Playing with Senses:
how games with minimal graphics can trigger player imagination

*A comparative analysis of existing games
and the game project "Whisper"*

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*Kazimir Malevich, **Black Suprematic Square**, 1915.*
Oil on linen canvas, 79.5 x 79.5 cm, Tretyakov Gallery, Moscow.

INTRODUCTION

> *"To the Suprematist the visual phenomena of the objective world are, in themselves, meaningless; the significant thing is feeling."*

- Kazimir Malevich (1926), **The Non-Objective World: The Manifesto of Suprematism**.

With those words, Russian painter Kazimir Malevich summarized the essence of his thought, in the manifesto of his newly founded artistic movement.

Back then, after the horrors and the violence of World War I generated the subversive Dada experiments of the Cabaret Voltaire in Zürich[1] and after Marcel Duchamp dared to bring a urinal to an art exhibition in 1917, one question was at the core of every main artistic discussion: what is Art?

Or better, what are the requirements for something to be called a "work of Art"?

While that question is not going to be the topic of this thesis (or at least not completely), it's a good example to explain what the video games scene[2] is facing right now.

In the past decade the video game medium popularity grew enormously, with more people taking part in it both as players and as developers; within them, some begun to use video games as a way to express themselves and make more than just pure entertainment products.

As the number of experimental games grew bigger, many people started to ask themselves if it was still possible to refer to them as games, as they didn't follow the standard definition of "game", or better, they didn't resemble anything presented as a video game before.

And here's the point of my decision to start this introduction quoting Malevich: that thought came in a time when the lan-

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[1] Richter, Hans. ***Dada: Art and Anti-art***.
Oxford University Press, 1965.
[2] I will not call it market nor industry, as many people do games not only for money and entertainment but as a way of expressing their ideas and feelings.

guage that was previously considered mandatory to create something coherent with the medium was questioned by a new idea and a new use of the medium itself.
"I could do it". "That's not art". "That's not a game".

"Can we create a form of digital entertainment that explicitly rejects the structure of games? What is an interactive work of art that does not rely on competition, goals, rewards, winning or losing?"

- Michaël Samyn (2010), **Not a Manifesto**.

Those sentences usually (and reasonably) come out when we evaluate something based on what we think it should be and, usually, we are brought to think about what something should be after we saw many things that claim to be the same thing as the one we are talking about.
For video games, that means minor discussions on every aspect of a game (gameplay, narrative, graphic language, sound...) without caring about how those languages interact and combine to create that experience feeling that is so unique to video games.

As covering the whole topic would be way too complicated (and I will happily leave it to more expert game theoreticians), with this Thesis work I want to concentrate only on the aesthetics, to research end eventually find out how games can convey feelings and emotions without relying on a detailed[3] graphic language, bringing the player to use its imagination as a powerful tool to enhance the experience.

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[3] I could have said "realistic", but that would have excluded all those games that, without having a realistic environment, provide enough details through the graphic language and inevitably end up avoiding the player to have to use its imagination to fill the gaps that a more simple style inevitably leaves.

RESEARCH QUESTION

The idea of art as a speech-less way of communication has been with me since I started my studies; drawing, painting, sculpting and then graphic design and visual communication were always challenging ways to express myself without having to talk.

When it comes to video games, even though spoken and written words are often there, the most interesting thing for me is the coexistence of multiple languages in a single medium; images, sounds, words: all come together, connected thanks to interactivity not only to tell a story, but more interestingly to generate some kind of "feeling" in the player.

That feeling, that mixture of emotions and thoughts, is what remains inside the player after the game ends and the console is turned off.

While that mixture is what gives the medium its variety, it also mean that every language brings its own preconceptions and discussions on how it should be used in order for a video game to be "right". Whatever it means.

As a graphic designer and art enthusiast, I decided to focus on the visual language of games as I think it's the one in which this stigmatization is more evident; over the years, the continuous struggle for better graphics brought more and more details into games turning them into a fundamental term of evaluation[4].

In the past decades hardware limitations used to force game designers to rely on less detailed visuals and the players to use their imagination to read them, while today it is rare to see video games (regardless of their graphic style, be it hyper realistic 3D or 8bit pixel art), try to experiment with minimal graphics to trigger feelings using players imagination.

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[4] Again, I'm not trying to portrait highly realistic graphics as a bad thing, but only explaining how they affected our perception of what is important for a game to be considered good.
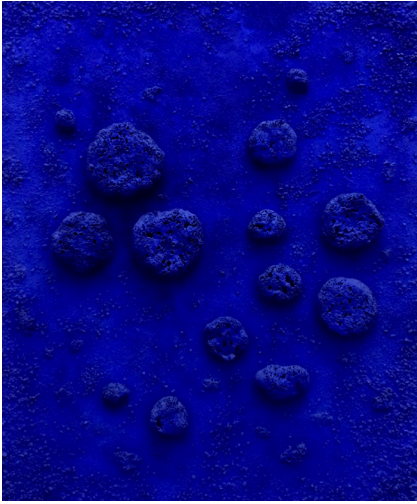
*Yves Klein, **L'accord bleu (RE10)**, 1960. Mixed painting, 199 x 163 x 13 cm, Stedelijk Museum, Amsterdam.*

It took Yves Klein years of studies to mix a color that could bring up emotions just with it's mere presence on a plain canvas[5], but it is somehow liberating to be able to enjoy that feeling without having to examine every brush stroke on the painting. With this work I intend to research if and how it is possible to apply that minimal approach to visuals in video games, to let the player imagine more than just what he sees on the screen.

To pursue that goal, I will analyze some video games that made a statement out of their minimal language: how and why their game designers came to that decision, what it meant once put to practice (read: how the game looks), how the minimal graphics relate to the other languages used by the game (gameplay, narrative, sound...) and finally how all of that concurs to trigger deeper feelings in players' imagination.

