

A Discussion of Intuitive Visual Level Design Techniques

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Declaration

By signing here, I declare that this **dissertation** is my own original work and has been submitted to the University of Wales Trinity Saint David to be marked. All contributions of other people involved with my paper, I made sure that every effort was made to indicate this clearly using The Harvard Referencing system. This includes reference to literature, quotes, acknowledgement of collaborative research, discussions and anything else from other people used in this dissertation.

Signature.....

A handwritten signature in black ink, consisting of a large 'C' followed by a series of loops and a long horizontal stroke.

(C. Hale)

Date.....

10/12/2019

Abstract

The role of a level designer is to create the playable space for a player to use while they game. To make it aesthetically pleasing but to also make it as functional as possible, to keep the game fun in the process. A subcategory of level design that is covered is “intuitive visual level design”.

Intuitive visual level design is the practice of guiding a player through your level, using techniques to subliminally tell a player where to go. Which will be the main focus for this discussion and explain how other video games use techniques borrowed from other similar creative subjects.

This dissertation then talks about using other creative fields and their theories, so that they can be applied to intuitive visual level design. The reason behind this is to potentially show another method of how we can use intuitive level design in our games by showing different examples of fundamentals of creative mediums and applying them to games.

This dissertation concludes the main body of text by breaking down the first level section in God of War (2018). Using the discussed methods and practices from the previous chapter and then showing how some of them were used in God of War, whether it was intentional or not by the designers. Showing them in practice and how they can be applied in multiple ways should help other level designers and those reading this dissertation.

The aim for this discussion will be to show how other fields of practice can influence your own creative field, not just level design. How everyone in different creative fields of study have similar problems and that changing your workflow to incorporate learning other artistic subjects can help solve those issues.

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Introduction

This dissertation will cover different techniques for intuitive visual level design using theory derived from fundamental rules from other creative fields. Level Design refers to the creation of a game environment, mission or stage and is typically taken by the role of a game designer from the start of the project.

A level can consist of an entire world or single environment and there may be multiple in a game though many games provide the user with a space in which to interact with gameplay mechanics as part of the game experience.

Intuitive visual level design is one form of level design, where the environment itself is designed in such a way that it easily allows new players to understand fundamental aspects of the game's design such as mechanics, navigation and orientation

This discussion will focus on intuitive visual level design techniques applied from other forms of creative mediums. Using other artistic fields such as Architecture, Art, Photography and Film we can influence and enhance the design of a game environment in positive ways that allow people to make sense of their surroundings without signage, explicit directions or other invasive forms of instructions.

The reason for narrowing down the subject of "Level Design" is mostly due to the subject being so wide and varied since it will be difficult to assign certain techniques for good level design to every scenario, genre or category of game development. This dissertation aims to give some insight into other creative fields, how they share similar problems that level designers also face and how these techniques can be used to solve these problems.

Chapter 1: What Is Level Design?

In this first chapter, it will describe what Level Design is and how this role is important to the game design pipeline. It will also be covering what intuitive visual level design is and its own importance for making a games level flow better.

“Once the core gameplay for a game is established, it is the level designer’s job to create the game-world in which that gameplay takes place, to build spaces that are fun for players to play in.”- (Rouse 2001, pg. 449)

A quote by Richard Rouse, the author of “*Game Design Theory and Practice*” (2001). A book based off of game theory for designers. A level designer is a unique role in the game development process. After a game has worked out its main mechanics it is then the level designers’ job to fulfil those mechanics and present them to the player. But most importantly is to make the game fun for the player, since the overall objective of a game should be to make it a fun experience.

“...levels and level design is how the players experience and interact with the game world” - (Level Design Workshop: A Narrative Approach to Level Design, 2019)

Jolie Mezel, A Ubisoft Level designer, uses this simple definition of what level design really entails in her GDC talk. What does the player experience, and how they use the game world are the two questions a level designer should ask before starting the level design process. Whether it be through story, narrative or mechanics the game should flow in a way that the game doesn't bring the player out of the game and break immersion.

Overall a level design is the amalgamation of everyone's work on the game. The games core mechanics, the story, the final assets, the theme, the music and sound. While it should combine all of these together it also needs to be playable, fun and nice to look at. Which is why the level designer's role is so important in the process of the game. The players experience should be a top priority for every department of the games creation.

However, the kind of level the game needs will depend on the game itself. The type of game, First Person Shooter, Puzzle Platformer, Role Playing, Simulation, Real Time Strategy, all vary. The types and manner of games will need different levels for the intended purpose and require different workflows and methods to complete them.

