digital technology – and in a medium that is inevitably digital – there is an evident and strong re-emergence of analogue aesthetics. In the next paragraphs we will approach the rise and features of this style from a semiotic perspective and we will try to figure out the mechanisms of its contagious appeal.

## The Indie Style: Constraints and Authenticity

In the last years, independent games, albeit being still a niche market in the gigantic



This attitude is at the basis of the success of a certain set of indie games<sup>i</sup> that therefore share a certain style that is metonymically referred to as “indie” – the third meaning illustrated by Juul.

The combination of the budget induced constraints and of the peripheral features of such games determines much of their design: not only the aesthetic, but also the game-play. The result is generally a rhetoric of authenticity that looks at the past in which all forms of gaming were peripheral (and as such, often stigmatised and marginalised) as a Golden Age and thus advocates a return to the *mos maiorum* deeply connected with the feeling of *nostalgia*.

## **Post-digital, Nostalgia and Retro-Gaming**

The context in which the indie style is born is one where digital technology is playing a cardinal role in contemporary culture. For the first time in history, almost every individual in the western world is constantly bringing along a powerful computer, often used to translate their existence into digital data (pictures, GPS positions etc.). The Web allows to interact with institutions, public administration, banks and offices without the need of moving through the physical space and therefore eroding its meaning (Thibault 2016). Digital goods carry on the de-materialisation of several products such as books, films, music.

The digital saturation has finally led to the emergence of an inverse tendency – born within the *post-digital* paradigm. Post-digital, according to Cramer (2015) indicates the contemporary disenchantment with digital information systems and technological gadgets that entails a revival of “old” media and tools, such as vinyl discs and typewriters. The new wave of curiosity and involvement with vintage – the so called *hysperia* (derived from hysteria + hipster) – is certainly part of this cultural

trend.

Although a connection between the hipster subculture and digital gamers could seem odd at a first glance, it is likely that the nostalgia that leads to retro-gaming is not dissimilar to the one that leads to vintage taste. Leone (2013) dedicates some interesting pages on the relationship between vintage and nostalgia and concludes that the *semiotic product* involved in vintage goods is, in fact, time.

“Time is also, and perhaps essentially, an object of desire. It is perhaps *the* object of desire, especially if the anti-subject of this longing is identified with the anti-subject of life itself, that is, death (...) As a consequence time is also sold and bought, but it is not the market of time that creates its desire. It is rather the opposite: it is the anthropologically rooted longing for time that creates a market for time-enhancing objects and experiences, including the narrative one. What do readers pay for when they pay for stories, if not access into a possible world that multiplies the extension of biological time? And the more a text is able to create this illusion of temporal expansion, the more human beings will be ready to pay for it.” (Leone 2013, 9-10)

Indie games seems to respond to this craving for time in two distinct ways: by telling stories they offer virtual extensions of the players' biological time and by being “retro” in their aesthetics they are able to create an illusion of temporal extension bringing back the players to the “good old times”.

The budget constraint that leads to the indie style plays an important role in the creation of a sense of authenticity also thanks to the “underdeveloped” look that it gives to games. Frow (1991) analysing the importance of nostalgia in tourism argues that tourism often consists in the nostalgic purchase of a feeling of authenticity that the industry of cultural consumption encourages tourists to find abroad, especially in the underdeveloped circumstances they pay to come in contact with: it is precisely the lack of development which makes an area attractive for a tourist (Frow 1991,







of the strength of many AAA games.

However, also high quality NPR visual aesthetics are becoming increasingly popular among players, possibly to the extent of starting to undermine the 'games must be photoreal' paradigm. Arsenault and Côté (2013) explain that technology isn't everything when dealing with digital game innovation:

"Technology is only one term in the broader equation of game innovation, and it often functions as a facilitating agent, rather than a necessary cause, for many innovations. A technological innovation opens a field of possibilities in the technological circuit." (Arsenault and Côté 2013, 3<sup>rd</sup> paragraph)

In an outdated, but prophetic, paper Masuch and Röber (2003) used several arguments to promote the use of rendering styles alternative to photorealism and foresee the fall of the totalitarian rule of realism and the rise of a new taste for more dream-like graphics. When article was published computer graphics were lastly capable to allow PC and fifth generation consoles to give an illusion of photorealism: games like *Half Life 2* (Valve 2003) for the first time were able to propose to the players a new kind of immersive experience.