I will then try to define a method, or at least some guidelines on how to use, or at least on how to read, minimal graphics in video games; finally, I will present the video game I developed to research in this field myself, and compare it to the ones above, in order to define the theoretical background that brought me to its realization.

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[5] Wertemeier, Hannah. **Yves Klein: 1928 - 1962; international Klein blue**, p. 15 - 19. Taschen, 2001.

SEEKING FOR A DEFINITION OF MINIMALISM IN VIDEO GAMES

As I am going to analyze video games that chose graphic minimalism as their language, I will first need to find a definition for the word "minimalism" when talking about video games.

In visual art, Minimalism was a current that developed during the 60s which goal was to remove "the unnecessary" leaving only the true form of art: shapes and plain color; as we know from before though, those ideas have been around the art world since decades.

Minimal music as well is non-representational and non-narrative and is listened to by focusing on the internal processes of the music itself, which lack goals or motion toward those goals[6].

In video games, a minimalist approach can be used in any of the many languages of the medium, but, as stated before, in this paper I'm going to concentrate mostly on visual communication.

Still, there are many different ways in which a video game's visual language could be considered "minimal" such as abstract or stylized shapes for game objects[7], limited color palette[8] or lack of elements on the screen[9] but we need to make one main distinction before we start: back in the days, minimalism was not always a choice, while it was often due to hardware limitations; therefore, with this thesis work, I'm going to take in consideration only those games that deliberately chose to use a minimal approach to visual communication.

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[6] Johnson, Timothy A. **Minimalism: Aesthetic, Style, or Technique? Musical Quarterly 78, no. 4**, p. 742–73. Oxford University Press 1994.

[7] e.g. *Thomas was Alone (Mike Bithell, 2010), Super Hexagon (Terry Cavanagh, 2012)* and *Elektroplankton (indieszero, 2005)*.

[8] e.g. *Proteus (Ed Key, 2013), Absolute Drift (Funselektor, 2015)*.

[9] e.g. *Desert Golfing (Captain Games, 2014), Starseed Pilgrim (Droqen, 2013)*.

Also, while minimalist art was somehow in contrast with the outdated preconceptions of visual art, and most of the minimalist artists were pretty radical about their thoughts, I'm not trying to make any kind of game visuals chart; instead, I will try to grasp what possibilities are available when using such language, what's its uniqueness and how it was used to create something otherwise impossible with a more realistic approach.

Thomas was alone. Wow. A weird first thought to have.

MOVEMENT KEYS / LEFT THUMBSTICK - move | ESC / START BUTTON - pause menu

THOMAS WAS ALONE
Mike Bithell / 2010

Developer:

"Minimalism is a movement in art and design which has always appealed to me. It's not just about simplicity, it's about boiling down to the core of the experience. Applied to games, it's about cutting through the layers of technology and fashion to create an experience which does the bare minimum aesthetically, but does so to achieve a purer gameplay experience."

- Mike Bithell, interviewed by Debbie Timmins (2011),
Friday Feature: Mike Bithell, Indie Designer*.*

Mike Bithell is a British game designer, who became famous after the success of his game *Thomas was Alone* in 2010 and with its later official release in 2012, but was already previously active in the game industry first as part of Blitz Games (an English developer producing mainly franchise games) and then as lead game designer at Bossa Studios (*Surgeon Simulator*, *I am Bread*).
After the success of his first self released game, he left Bossa

Studios to dedicate to his own projects[10].

In the independent games scene he is known for being really direct about what he thinks and for being always open to give advice to industry newcomers, based on his experience as a developer[11].

Context:

Some notable games published in 2009:
Minecraft (Mojang), ***Mirror's Edge*** (Dice/EA), ***Assassin's Creed II*** (Ubisoft), ***Machinarium*** (Amanita Design), ***Borderlands*** (Gearbox/2K), ***Call of Duty: Modern Warfare II*** (Activision).
Some notable games published in 2010:
Limbo (Playdead), ***Super Meat Boy*** (Team Meat), ***Call of Duty: Black Ops*** (Activision), ***Amnesia: the Dark Descent*** (Frictional Games), ***Red Dead Redemption*** (Rockstar), ***Mass Effect 2*** (Bioware/EA).

*Notch / Mojang, **Minecraft**, 2009.*

During the years 2009 and 2010, many games that are still considered market changers (not only from a gameplay standpoint, but also regarding visual language) were published: the alpha version of *Minecraft* was made available in 2009 with its blocky look, *Limbo* made gorgeous use of black and white, while *Borderlands* somehow managed to bring cel shading out of the Japanese games market; on the other side, games like *Call of Duty: Black Ops*, *Mass Effect 2* and *Assassin's Creed II* set the new bar for graphic detail in video games.

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[10] Retrieved from Mike Bithell's page on Wikipedia.
[11] Bithell, Mike. ***Mike Bithell's golden rules for media***. Retrieved from URL, 2015. Note that this is just an example, more can be found on the internet as well as on Bithell's twitter profile.

Graphic Language

*"So I went back to my history in graphic design: if I'm going to do rectangles, I'm going to f*****g do rectangles. I did my research, and tried to do the best rectangle thing I could.*
Another friend helped me develop a color palette."

- *(2013),* **Mike Bithell talks Thomas was Alone at Dev night***.*

The graphic language of *Thomas was Alone*, as stated from the developer in the quote above, is made entirely of squares and rectangles, with the only 3D element being the pixel cloud chasing the team.

Few, simple rules can be found in the game color coding as well: the characters have each one a different fill, the platforms are black or white, while the background has some slightly moving patterns following a single color palette; each of those elements casts a shadow on the background according to a point light that changes position every level, giving an interesting effect to the characters' movements. Small white outlines indicate the final position each character should reach in order to advance to the next level.

It's important to notice that, while each level has a slight overall rotation, the game elements are always perpendicular to the ground and there are no rotated elements.

All is aimed towards creating an easily understandable game environment, in order to let the player understand (and learn by trial and error) the goal of each level and the jumping capabilities of every character, how to solve the puzzles, and where to head in order to advance to the next level.