In Rouse's book (2001, pg. 455), the level is broken down into different components, a short list of explanations is given here:

- Action:

Essentially testing the player with physical challenge. This can be through the players reaction skills or their hand eye coordination.

- Exploration:

What the player is doing when they are not being challenged by the game. This can be an open space for the player to move around in or a space for the player to travel through connecting the games challenges together.

- Puzzle Solving:

This can be defined through what the game offers the player to unlock a new area. Which is done through testing the players ingenuity or knowledge.

- Storytelling

This refers to the levels setting in the game world. Since the story is told through what the player experiences in the game, making sure the game fits the setting is very important.

- Aesthetics

The level needs to look good and sound good. Which is where most of the level designers work will be used. This is normally due to the fact that a games look is the first thing a player will pick up on in your game.

- Balance

This refers to the games ability to use all of the above components in its level design to suit the specific game, whether that is through the game's genre, target audience or visual style. Since these factors can vary among every type of game. But these components form the base of nearly every game and can be applied to them.

Fun

However even with a basic understanding of the level designers building blocks, it is very difficult to master them and use them to fit together to make a great game. Jaime Griesemer, the game design lead for the first *Halo: Combat Evolved*, famously quotes:

"In Halo 1, there was maybe 30 seconds of fun that happened over and over and over and over again..." - (Behind the Scenes Making of Halo 2, 2012)

You can have all the best assets, refined code and great sound but it is all for nothing unless it is a fun experience for the player to play your game. As Griesemer, elaborates on his quote:

"You can have all the great graphics, and all the different characters, and lots of different weapons with amazing effects, but if you don't nail that 30 seconds, you're not gonna have a great game." - (Behind the Scenes Making of Halo 2, 2012)

So, it is incredibly important that the Level Designer should always be working with the lead game designer on how to implement the fun of games into the playable space for the player.

What is Subliminal/ Intuitive Level Design

Subliminal and Intuitive Level Design” is a subsection of level design, used in games where the player can orient themselves and traverse through the level without the need of a navigational tool, like a compass, waypoints or big arrow. For example, in *Burnout 3: Takedown* (Electronic Arts, 2004), the game has large arrows to tell the player exactly where to go (See Figure 1).



Figure 1: A screen grab of Burnout 3: Takedown (Electronic Arts, 2004) arrow system.

These tools, while useful and necessary in some cases, can break an immersive experience and bring the player out of a game.

Good examples of subliminal level design in games can be found in companies like That Games Company, Valve and Naughty Dog. With games like *The Last of Us*, *Half Life* and *Journey*. These games use many different techniques to direct the player in a certain direction without directly telling them, which should give the player a more immersive experience.

“It is very much a game in psychology...You need to figure out what your environment is telling the player and figure out how you can give the player as much information as possible.” - (Schatz 2014)

This was a statement from Naughty Dog games designer, Emilia Schatz who worked on the game *The Last of Us*. A game where the player does not even have a map, but still manages to get the player where they need to go without the use of a navigational tool. They manage to achieve this kind of gameplay by using techniques like visual composition and contrasts borrowed from other creative mediums and applying it to the level's environment design.

Chapter 2: How Games Use Subliminal and Intuitive Level Design

In this next chapter, this document will be covering other mediums and how their fundamentals and techniques can be applied to subliminal visual level design. It will be using examples of other games that use these techniques and try to explain how they are used to better a game level.

Applications Of other Disciplines

When it comes to intuitive visual level design, what some people do not realise are the similar problems that other creative disciplines share with level design. Since most creative fields have intercrossing issues, you can use fundamentals and teachings from other subjects as solutions to problems you face.

Which is why in this part of the dissertation, it will cover using other creative mediums fundamentals and applying them to subliminal level design. Using high profile games that use similar techniques to make their games more intuitive and visually appealing.

“Defining a clear path is really important and is something we look at all the time...When you’re in a busy schedule it's really easy to create noisy and confusing environments” - (Pangilinan, 2010)

Erick Pangilinan, Naughty Dog Art Director, statement in a 2010 GDC talk on *Uncharted 2* (Pangilinan, 2010). He talks about how easy it is for a level designer to just create a confusing environment with no theory applied to the level. Which is why having the knowledge on crafting a level design is important. Applying the knowledge to your level will make for a more enjoyable and easier experience for the player.

Architecture

Architecture refers to designing buildings for an intended purpose. Much in the same way an architect will design a building and make it look aesthetically pleasing, it also needs to be functional. This philosophy can also be applied to video games and level design. Being able to make an intended space with a function, but also make it nice to look at. We can look at some of the principles of architecture and use techniques from for intuitive level design.

