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Post-digital games:

The Influence of Nostalgia in Indie Games' Graphic Regimes

Mattia Thibault

Abstract

This paper approaches the visual alternatives to photorealistic computer games graphics – and in particular those influenced by analogue aesthetics – that appear to become more and more common in the indie game scene. The release of a great number of retro-games with pixelated aesthetics, the imminent publication of many analogue-looking video games such as Cuphead and Future Unfolding and the realization of the first hand-crafted video game, Lumino City, are symptoms of a change of taste in the game industry, that must be addressed. In this paper, we will try to situate this phenomenon in the broader context of the post-digital and, in particular, we will link it to the idea of nostalgia. Some semiotic tools such as the idea of constraint and the dichotomy plaisir/jouissance will also be useful to shed some light on this trend and on its aesthetic entails. Along with some theoretical considerations on these topics and on some aesthetic features particularly relevant for digital games (such as believability and immersion) we will focus on some successful contemporary indie games featuring retro or analogue aesthetics. Within the post-digital paradigm the analogue and digital, we argue, aren't perceived as antithetical, but available to many exciting forms of hybridization. The result of this mix is not likely to replace the photorealistic style of AAA games, but offers a valid visual alternative to it, one that promises to bring some heterogeneity among digital games' graphic regimes.

Keywords: post-digital, nostalgia, analogue aesthetics, graphics, non-photorealism, believability, immersion, retro-gaming, hand-drawn

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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 remergence 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

business of digital games, have acquired a stable identity and even their own *style*, trespassing the boundaries of their commercial definition and gaining an identity of their own. According to Juul (2014) the creation of such style has been one of the biggest game design challenges of indie developers. Low budget means many limitations and the risk was indie games ending up being low-quality imitations of big-budget games.

Limitations, however, can also be resources – exactly as happens with rhymes and metrics in poetry. Greimas (1986, my translation) calls the *constraints:* "a series of obligations, voluntary or involuntary, conscious or unconscious, in which an individual incurs as an effect of his participation to a semiotic practice.". Constraints, forcing the author to step out of her comfort zone, boost creativity and lead to the invention of new solutions… or to rediscover the old ones.

Japer Juul, in his paper on the independent style (Op. cit.) states that the expression "independent game" has three distinct meaning: a game developed by a small and financially independent team, a moral/political/aesthetic claim and, finally, a specific style. The first one is a socio-economic background, out of the control of the developers, but the second and the third are cultural consequences of the first.

Being low-budget puts indie games in opposition to big-productions. Using Juri Lotman's terminology we can say that AAA games are *central* and indie are *peripheral* (Lotman 1990). In other words, big-budget games are mainstream and influential, but generally stiff and repetitive while independent games are more creative and dynamic, although often unknown to the majority of players. From this opposition comes the "moral/political/aesthetic claim" that defines indie games: the very fact of being independent allows game developers to experiment, invent and take risks.

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This attitude is at the basis of the success of a certain set of indie gamesⁱ 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

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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,

151). Similarly retro-gaming propound a rhetoric of authentic experiences in contrast with the "decadent and corrupted" contemporary Triple-A game scene full of pampered casual players and easy-to-win challenges. This rhetoric is generally based on a personal nostalgia (Stern 1992): a longing for something that has been experienced in first person or that is still enough close in time to be perceived as something somewhat intimate.

Moreover nostalgia has a twofold nature in retro-gaming (Garda 2013): on the one hand, there is a restorative nostalgia (that focus on the creation of emulators and on the remake of classics for new platforms) and on the other hand, a reflective nostalgia (that sees the past as an inspirational set of stiles) which is exactly what triggers the extremely positive response of an elite part of the game community to the indie style.

Rendering Techniques and Constraints: between Technology and Aesthetics

We have mentioned the importance of constraints in the creation of the indie style. This restrictions are nowadays primarily a budged concern, but they feature an important parallelism with the technological constraints that used to shape digital games in the near past.

The link between video game graphics and technological achievements is self-evident. The use of modest rendering techniques imposes limitations on colour palette, resolution, and memory, influencing deeply the final form of the game. Technological development has been a predominant element in determining video game aesthetics so much that the kind of CPU used become the discriminant – as a result we have the 8-bit, 16-bit, 64-bit, and the 128-bit eras (Màrquez 2014).

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The small productions of indie games turn naturally to these simpler, yet still efficient, rendering techniques, due to the fact that they are easier and cheaper to implement in their games. However, this pragmatic consideration is only part of the picture: the rise of the indie style described by Juul (2014) often manipulate the appeal that this kind of aesthetics exercise on some players.