Finally, there is no in-game user interface, except for the colored squares at the bottom right corner of the screen, to show the currently selected character, and the text appearing close to it whenever the narrator is talking.

Other Languages

"There are heroes, freaks, villains, sages, friends, enthusiasts and lovers in Thomas Was Alone. Every last one of the cast is represented by a quadrilateral shape, of various colors, shapes and sizes, but they have more character than your average bald space marine and many of them even have character development."

- Adam Smith (2012), **Wot I Think: Thomas Was Alone***.*

While the minimal visual language was chosen mostly for game-play communication purposes, a strong characterization for each rectangle is achieved by the combination of two other languages: spoken word narration and gameplay itself.

Spoken narration:
During the whole game an invisible narrator (dubbed by British comedian Danny Wallace) will follow the characters as they travel through the levels, giving voice to their thoughts and allowing the player to slowly get to know them as actual characters and not just as rectangles.

As every character is introduced in the game for the first time, the phrase that the narrator uses to tell the player always starts with the character's proper name: "Chris stared at Thomas with pure hatred", "John knew. He knew that this was his chance, a moment to shine. This, was game day.", "James liked being alone. No one to insult him, or question his unique disregard for Newtonian laws".

It's interesting how giving a proper name to each rectangle, something more human and less abstract, is already enough to change the player's perception about them, that becomes even stronger as the narrator gives each one his voice, unraveling not only feelings of the single characters, but also the relationship they create with each other.

Gameplay elements:
While the narrator is the main way of getting to know the rectangles and seeing them as more than just geometric shapes, that wouldn't be completely possible without the coherent mechanics of the game: every character has different abilities, from simple shape and jump height differences to more unique ones like double jump or floating in the water (where all the other characters die).
Such abilities are not only related to each character's personality (and the other way around) as depicted by the narrator, but also within themselves. For example, John, the slim and tall yellow rectangle, is also the one capable of the highest jumps, but his shape is high enough to prevent most of the other characters to jump over him, resulting in him being often in the way due to his size: for those who have a tall friend, that will be a somehow familiar feeling.

The power of naming

While playing Thomas was Alone, it's amazing to notice how fast we get to know the characters: each of them starts out as a simple rectangle but ends up creating a bond with the player as well as with the other team members.
For a theoretical explanation on how this happens, we could use Charles S. Pierce's semiotic elements theory: in the beginning the colored squares that we see in the games are *signs*, and more specifically *indexes*, as before the game starts they stand for us only for what they look like: a bunch of colored squares that we would normally interpret simply as what they are.

"A sign stands for something to the idea which it produces, or modifies. Or, it is a vehicle conveying into the mind something from without. That for which it stands is called its object; that which it conveys, its meaning; and the idea to which it gives rise, its interpretant."

- Charles S. Pierce, **C.P.1, Book 3: Phenomenology, Chapter 2, The Categories in Detail, n. 339**

The action of naming them (and every other further description of their emotion) operated by the narrator changes the way we read those signs (the *interpretant*) and the thing for which they stand for (the *object*), as for Pierce the object we get out of a sign is alway mediated by the interpretant.

This way, the squares move from being indexical sings to being *symbols*, as now there is no other correlation between them and what they stand for (there is no implicit motivation to read a red square as "Thomas" and a yellow one as "John"), other than a convention, in this case what the narrator told us.

If the spoken narration is the first step toward giving a new meaning to what we see, game mechanics come in for the second one: after the narrator gave us a key to "read" the scene, we come back and find *iconic* signs in the game behavior of each character. It makes now perfectly sense if Chris is so envious about Thomas: after all he is bigger, faster and jumps higher, making him, the small and slow orange square, feel often useless and left behind. This is of course also filtered through our background life experiences: depending on its own personality the player might develop a strong bound with some of the characters, understanding their thoughts, their fears, their way of thinking and their behavior towards the others; on the other side, for the same motivations, some characters will end up being really annoying.

After experiencing the growth of those bonds it doesn't sound strange anymore reading Mike Bithell describe its game as "a game about friendship"[12], as we now know that there's far more than simple rectangles jumping around, and we're not able to

[12] Bithell, Mike. ***Thomas Was Alone: Out Today on PS3, PS Vita With DLC***. Retrieved from URL, 2013.

"unsee" it anymore.

In my personal experience, the most interesting part of playing the game was realizing that in my head I was referring to the characters using their proper names, instead than their color; after I got familiar with them, after I got to know them, they were not "the red rectangle" or "the yellow rectangle" anymore, they were simply Thomas and John.

PROTEUS
Ed Key, David Kanaga / 2013

Developer

"As I walk, Ed wanders, both in feet and mind. He will point out animals, name and pick plants, test things by eating them. He picks out a lot of edible plants, handing them to me to taste.
I'm hesitant, which he says is a good thing. Sometimes he's just handing people an interesting but inedible plant to look at, but then they eat them. Un-ideal."

- Hannah Nicklin (2015), **A Psychogeography Of Games #5: Ed Key***.*

Ed Key is a developer from Cumbria, a mostly rural County in the North-West part of England. He started making games on his own after being part of the video games industry in the early 2000s, to be able to develop his own ideas far from studios schedules and restrictions[13].
Calm and thoughtful, he has a strong bound with the nature of

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[13] Retrieved from Proteus page on Wikipedia.

his land, over which he has deep knowledge of wildlife and geography, often wandering around in observation[14].

His ideas on video games are summarized in his first game Proteus and in all the talks and interviews he gave after the game was published, and raised a huge discussion on the nature of video games itself.

For Key, there's still a huge bias around the word "game", so that most of the people think (consciously or not) that some features, like tasks or puzzles or narrative, are fundamental in order for a game to be "a game".

Key is convinced that being given things to do, a final goal to reach or even just a completion percentage that lets you know "how much you've seen" can get in the way and distract the player from concentrating on the game experience itself, caring more about those targets than the environment and things surrounding us as well as the pure feeling of getting lost in a stranger world[15].