Affordance Architecture

One technique used in architecture is the use of affordance. It is a feature or some certain way an object prompts whoever is using it to use it in the way it was intended for. This technique is used by architects and product designers so that a person will always know instinctively how to use an object without the need to tell them too.

In Maier's article, *"An Affordance based Approach to Architectural Theory Design and Practice"* (Maier, Fadel and Battisto, 2009), he uses a door handle as an example. At the Cooper Library, their PUSH doors had handles, which became confusing to people walking into the building as they were pulling the handle. They were then replaced by metal plates; this gave the user only one way to interact with the door and it improved the accessibility for the users. This is only one example of affordance in architecture and how they need to be considered.

This same theory of affordance can also be applied to video games. How in *Tomb Raider* (2013), the developers at Crystal Dynamics tells the player that they can use ziplines with the consistent use of ramps (See Figure 2). The player will automatically see these carts, the position and its angle so they will automatically assume it can be jumped off of.



Figure 2: Screen grab from Tomb Raider (Crystal Dynamics, 2013), showing the wooden ramp.

With use of affordance in games you can tell a player exactly where to go or what can be used in your game. To subliminally tell a player how your game works with obvious asset placements and props is ideal to make your game more intuitive.

Weenies Architecture

The term “Weenie” is a coined term by Disney. Martin Sklar, one of the heads of construction in Disney World, describes it as a “visual magnet” as it will draw people towards it (Sklar, Bradbury and Sherman, 2013).

This technique used by Walt Disney to lure the crowd of guests to the centre of his parks by using Cinderella’s castle (See Figure 3). It is also a navigational aid as a way for the guests to always find their way back to the centre of the park without the need for a map. Not only does it give Disney a way to predictably track where the guests are likely to go, but also serves as a visually aesthetic scene.

This is a shared technique used in other fields like Tv and Film, but also in games. Its purpose however stays the same in all fields, as a lure, to show a viewer an important or a visually aesthetic structure.



Figure 3: Cinderella's castle (Disneyworld.disney.go.com, n.d.)

It is also used quite effectively in video games. Having a large object or structure to centre themselves and always find their way around is much easier than using a map. It can also be used as a goal to get to for the player and makes navigating much easier.

For example, it is used in *The Last of Us* (Naughty Dog, 2013) at the start of nearly every level. The main character will point at some large object or building in the distance as a way for the player to position themselves but also use it to navigate the level. They usually mix it with the colour yellow, another technique just to make it clear that the colour is associated with a goal or something helpful for the player. (See Figures 4, 5, 6)

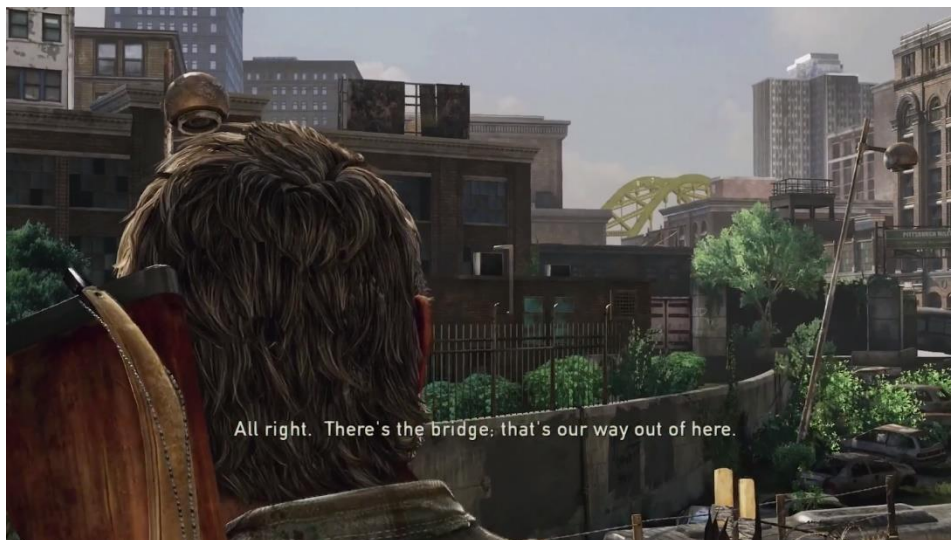


Figure 4: Screen grab from *The Last Of Us* (Naughty Dog, 2013), showing the yellow bridge (mission objective) in the distance.



Figure 5: Screen grab from *The Last Of Us* (Naughty Dog, 2013), showing the yellow bridge (mission objective) close up.