This is how "pixilated" aliased graphics, often accompanied by chiptune music, became a powerful trend in indie gaming. This kind of aesthetics is a celebration of the *digitalness* of the game, that doesn't try to hide the nature of a digital construct, but asserts and exhibits it, answering to the nostalgia for a past state of technology and gaming. These visual aesthetics exploit only a portion of the possibilities granted by current technology and therefore, mimicry games of a specific moment in the past. The two different constraints – economical and technological – are merged into the creation of a vintage product that appeals to the players' longing for the Golden Age of digital gaming.

Lets consider, as an example, *FTL*: Faster Than Lightⁱⁱ, a top-down, indie RTS created by Subset Games and released in September 2012.

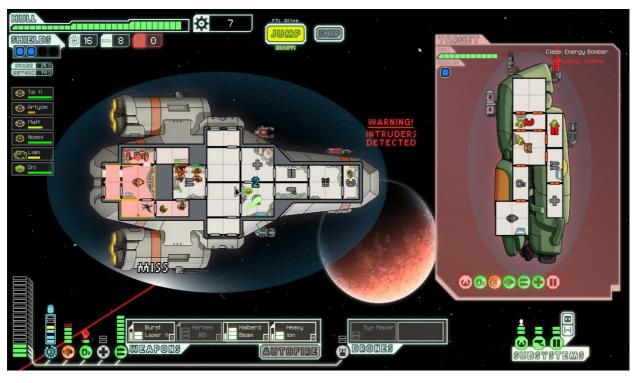


Fig. 1: FTL (Subset Games 2012)

In this crowd-funded RTS game, the player controls the few members of a crew in a single spacecraft, and must guide them through a number of sectors, systems and events created with procedural generation. The game aesthetics – featuring clean and simple old-fashioned graphics – are consistent with its game roguelike mechanics and permadead, both bringing the victory rate down to 1/5 – quite low, if compared to other contemporary games, but quite common feature among indie games, which generally aim at being as hard as game were in the 80s.

Beyond Technology: Immersion, Believability and Pleasure in NPR

The unprecedented high speed rendering technologies available to today's game designers lead to the release of many best selling games with astonishingly "realistic" graphics aiming at attaining a maximum degree of photorealism. There is not denying that this kind of graphics is appreciated by the majority of players and is one

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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, 3rd paragraph)

In an outdated, but prophetical, 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

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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:

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- they can be more believable that a poor photorealistic rendering;
- they can imitate analogue styles;
- they can consistently represent dreamy situations;
- they can support artistic and emotional storytelling.

This bring us to the last feature of graphics that we should take in consideration: that of *pleasure*. After all the word "aesthetics" is etymologically related to the idea of perceiving, and epistemologically concerned with what, of the perceivable, is considered pleasurable.

Lauteren (2002) in an attempt to outline an aesthetic theory of video games, applies – probably for the first time – Roland Barthes' cardinal idea of *plaisir* (Barthes 1973) to digital gaming. Barthes outlines two forms of pleasure: *plaisir* – which denotes the kind of pleasure that gives contentment, elation, satisfaction and ease – and *jouissance* – which involves shock and faintness. According to Lauteren (ibid.) digital games can provide both depending on the type and mechanics of games.

Following Lauteren suggestions, we can try to combine Barthes' dichotomy between *plaisir* and *jouissance* with Caillois' (1967) famous forms of play – agon (competition), alea (randomness), mimicry (imitation) and ilinx (vertigo). On the side of *plaisir*, we would therefore have agon and alea, which need more strictly regulated sets of rules and generally give pleasure only in case of victory: winning a competition or a game of chance brings euphoria and fulfilment. On the other hand, mimicry and ilinx belong to *jouissance* as the objective of those games is to lose one-self in play. The visual aesthetics of a game, therefore, are of central importance for giving *jouissance*: both mimicry and ilinxⁱⁱⁱ exploit digital games graphics in order to allow the player to fade into the virtual world they create. In other words, we can argue that immersion

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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:

- it goes in the opposite direction to photorealism, stressing its unreality and its distance from everyday life;
- 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 predigital and post-digital, a digital world in which technology seems to be non existent or irrelevant. Mentioning some examples may be useful.

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Cuphead Don't deal with the Devil by MDHR (coming in "1936... plus eighty years") is a Canadian run and gun indie video game entirely drawn in the style of 1930s cartoons.



Fig. 2: *Cuphead Don't deal with the Devil* (MDHR forthc.)