"Sound adds life to the environment. There is a presence you get from hearing sound. It's real.
An image is on the screen, but the screen is more real than the image.
When you have sound coming out, it's vibrating through the air—vibrating the room you're in.
It's tangible."

- David Kanaga, interviewed by Jason Johnson (2012), **The object is present**.

David Kanaga is an American composer from Oakland, California. He joined Ed Key to develop Proteus in 2010 (Key has been working on it since 2008), taking care of the audio part, and to narrow down the concept for the game, as Key himself stated many times.

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[14] Nicklin, Hannah. *A Psychogeography Of Games #5: Ed Key*. Retrieved from URL, 2105.
[15] Johnson, Jason. *Ed Key of Proteus searches for the meaning of games and chases Brian Eno*. Retrieved from URL, 2013.

He is strongly convinced of the importance of sound, and especially generative sound in video games as well as in real life citing works from John Cage and John Zork when talking about his work for *Proteus* and *Dyad*[16].

Context

Some notable games published in 2012:
Dear Esther (The Chinese Room), *Fez* (Phil Fish/Polytron), *Super Hexagon* (Terry Cavanagh), *Hotline Miami* (Dennaton/Devolver), *Dishonored* (Bethesda), *Call of Duty: Black Ops II* (Activision), *Assassin's Creed III* (Ubisoft), *Candy Crush Saga* (King), *Journey* (Thatgamecompany).
Some notable games published in 2013:
Kentucky Route Zero (Cardboard Computer), *Antichamber* (Alexander Bruce), *Ridicolous Fishing* (Vlambeer), *Device 6* (Simogo), *Bioshock Infinite* (Irrational/2K), *Towerfall* (Matt Thorson), *Grand Theft Auto V* (Rockstar), *Gone Home* (Fullbright Company).

"The beginning of Proteus was weird, because it started out in lots of different places [...] there are some people working on a port right now, and they're finding all sorts of weird code like 'Battle Tester State' and other ridiculous stuff I'd forgotten about.
Economies and things like that. It was going to be more of a procedural RPG with combat."

- Ed Key interviewed by Nathan Greyson (2013),
***Staying Humble: Proteus' Origins And Ed Key's Next Game***.

The most notable thing about the time span *Proteus* came out in is undoubtedly the generation switch that brought even more realism and detail on our TV screens, thanks to consoles like PS4 and Xbox One, as well as enormous and incredibly detailed open-world environments previously pioneered by games like *Skyrim*. Focusing on gameplay, games like *Fez*, *Antichamber* or Device

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[16] Johnson, Jason. *The Object Is Present*. Retrieved from URL, 2012.

6 were among the most innovative games of the decade bringing in brand new game mechanics; on the other side, it also saw many innovative games come out with minimal mechanics and a strong emotional value like *Journey* or *Gone Home*.

Those games, besides being incredibly successful, had the merit of bringing this kind of games to a broader audience, not without generating debates over their actual nature as games and the spread of pejoratives like "walking simulator"[17].

Graphic Language
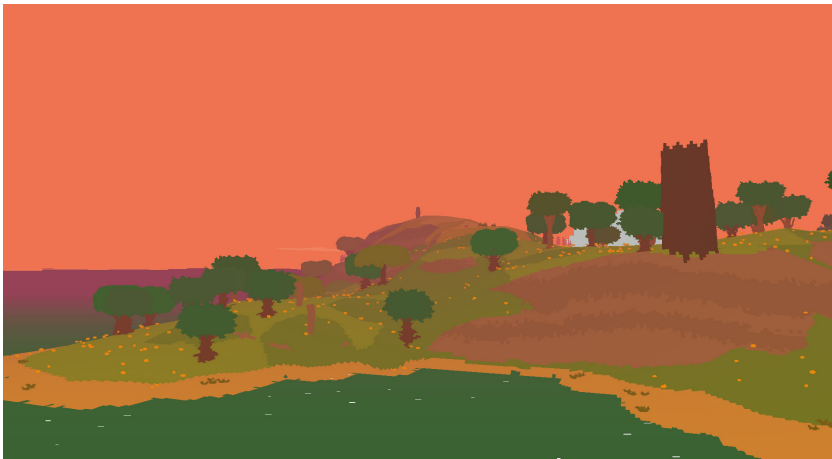
As the game consists in a procedurally generated island, in which the player can walk around and explore the nature and the living beings of that place, the graphic language of Proteus is first of all very colorful. Every tree, flower, artifact or tiny living being has it's own color, changing as time passes by and as seasons come and go; the overall palette changes immensely from dawn until dusk and from spring to winter, but it never loses it's coherence, with a color variety that is many times surprising.

While the palette is extremely various, the 3d models in Proteus are extremely simple and actually look like flat pixelated sprites; from the flowers to the sun, every object has a simple plain color

[17] O'Connor, Alice. *Self-Interviewing Devs: Proteus And "Walking Simulators"*. Retrieved from URL, 2104.

fill with no internal details at all. The overall effect is that most of the things on the island really look alive while giving very few details on their nature, with the color being the only main difference within similar things, giving more relevance to the overall landscape created by the environment pattern.

Since *Proteus* is mainly about walking in nature in a zen-like mindset, free from typical games tasks and goals, there's no user interface in the game as there is no need for it; the only thing that might be considered as "part of the UI" is the black layer that unfolds every time at game start, simulating opening eyelids as the player approaches the freshly generated island.

Other Languages

Proteus is mainly an audio driven experience game; the sounds are produced, generated and tweaked by every object in the scene, creating an always changing and dynamic soundscape that blends incredibly with the environment the player finds himself within.

Sounds are what pushes the player to explore the island as they catch its attention and make him move from one point to another, telling him that something is happening somewhere nearby, or that something was triggered by his movement pattern.