Figure 6: Screen grab from *The Last Of Us* (Naughty Dog, 2013), showing the “Capitol Building” another yellow mission objective.

Art

Art as a concept, is normally defined as the visual expression of creative skill or imagination. Creative activities also typically fall under the category, literature, music and dance are a few among the many different creative professions. The theory and principles that are used to create an aesthetically pleasing scene can be applied to many subjects even video games.

When it comes to art, there are lots of different mediums that can be categorised by “Art”. In this section, “art” will be referring to painting, sketching or other similar subjects, that use similar theory. These fundamentals can be applied to lots of creative subjects, the techniques and theory used to make a piece of art better.

Visual Composition -

"Composition is the art of arranging in a decorative manner the diverse elements at the painter's command to express his feelings." - (Benjamin, 1987)

Visual composition in art is a technique to describe the arrangement of everything that can be seen by a viewer. It is how elements of art are composed on a canvas and how they are organized. As Henri Matisse (Benjamin, 1987) says in his book, it is used to express the painter's feelings. Using the different elements to convey emotion and feeling. A technique that can also be applied to subliminal level design.

Leading Lines

One Visual Composition technique is the use of leading lines or guiding lines. Which is mainly used in painting and photography to draw the eye towards a focal point on the piece of work. The artist would intentionally or unintentionally construct a path for the viewer's eye to follow, using parts of the painting to form a subliminal line. (See Figure 7)

In the book *The Art of Composition* (Jacobs, 1926), although “leading lines” are not explicitly mentioned, that a line in art should be used to express a feeling of aesthetic “harmony”.

“...the eye should (then) be led to other things which take us from this principle object to other forms that are associated in a minor key, and which help to express the idea, to be in harmony...”

(Jacobs, 1926, p. 6)

As Jacobs points out, the line should be used to lead the viewer through your composition (your art) in such a way to make a piece more pleasing to the eye.



Figure 7: Etretat the Aval Door Fishing Boats Leaving the Harbour (Monet, 1885), edited to show the leading lines.

This technique can also be used with video games, not only to make a scene nicer to look at, but as a way to guide the player through your level. Another form of intuitive level design to draw a player towards a “principle object” or in this case a player’s objective.