Inspired by the works of 1930s cartoonists such as Fleischer Studios and Disney, Cuphead developers strive to recover their surreal atmospheres with a meticulous work on visuals and on music (jazz, coherently with the setting). Following the 1930s process with precision, each animation has been drawn by hand and all backgrounds hand-painted (Moldenhauer 2014).

Cuphead is an extremely original game, being both highly innovative and strongly oriented towards the past. Pairing with its analogue-looking visuals also the game-

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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 in 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.

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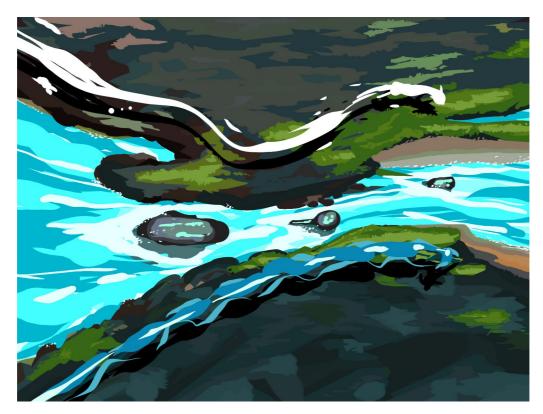


Fig. 3: Future Unfolding (Space of Play forthc.)

Future unfolding graphic regime seems an answer to Masuch and Röber (2003) appeal for oil painting-like video game graphics: the movement of the avatar on the screen leaves a trace of colour that recall the movement of a paintbrush on a canvas. It is undoubtedly appealing and innovative: instead of using analogue art it imitates the process of its creation.

In an interview with Andreas Zecher, the developers explained their point of view on their game's graphics:

"Our goal was to create a dynamic world where everything can shift it's shape at any time. To do this, the art style needs to communicate liveliness and change. We're using particles to build up the world like an Impressionist painter would use thin, yet visible brush strokes to craft a painting. When

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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)

Even if both *Cuphead Don't deal with the Devil!* and *Future unfolding* are, in different ways, highly influenced by analogue aesthetics – much more that 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

advocate for a nostalgic return to the origins. It is, more likely, a change of paradigm that finally accepts digital systems as "normal" – instead of as "progress" – and therefore is prone to hybridize them with a renewed taste for the analogue. Digital music is therefore recorded on vinyl discs, digitally designed toys are made out of laser-cut wood and, as we have seen, video game graphics are sometimes drawn instead of being digitally designed. And this mix of analogue and digital is probably going to increase in the future. After a fist moment of burning passion for everything that was digital, the trend is shifting towards a mediation between two ways, exploiting the strengths of both: digital procedural generation and human unpredictability, digital perfection and analogue freedom, digital spreadability and analogue uniqueness.

There is an example, among video games, of a perfect balance between digital and analogue that goes beyond the hand-drawn video games mentioned before: State of Play's game *Lumino City* (2014), a very particular puzzle game telling the story of Lumi, a young girl who follows a series of clues in order to save her grandfather.



Fig. 4 Lumino City (State of Play 2014)

The peculiarity of this game, however, is that it is completely hand-crafted. State of Play members built the entire set of the game out of paper, cardboard wood, some little lights and a custom set of motors. The creation of the game has taken three years and the team built a 3-meters-high miniature city, photographed it and turned it into a natural-feeling video game world. State of Play's project surpassed digital aesthetics imitating paper-craft (used in *Crayon physics Deluxe* by Petri Purho, 2009 and *Tearaway* by Media Molecule, 2012) and proceeded with the creation of an hybrid game. One of the reasons behind this decision, the practical one, was that using real paper was much more feasible for a small team that realizing a virtual version of the same set. However the effect of warmth, the tangible feel of authenticity, of materiality acquired by the overall experience is probably the main reason of the success of this game. The result of this experiment is a visual aesthetics that is both photoreal and dreamily cartoonesque, a graphic regime able to bridge

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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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vintage taste.

Finally, the third factor is the post-digital paradigm. The digital being all but done, future cultural products will more and more be hybrids, able to exploit both computing and materiality.

Does all this mean that the time of photorealistic high quality rendering is over? Of curse not. It means, on the contrary, that the future of video game graphics will be in the name of diversification. AAA games with breathtakingly realistic graphics will continue to exist and develop even more photoreal rendering, but side by side with retro-games featuring aliased 8-bit graphics and chiptune music, as well as with digital games exploiting, in different measures, analogue features. For maybe the first time in the rather brief history of video games, the aesthetics regimes will be truly a matter of choice.

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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).
- For the importance of digital visual effects and *ilinx* see D'Armenio (2013).