Over the time, the player learns to recognize sounds sources and to distinguish between what it's "normal" (sounds that are most likely always there, like three leaves or crickets) and what is "exceptional" (polar light, dust whirlwinds etc.), adding a quite subconscious learning curve to the exploration.

Meaning more than looking

To explain how *Proteus* manages to reach a deeper level of meaning, we can't, this time, rely on Pierce's theory of signs as the game doesn't provide us any element to influence our interpretation of what we see.

We can, though, try to explain how the game's undetailed graphics adapts to our memories causing a pleasuring feeling of famil-

iarity with the environment by having a look at how memory and perception work.

> *"It turns out that our brains use the same intelligent guessing process to reconstruct the past, in addition to using it help perceive the world. Memory itself is not like a video-recording, with a moment-by-moment sensory image. In fact, it's more like a puzzle: we piece together our memories, based on both what we actually remember and what seems most likely given our knowledge of the world."*
>
> *- Timothy Brady (2008), **Blurring the Boundary Between Perception and Memory**.*

Our brains abhors ambiguity, it's always looking for an explanation to what we see, breaking down and reorganizing the elements of a picture to better understand it, based on those parts that are more familiar. Since memory isn't an hard drive, and it has been proven that it's relatively easy to trick our brains into remembering about things that we actually didn't see[18], it's easy to understand how a more abstract graphic style allows us to overlap more easily our background experiences on what we're presented on the screen.

Ambiguous images are used since decades in Psychology as they lead people to bring up their forgotten memories and feelings; Proteus does the same by combining together generic elements, colors and landscapes, which acquire meaning according to our memories; Proteus is a game about exploration, and about our relationship with nature and it wouldn't generate that nostalgic feeling with a more detailed style as the environment will immediately look different from what our brain could possibly recall and therefore will generate a totally different set of emotions.

As the developer pointed out, Proteus is about his love for nature

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[18] Intraub, Helene and Dickinson, Christopher A. *False Memory 1/20th of a Second Later: What the Early Onset of Boundary Extension Reveals About Perception*. Psychological Science, October 2008, p. 1007-1014.

and how he experienced it and experiences it[19]; at the same time it becomes extremely personal as soon as we land on the island's shore, thinking if somehow we already were there once. What comes out is a mixture within a Rorschach test and an Expressionist painting, where developers' emotions are communicated through the colors and the sounds they chose, but they can only adapt and touch the player thanks to the abstraction with which they are painted on screen.

Giving Proteus many playthroughs, therefore experiencing different layouts every time, I always felt like I somehow knew the place, be it for the colors or for the disposition of the trees, or for the landscape profile, but at the same time I felt the need to explore it more as the mixture within known and unknown grew bigger and weirder.
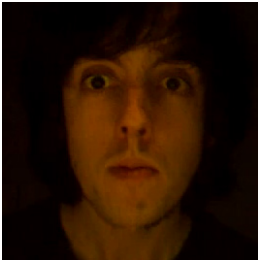
[19] Nicklin, Hannah. *A Psychogeography Of Games #5: Ed Key*. Retrieved from URL, 2015.
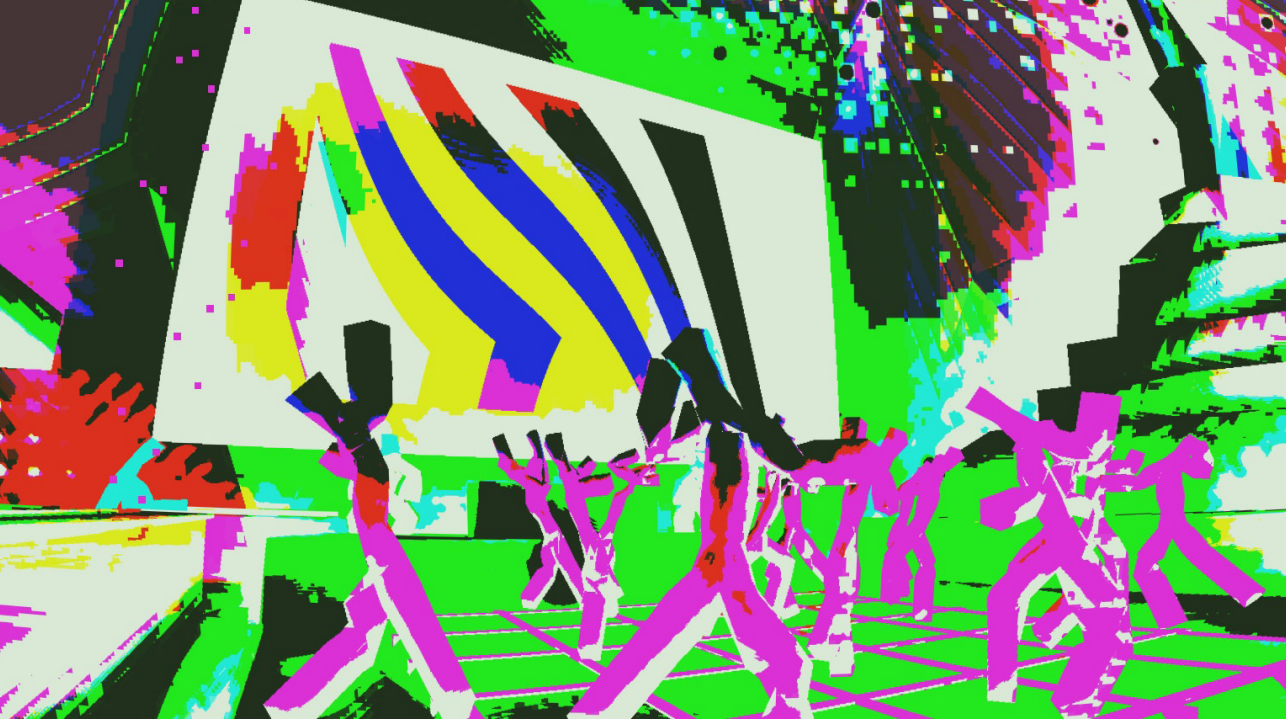
SLAVE OF GOD
Stephen Lavelle / 2012

Developer

*"It's more like performance, I guess.
You're putting yourself out there. You're not making
something for others to play with. It's a sort of thing I
can imagine somebody approaching in a therapeutic
matter, where it helps them get it off their chest.
But, it usually makes me feel a little worse.
It takes something out of you."*

- Stephen Lavelle, interviewed by Filipe Salgado (2012), **Profile: Stephen Lavelle***.*

Stephen Lavelle is a Uk based developer who has been making games since 2004 under the nickname Increpare, and has been also working as a developer for Realtime Worlds.