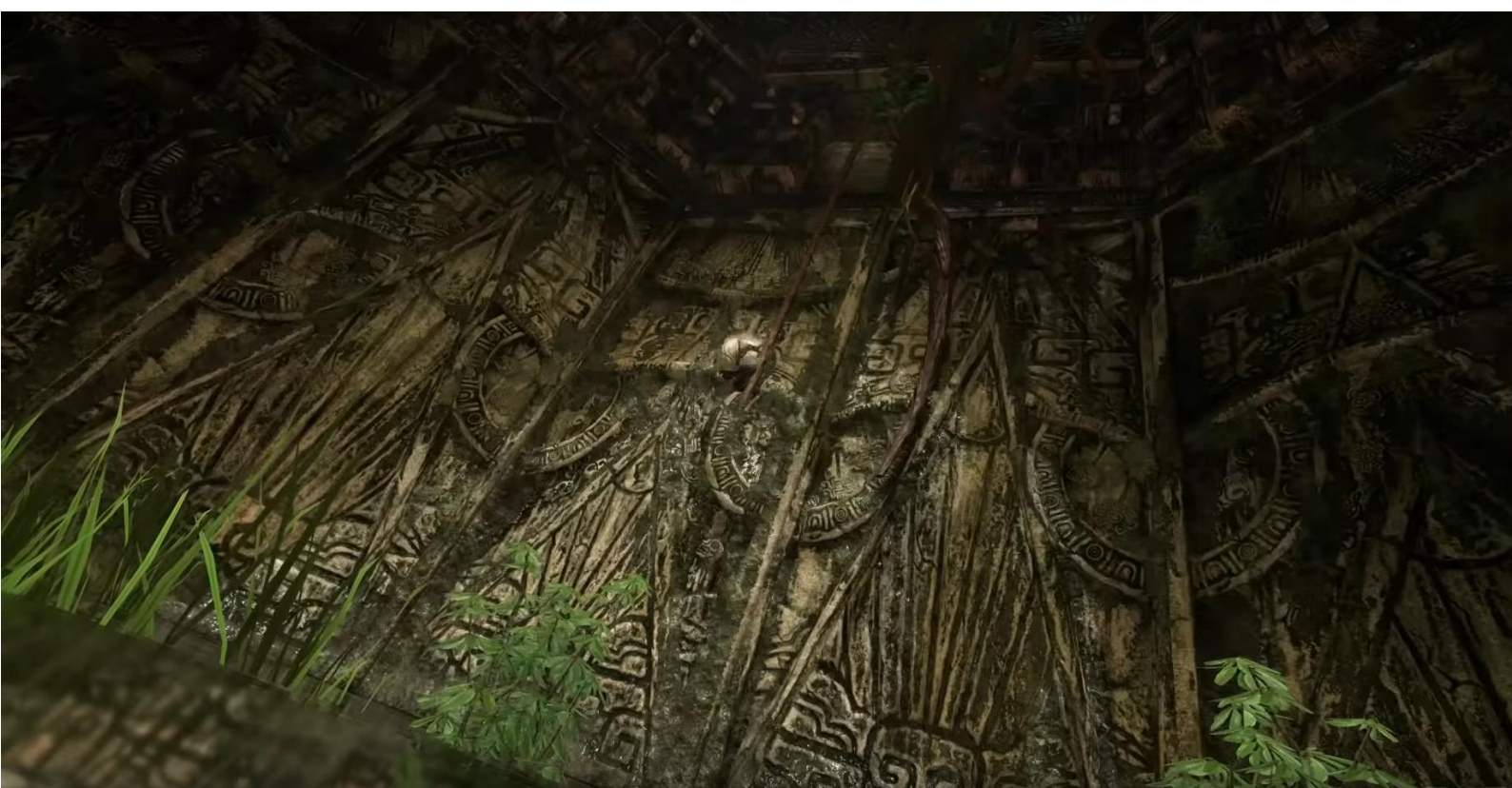


Figure 8: Screen grab from *Uncharted: Drake's Fortune* (Naughty Dog, 2007), showing the guiding lines created by the stone structure and vine.

For example, in this one part of *Uncharted: Drake's Fortune* (Naughty Dog, 2007) (See Figure 8), the guiding lines can be seen pointing down using the long rectangular pieces of the structure and also the rope that the player is using to climb down the cavern. This example also shows how the camera's positioning is very important so the player will always be in full view of the guiding lines to push them in the right direction.

Colour Association Art

Colour association is also used by many designers. A form of colour theory, how colours can evoke emotions and are universally used to tell a user a message with the colour associated with it. For example, Red, Amber and Green are used by drivers on the road and is generally universally known without the need of language at all.

In art it is fundamentally used with colour theory and other principles to make a piece of art more pleasing to the eye or set the tone of a piece of art.

In *Cafe Terrace* (Gogh, 1888), (See Figure 9) for example, although this is entirely subjective to everyone, the dark blue and bright yellow lights contrast with each other, making the scene feel quite warm and calming.