The authors reacted to this new step in virtual reality by attempting to redefine "realism" as something not entirely determined by visuals, but dependent on various factors:

"There are a number of aspects that contribute to the perception of realism like realistic sound, realistic character animation or the believable behaviour of objects and characters (which is controlled by the physics-engine or the AI-engine)." (Masuch and Röber 2003, 4)

Realism, according to the authors, is also a matter of internal coherence, a feature

necessary to give to the virtual world a characteristic of believably. However, in video games photorealism appears to be less relevant than *immersion*. The latter depends mainly on the consistency of the graphical representations and on the behaviour of game physics: "Immersion is like a soap bubble: Even little discrepancies like an incorrect shadow will break the illusion of photorealism and thus the immersion and the bubble are gone" (ibid., 6). The key concept to get immersion, therefore, is *believability* and, surprisingly NPR techniques are often more believable, more natural and easier to perceive than the others. Their non-realistic nature allows them to reach a higher amount of deviations without disturbing the image or breaking the atmosphere: ironically, less realism leads to more believability. NPR games, then, certainly don't "*feel*" as real as photorealistic ones might, but thanks to their enhanced believability they can be used for artistic purposes: they are able to simulate the style of different media (e.g. comics), and may strengthen the storytelling by shaping the style used throughout the game to evoke emotions, or to establish certain moods. According to the authors, then, photorealism is not always desirable as NPR techniques offer a broader variety of styles. In addition, due to the continuous evolution and wide diffusion of photoreal games:

"Gamers might become saturated and will look for something different. This *different* on the graphics side can be filled using NPR techniques, which allow one to create a virtual reality that looks very different from our own. In addition, NPR techniques can also be used to support storytelling and to fulfill an artistic vision. Something that unleashes the power of dreams and fantasy and which allows us to drift away from our own world, just limited by our own imagination." (Masuch and Röber 2003, 10)

The visual alternatives available to NPR, therefore, have many advantages that can make them desirable for game design:



through eye-candy visual aesthetics is one of the features that make it pleasurable to play a game and therefore that it is often a key objective in the creation of aesthetic regimes.

## NPR and analogue Aesthetics

A graphic alternative able to combine visual pleasure and nostalgia is the *analogue aesthetics*, whose influence is becoming more and more important in independent games. Many indie games feature hand-drawn or hand-drawn-like graphics that don't appear (or sometimes aren't) digitally generated. The digital nature of video games, then, is hidden – almost denied – while the fictitious nature of the game is brought to the foreground. This trend, hence, is in a double opposition:

<sup>35</sup><sub>17</sub> it goes in the opposite direction to photorealism, stressing its unreality and its distance from everyday life;

<sup>35</sup><sub>17</sub> it is in open contrast with pixelated graphics, because it hides the digital nature on the game under an analogue appearance.

Analogue aesthetics are able to offer a more nuanced emotional palette and original and pleasurable dream-like visuals. They can boost immersion without losing any believability, as long as they are coherent with their own assumptions. But their success is also due their ability to trigger a wide range of “nostalgias”, both personal (connected with childhood memories) and historical: the longing of a mythological time that we have never experienced (Stern 1992).

Games exploiting analogue aesthetics take the players in a world that is both pre-digital and post-digital, a digital world in which technology seems to be non-existent or irrelevant. Mentioning some examples may be useful.



play follows the rules of typical retro-gaming: its developers describe *Cuphead* as being particularly difficult to play, with an emphasis on action over plot. Albeit in the background, also the latter can be considered “innovative”, though, as the developers “chose to abandon a typical 30s damsel in distress plot for one where Cuphead perpetually creates trouble for himself” (Moldenhauer 2013).