His website counts hundreds free games, though he also released some commercial titles like *English Country Tune* (2011) and *Stephen's Sausage Roll* (2016). Most of his games are short experiences with a deeply personal imprint and a huge variety of topics from nightlife (*Slave of God*, *Perfect Club*) to cooking (*Cooking,*

for lovers) to more abstract exploring (*Activate three artifacts then leave*) and the list could just go on forever[20]. He is part of the Cambridge Friendship Club and has collaborated with other independent game developers such as Terry Cavanagh (*Super Hexagon*, *VVVVVV*) and Dock (*Tumbledrop*)[21].

Context

As most of his games follow the same minimalistic principles, it's probably not correct to look just at the precise moment in which *Slave of God* came out[22], but rather to concentrate on the fact that since Stephen Lavelle started making games in 2004, the whole industry saw enormous changes.
One of the most important was the democratization of tools with the first version of Unity coming out in 2005, but also the take-over of digital distribution for games (Valve Software's Steam platform launched in 2003) and the new generation consoles that launched during the last 12 years.

Graphic Language

The best word to describe *Slave of God*'s graphic language would probably be "trippy". As it aims to be a game about spending a night dancing in a club, the game is characterized by fast changing lights emphasized by shaders that generated a glitched effect that blends into the sound that is played on the dancefloor.
The models representing the people resemble stickmen (somehow similar to the ones populating Keith Haring's paintings) and are animated with really simple change of pose, simulating the

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[20] Ellison, Cara. ***Increpare: the genius developer who gives his games away for free***. Retrieved from URL, 2015.
[21] Biographical data gathered from different sources: Increpare's page on Wikipedia, Lavelle's page on The Independent Games Wiki and the Cambridge Friendship Club Website.
[22] Some informations can also be found at page 15, in the "context" paragraph of *Proteus* analysis.

visual effect of a stroboscopic lamp.

The colors are extremely saturated and change often according to the music and to the position of the player in the club as well as his distance from some key characters, though there is no text or spoken word to tell the player in which way this happens.

Other Languages

Though the main way the game uses to communicate with the player is visual feedback, tweaking and distorting graphics, changing colors and animations, an important role is played by the soundscape as well: every character in the scene makes a different sound when getting closer to him and eventually manages to tell you if something is happening.

Many things will change in the club as the game goes on and the only way we have to find out if we're getting close to the "next step" is by listening and digging more into the crazy patterns distorting what we see.

A summary of feelings

"By the time I had finished Slave of God, I felt drunk, high and in love. No alcohol had passed my lips, no drug had been near me, and no man had made bodily contact with me [...] No, Stephen Lavelle made me drunk, high and in love merely by the power of his interactive environment. Isn't that neat?

On my planet that makes him Superman."

- Cara Ellison (2013), **Wot I think: Slave of God**.

While *Slave of God* was never a main topic of discussion, it was praised for its capacity of triggering players emotions and capturing the overall feeling of a dancing night in a club.

This isn't reached by any particularly good music (in fact the soundtrack is a pretty anonymous dance background) or any representative 3D model; the most important things are the color patterns and the simplicity of the game environment, that holds barely enough volumes to make everyone who's been at least

once in a club feel familiar with the space.

Unlike the previous two games, the level of communication of *Slave of God* doesn't rely on semiotics or on memory bias; the games wants to convey feelings, regardless of the actual clubbing experience of the player.

In fact, it is completely different as it looks like the game concept was deducted from the sensations it aimed to produce in the player (which happen to be the ones of spending a night in a club); this allowed the developer not to care about what was actually being displayed, rather than how it was displayed.

The visual communication of the experience is mainly made by the glitchy and flashy shaders, more than from the volumes, the architecture or even the dancing models.

And that's what unique about *Slave of God*: it is a game about feelings, and not about content, and feelings are universal.

One doesn't need to know what he's looking at, to recognize it (and therefore hold a mnemonic background of it), to feel what this game wants him to feel.

Therefore, we could say that *Slave of God* uses those sensorial stimuli as what Pierce would call indexical signs[23] to convey the clubbing experience regardless of the interpreter background, reaching a universally understandable level of unspoken communication, but this is only valid if we already know what those signs stand for; if we were never in a club we wouldn't know what those signs stand for, but the meaning of the game, and that's the most interesting part of it, will not change.

As the communication operated from the game is based on sensations, every movement we take inside the club will influence the sensory feedback we get, according to the zone we're moving to: for example the bathroom is extremely silent and has way less flashy colors compared to the dancefloor, while on the dancefloor it's easy to get trapped by staring at other people, without being able to do anything more than just spinning

[23] 'Index'. Quote in M. Bergman & S. Paavola (Eds.), **The Commens Dictionary: Peirce's Terms in His Own Words. New Edition**. Retrieved from URL, 2013.
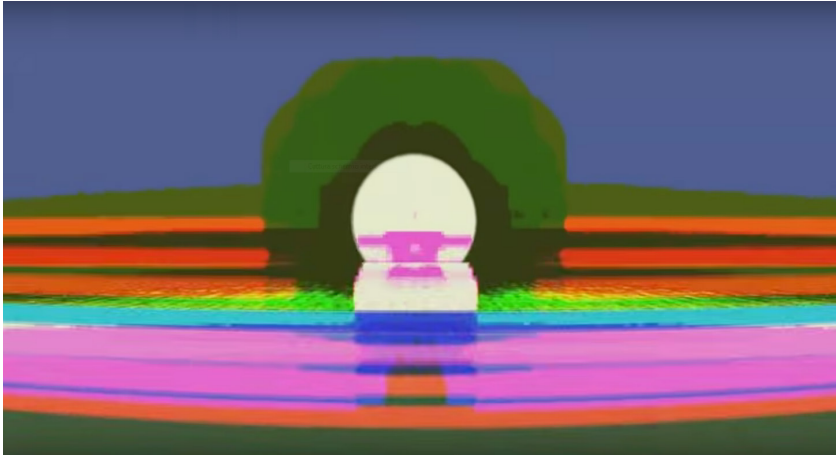
around as the control scheme is temporarily changed.