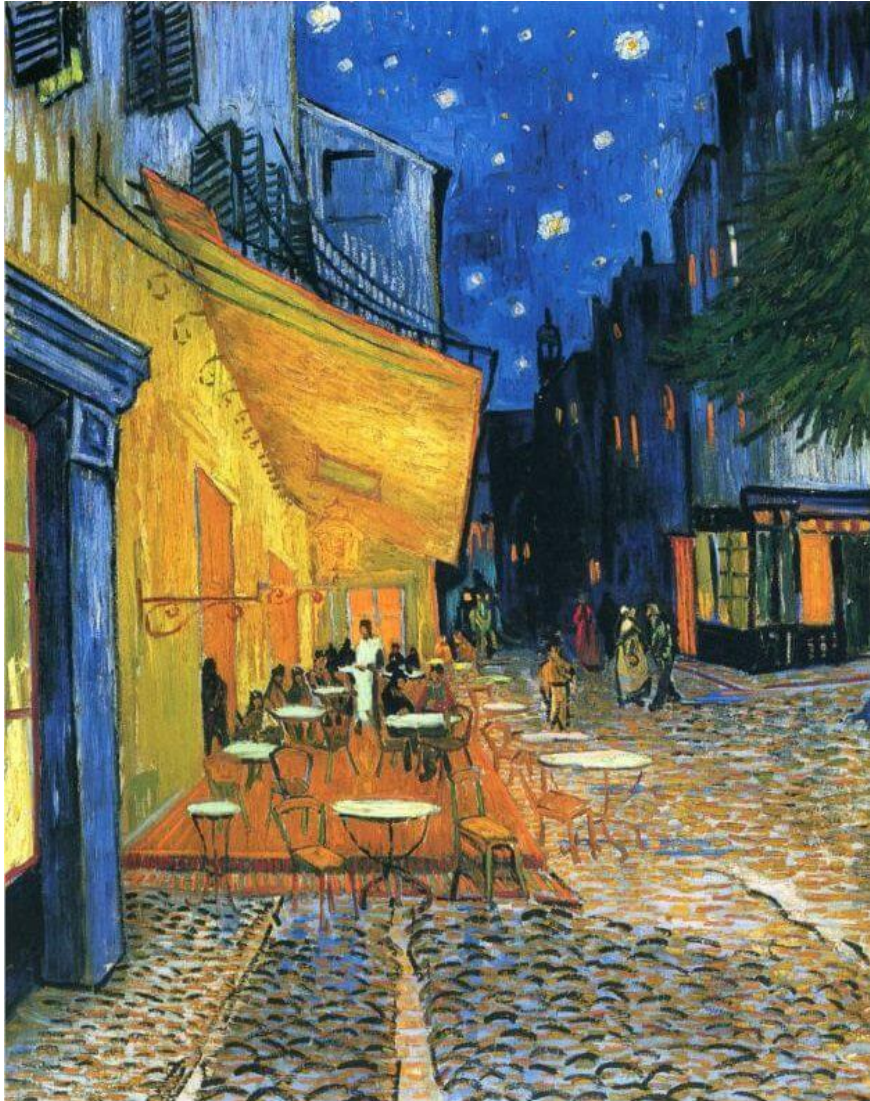


Figure 9: Vincent Van Gogh, Cafe Terrace at Night (1888), as an example for colour association and mood.

In my research Faber Birren, had the most information on colour and had brought out numerous books on the subject. In his book "Selling with Color" (Birren, 2015), he brings up how colour can be associated with different moods. (See Figure 10)

White, the symbol of light, signifies innocence and purity, joy and glory. Red, the symbol of fire and blood, signifies

The Modern Symbolism of Color

Color	General appearance	Mental associations	Direct associations	Objective impressions	Subjective impressions
Red	Brilliant, intense, opaque, dry	Hot, fire, heat, blood	Danger, Christmas, Fourth of July, St. Valentine's, Mother's Day, Flag	Passionate, exciting, fervid, active	Intensity, rage, rapacity, fierceness
Orange	Bright, luminous, glowing	Warm, metallic, autumnal	Halloween, Thanksgiving	Jovial, lively, energetic, forceful	Hilarity, exuberance, satiety
Yellow	Sunny, incandescent, radiant	Sunlight	Caution	Cheerful, inspiring, vital, celestial	High spirit, health
Green	Clear, moist	Cool, nature, water	Clear, St. Patrick's Day	Quieting, refreshing, peaceful, nascent	Ghastliness, disease, terror, guilt
Blue	Transparent, wet	Cold, sky, water, ice	Service, Flag	Subduing, melancholy, contemplative, sober	Gloom, fearfulness, furtiveness
Purple	Deep, soft, atmospheric	Cool, mist, darkness, shadow	Mourning, Easter	Dignified, pompous, mournful, mystic	Loneliness, desperation
White	Spatial—light	Cool, snow	Cleanliness, Mother's Day, Flag	Pure, clean, frank, youthful	Brightness of spirit, normality
Black	Spatial—darkness	Neutral, night, emptiness	Mourning	Funereal, ominous, deadly, depressing	Negation of spirit, death

From *The Story of Color*.

charity and generous sacrifice. Green, the symbol of nature, signifies the hope of eternal life. Purple, the gloomy cast of the mortified, represents affliction and melancholy. Black is

Figure 10: Faber Birren *Selling with Color* (2015) pg 178, showing different colours and the symbolism they have.

For example, Red would be associated with heat, danger, passion and rage. Using colour association an artist or painter can evoke emotions and direct a viewer. The same theory can also be applied to video games.

In video games, colours (Once imprinted early) can be used to subliminally tell a player that a certain action or mechanic can be used. It can even warn a player before something happens.

In *The Last of Us* (Naughty Dog, 2013), the colour yellow is used to tell the player, that particular part of the level is climbable or interactable (See Figure 11). This way the level designer can subtly nudge a player in a particular direction that the designer had planned out, without giving explicit instructions.



Figure 11: Screen grab from *The Last of Us* (Naughty Dog, 2013), showing the colour yellow being used to interact with objects.

It is also used in *Mirror's Edge* (EA DICE, 2008). The game famously uses a bright red on a contrasting white surface (See Figure 12), telling the player exactly where they need to go or a specific structure that can be climbed by the player.



Figure 12: Screen grab from *Mirror's Edge* (EA DICE, 2008), showing the contrasting colours of red, to highlight the path for the player.

All are examples of enhancing subliminal level design, telling the player exactly what to do without the need for arrows or big walls of text. To allow the player to play the game without being interrupted.