The game goes back to the origins of animation, exploiting a well established language as a treasure-trove of inspiration creating a sensation similar to those of *steam-punk*, along the line of: *what if video games were made in the past?*

Our second example is *Future unfolding* (Spaces of Play forthc.), a surrealistic top-down action adventure that lets the player explore a world filled with mysterious wild life. The creation of the world is entrusted to a complex series of algorithms of procedural generation that also determine many of the rules and events occurring during the game. This use of *semiotic explosions* (Thibault forthc.) makes the layout of each play-through extremely different and therefore protects the “mysteriousness” of the experience. The goal of the game is to explore and to try to get clues and discover patterns to locate hidden secrets. The focus on exploration and on the gradual understanding of an unknown world requires a visual aesthetics capable of providing an adequate support to create immersion.



people play an alpha build of the game, they often describe it as a painting coming to life. (...) A second goal was to let the visuals be abstract enough to allow for ambiguity." (Space of Play 2014)

There is no much information of the game-play yet, so we can't know its coherence with the graphics. However, a developers' quote from the official website of the game sheds some light on the importance of authenticity and nostalgia in the development of the game.

According to the description of the game, the mood was:

"draw from our personal experiences as children growing up in Swedish and Polish countryside respectively. As children we explored the surrounding forests that seemed full of mystery and adventure. Back then we came up with stories about the things we discovered, and created our own worlds through exploration and play. Some of these stories were based on local folklore and others we created ourselves." (from the website [futureunfolding.com](http://futureunfolding.com))

Even if both *Cuphead Don't deal with the Devil!* and *Future unfolding* are, in different ways, highly influenced by analogue aesthetics – much more than most video games – they are also completely different in many other aspects. *Cuphead* is a run and shoot, a retro-game with a syncopated rhythm while *Future unfolding* is set in an innovative, ever-changing, procedurally generated world, and it features a more relaxed pace. However both games appeal to the same idea of post-digital nostalgia, hiding their own digital nature under metaphors and semantic devices in order to recreate a sort of primordial innocence connected with infancy and old stories.

## **Lumino City: A truly post-digital Game**

Post-digital shouldn't be considered as a Luddite reaction to digital that only





between digital and analogue and to exploit the strength of both.

## Conclusions

The compound nature that characterizes *Lumino City* – but also, in a lesser degree, the great variety of games inspired or exploiting analogue aesthetics – is likely to become quite common in the near future. There are three different factors that may orient new games to similar solutions.

The first one is that the number of new indie games and their success is higher than ever. Thanks to the possibilities given by crowdfunding and to the visibility that such games can gain on platforms like Steam, many studios composed only by one or two developers are able to create and commercialize their own games. These studios, however, can hardly afford complex photorealistic graphics, and therefore turn to different visual aesthetics that, although being cheaper, feature a similar amount of believability.

The second factor is how pleasurable these visual aesthetics can be. Being both original and genuinely beautiful, the games exploiting them can become extremely appealing in a market saturated with high quality, photoreal, digital images. Novelty makes these aesthetics interesting, but it is their analogue features that trigger immersion. Every analogue image witness a particular care in the creation of the composition, in the details, in the chromatic choices and so on, that would be impossible for a rendered image. In addition, all the tiny imperfections, all the asymmetries and irregularities both add believability and help in creating a perceived sense of smoothness and naturalness. All these features are deeply connected with the sense of nostalgia that they can provoke, which is a cardinal asset in an era of



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- i In facts, not all financially independent games are *indie*: game's fake imitations or poor attempts to emulate successful games hardly fit in the second category.
- ii For a more thorough analysis of this game see Garda (2013).
- iii For the importance of digital visual effects and *ilinx* see D'Armenio (2013).