Playing *Slave of God* can become painful under certain aspects, as it's very heavy on stimulating ears and eyes, but that's also one of the motivations it captures the experience so well, rarely I felt so relieved in a game, than when i walked out of the club to an amazingly calm sun rising above the sea.

CONCLUSIONS

After analyzing this three games, we can say that there are at least two ways that games with minimal graphics to trigger the player imagination, and create a (conscious or unconscious) "layer of meaning"[24].

The first one relies on giving a meaning, or an explanation, to what happens on the screen; we could call this "active" as the player has to operate a decoding process of the game's visual language in order to understand the meaning behind them, or the feelings that the game wants to convey.

This means that at some point the player will learn (or realize to have learned, in case this happens after playing the game) the language of the game.

The second one relies on evoking feelings without necessarily having the player to understand what's going on or why those feelings are arising. We could call this "passive", as the player doesn't need to decode the language (though it doesn't mean that it isn't possible or that there isn't one) to experience what the game wants him to.

Active-explicit, active-implicit games

To describe how active games work, using Pierce's theory of triadic signs, we would say that their communication relies on making sure that the player is given, or already has, all the knowledge required to interpret the signs provided by the game in the way that the game designer wants him to.

This brings us to a further distinction: an "active" game could be providing us the tool to decode what we see (a good term for this could be "explicit"), or rely on the fact that we already have them (those games could then be classified as "implicit").

Following this classification then, we could say that the approach to minimal graphics in *Thomas was Alone* is of the active-explicit

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[24] By "layer of meaning" I mean, the possibility for the player to read something more than just what's on screen.

type, as the game explains what do the squares stand for and what is actually happening between them thanks to the Narrator's voice, as there would be no other way for the player to possibly know "what to see".

On the other side, *Proteus*' approach is then active-implicit, as it relies completely on players' previous experiences with nature, assuming that everyone has at least some, and that those will be enough to be able to decode what is on the screen.

*The start screen of **Cunt Touch This**, Copenhagen Game Collective, 2014.*

Another example of an active-implicit game might be *Cunt touch this* (Copenhagen Game Collective, 2014), as the experience will vary for each player according to it's relation towards female sexuality, causing a different range of feelings as the game doesn't provide any explanation of what's happening or what someone should be doing[25].
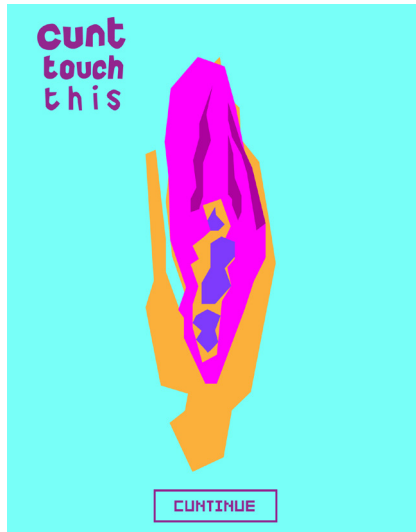
Passive games

Passive games' field of action is, on the other side, mostly sensory and more abstract: a game like *Slave of God* aims to recreate the clubbing experience through the physical effects that it has on our bodies, relying on actually causing those effects in the player rather than just showing them on screen.

Whether the player has some background experiences of the

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[25] Kirman, Ben; Harrer, Sabine; Hasselager, Andrea; Linehan, Conor; Toft, Ida; Schumacher, Raimund. ***Cunt touch this: a conversation on intimate design and embarrassment***. Annual SIGCHI Conference: Human Factors in Computing Systems, CHI 2015.

topic or not is, in this case, mostly irrelevant as the signs used by the game's language are the sensory stimuli, independently from what they look (or sound, or feel) like.

"A friend of ours played it for an hour," said Samyn [Michaël, part of Tale of Tales]. "Then a week later he calls me and says, 'I get it, it's about sex'."

- Keith Stuart (2013), **Luxuria Superbia – a game about sex and giving** .
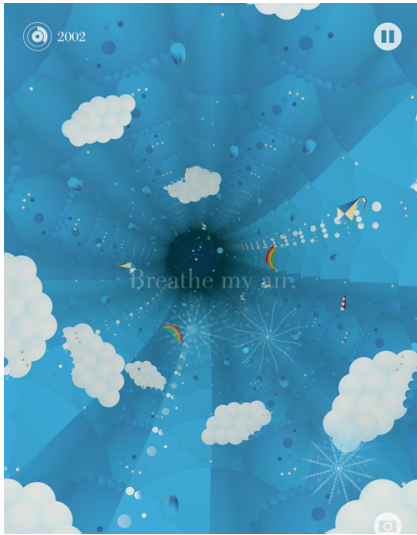
Tale of Tales, Luxuria Superbia, 2013.

Another good example of a game using an a passive approach might be *Luxuria Superbia* (Tale of Tales, 2013), where the player is neither required or needed to know what exactly he is doing or looking at, but rather to experience a joyful way of giving pleasure.

To whom or to what, it is actually unimportant and it's up to the player to give a meaning to what is happening on the screen, according to what will his personal experience background allow him to[26].