Photography

Light Photography

Light and lighting is used in many visually creative mediums, like photography, film and Tv.

This technique is the most common and arguably the most effective way of guiding the audience's eye.

In the book "*Basics Photography - Lighting*" (2013) Präkel, uses the quote:

"Light is the photographers medium... It is the mastery of light that marks out the work of the truly great photographers." (Präkel 2013, pg 7)

How photographers use light effectively is a long topic. It is typically used to highlight the focus of the photo and there are many ways it can be done and used effectively. Light is used since it is a great contrast to a darker environment and can be applied to almost any scenario where you want to guide the audience's eye.

In context to video games, providing that your surroundings and environment are dark enough, it can be used to draw a player in a certain direction, highlight items and important information. A very effective way to make your level more intuitive for the player.

However, since Games are interactive and lighting is often changed depending on where the player is standing, they need to be put in very specific spots and scenarios. In *Uncharted: 3: Drake's Deception* (Naughty Dog, 2011) for example, you are being chased and you find yourself next to a locked door (See Figure 13). Here the level designer uses light to clearly

signify to the player the solution to the problem of the locked door, without the need for text which would break the game flow (See Figure 14). This example of light is a good form of intuitive level design so the player can work out solutions by using the more obviously placed game environment.



Figure 13: Screen grab from *Uncharted: 3: Drake's Deception* (Naughty Dog, 2011), showing the light being used to draw the player.



Figure 14: Screen grab from *Uncharted: 3: Drake's Deception* (Naughty Dog, 2011), showing the player that the light is the solution to the puzzle, without explicit instruction.

Framing Photography

This technique is used in art and photography. This can be explained by thinking of it like a frame within your frame:

“Painters create secondary framing devices within the overall frame of the canvas and photographers have also found a rich source of imagery in this technique, creating ‘the image within the image’. (Präkel, 2018, Pg. 110)

This is how David Präkel briefly describes framing in his book on “*Basic Photography Composition*” (2018). Being able to find the “image within the image” makes for a better composition in your frame.