In the end

As we have seen, choosing a minimal visual language when developing a game doesn't necessarily imply a that the experience has to be minimal as well, but that was not a news (or at least it shouldn't be) as contemporary art has proven that a cut on a canvas can be way more expressive than a thousand of

[26] Stuart, Keith. **Luxuria Superbia – a game about sex and giving**. Retrieved from URL, 2013.

meaningless descriptive paintings.

We focused then on understanding how that happens, at least in videogames, by analyzing three games that, as we found out, rely on different aspects of visual communication to convey their experience to the player.

We could say that, when choosing a minimal visual language for our game, the most important thing to focus on is how we want the players to "read" it.

By choosing an active approach we'll have to keep in mind that signs will be interpreted differently from player to player as long as we don't provide a way for "correct interpretation", in case we want our game to have one; with a passive approach instead, a deep investigation on the sensory effects that make the experience we want to convey would most likely be the best starting point.

PERSONAL PROJECT: WHISPER

As it comes out from the games I analyzed before, there are several ways in which a minimal visual language can be as effective as a detailed one to convey feelings to the player and have a deeper meaning.
Even though it came before i started with this analysis, developing my personal project for this thesis work I decided to go for the most minimal visual language I could create: no shapes, no colors, just wireframe white cubes.
I will then try to have look to what I could achieve and how, by applying the same structure used for the other three examples, and the knowledge gathered through it.

Graphic Language

Trying to achieve a minimal visual language for my thesis game project, I decided to remove every visual representation element that could possibly influence players imagination using only white cuboids with a black wireframe edge.
The only colors I used for the game are red and blue, to highlight

the object selected by the player for audio swap, and to actually communicate that a swap is happening or has just happened; also, but just for the sake of avoiding frustration over invisible walls, I added a slightly transparent red layer that activates when a player hits one of them.

The realistic models used in the game (top) for priming the player perception of the simple game graphics (bottom).

As I didn't want to use words to explain how to read the game's visual language (which doesn't mean not to use words to create some kind of background story), I decided to use a (supposedly) really detailed 3d environment for the first few minutes of the game. As proved by priming experiments, it was proven that providing specific stimuli before the interpretation of an ambiguous input (in this case the over simplified graphic language) will influence the way the subjects will interpret it[27].

Other Languages

The goal I had when I started working on the game was to create an experience that required a good amount of imagination from the player in order to be completed.

On the other side, I didn't want to directly tell the player what was happening so I decided to implement a really accurate soundscape in order to allow the recognition of items based on the sound they make.

In the game, sound feedback can act in three different way: it can

[27] Goolkasian, Paula and Woodberry, Courtney. *Priming effects with ambiguous figures*. Retrieved from URL, 2010.

be passive, meaning that the game object will make sound on his own even when it's not interacted with[28], it can be semi-active, meaning that the game object will make a sound when the player interacts with it in an unconscious way[29] and finally it can be active, when the player uses the "knock" function on the object to hear what sound comes out of it.

As the whole point of the game is realizing that we still feel comfortable and aware of what is going on around us, even if we actually don't really see it, to the point that we are able to use this ability to build game mechanics with it, an important role for the communication with the player is played by the behavior that every game object has and that it's defined by the sound it makes: a barking dog (or better, a barking cuboid) will of course act as a dog and immediately run after a ball (or better, a cube that makes bouncy sounds when thrown around), but, if we switch the sound they make, it will then be the small cube barking and running after the now bouncy cuboid as we throw it around.

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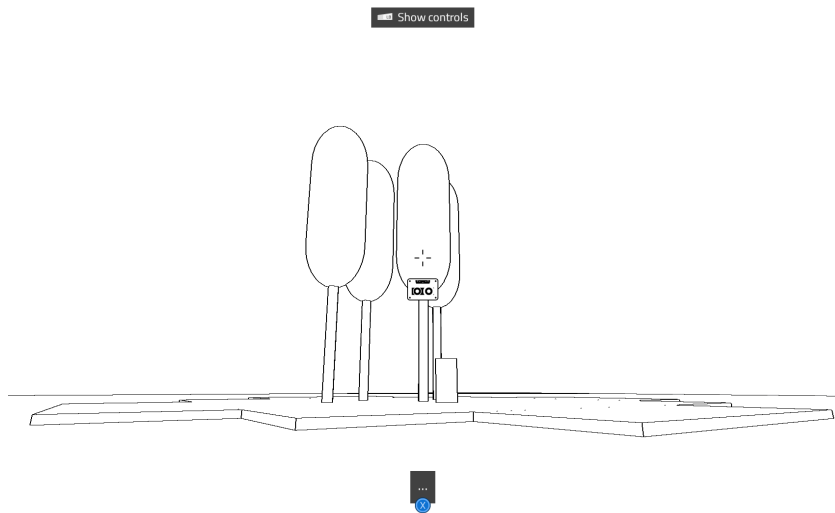
[28] For example, the sound of a river stream or a fountain, or the growl of a car engine.
[29] For example by walking on it. Depending on its kind, every game object will output a different footstep sound.

A sensory experiment

The way I approached the use of visual communication in this game was, as we can say after the previous analysis, mainly active-implicit, as I relied on the fact that players would be able to associate what kind of object would make the sound that they hear.

On the other side, as my goal was to create a short experience, having a broader target audience not necessarily used to the videogames language, I didn't feel safe enough to leave the interpretation completely up to each player's background so I decided to add a small cutscene showing "what lies beneath" the minimal visual output (in this case, actual objects that can be found in the real world).

This proved to work out pretty well as, even after the first puzzle, which is the only one which objects are first shown in their real shape, players managed to find their way out in the game world and eventually solve the puzzles.

In the end I got a lot of positive feedback, mostly about the unique kind of "disconnected sensory experience", that was somehow the goal I wanted to reach.

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This thesis has not been submitted for any degree or other purposes.
I certify that the intellectual content of this thesis is the product
of my own work and that all the assistance received
in preparing this thesis and sources have been acknowledged.

Corrado Mariani, Köln, 2016.