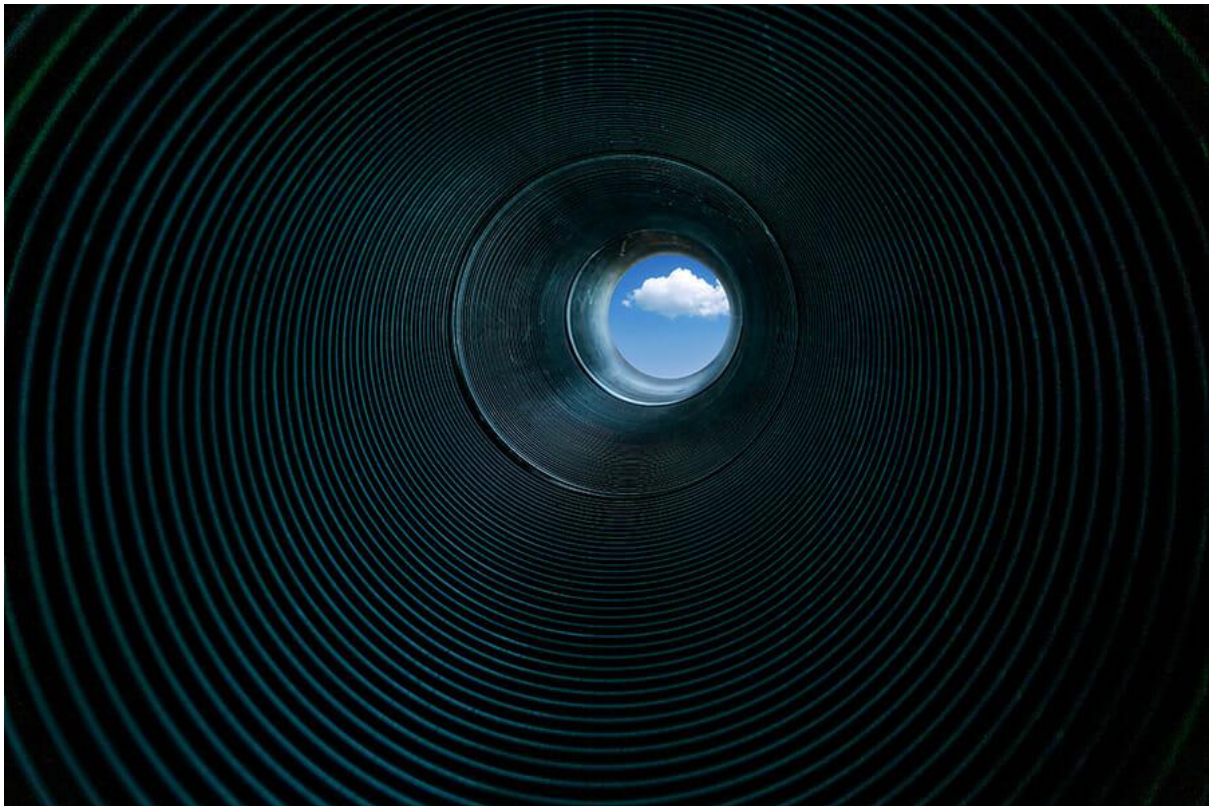


Figure 15: Example of Framing in Photography (PhotoBlog Official Blog, n.d.)

In this extreme example of framing (See Figure 15), the focus is on the cloud and the blue sky. Highlighting it through the use of the circular textured pipe. It makes for a more aesthetically pleasing photo.

In Nicole Price's blog (PhotoBlog Official Blog, n.d.) it's described a little further as "Using nature, architecture, colour and light" to frame a single point of interest in the shot. Again, a technique that can be lifted into the use of intuitive level design.

In games the frame can be considered the players camera and the secondary frame can be created using structures, light, colour and assets within the game world. For intuitive level design it can be used to highlight the players goals, objectives, convey points of interest or foreshadow moments later in the game.



Figure 16: Screen grab from Bioshock: Infinite (Irrational Games, 2013), showing an example of framing with the architecture and structure.

In this example in *Bioshock: Infinite* (Irrational Games, 2013), the pillars and arch serves as a frame for the main centre piece of the scene (See Figure 16). Only meant to give a moment in which the player is supposed to appreciate the aesthetic of the scene and not drive the story.

Film, TV, Animation

All very similar mediums but each with their own types of problems and solutions. All fundamentally are watched by an audience to tell a story on a 2-Dimensional Screen. This way the viewer is always being shown the perspective that the director wants to show.

Utilising the techniques used in cinematography to level design can help improve the pacing, story and enhance moments with the character. This section will be explaining a few of these techniques, to show how these can be applied to games with examples.

Motion Film

In film and cinematography, motion and movement can refer to the movement of the camera. Controlling what the viewer sees, while also using other techniques to make sure the viewers eyes are directed to the correct spot in the scene.

In one book that teaches film, "*Cinematography: Theory and Practice*" (Brown, 2012) it describes motion with camera dynamics as:

"The movement itself, the style, the trajectory, the pacing and the timing in relation to the action all contribute to the mood and feel of the shot" - (Brown, 2012, pg. 62)

It describes how moving the camera “distinguishes film from painting and photography”. The ability to move the camera correctly in position can make the scene. This is only one application of movement in film and

In video games, motion can be used in a variety of ways, but is mostly used to highlight something and grab a user’s attention. For example, it can be used to tell the player where to go by drawing their eyes in a certain direction.

It is used at the start of *Uncharted: 3: Drake's Deception* where in one particular scene a flock of birds fly past (See Figure 17). Not only does it tell the player where they should be going but it also subliminally flies in the direction where the player has to go to as well (See Figure 18). It gives the scene more life, making a very static scene more alive. Since it is also applied to direct the player, it helps improve the intuitiveness of your game.



Figure 17: Screen grab from *Uncharted: 3: Drake's Deception*, showing some birds on the critical path of the player.



Figure 18: Screen grab from *Uncharted: 3: Drake's Deception*, showing the birds flying off into the direction of where the player needs to go.

Foreshadowing

Another fun technique that is also used in film and TV is foreshadowing. Giving the viewer a subliminal or not so subliminal hint as to what will happen later or a potential future event. It is mostly used to build anticipation for the viewer and subtly nod to the careful onlookers.

In my research on the topic of foreshadowing, In Higdon's paper on "*The Use Of Foreshadowing As A Persuasive Device In Judicial Narrative*" (2010), he describes a scene from *Jurassic Park*. In one of the last scenes, where all the main characters are trapped by raptors in one room where they cannot close the door. However, one of the children managed to "hack" into the computer, closes the door and saves the day.

Without context the audience would have seen this as a cheap move from the directors, but earlier in the film one of the children are called out for being a nerd. To which they reply with: "I'm not a computer nerd, I prefer to be called a hacker".

This is an example of foreshadowing in film, telling the audience information without context, until it is needed later in the story for a surprise.

It is also used quite well in some video games. *Left for Dead 2* (Valve, 2009) does this nicely by showing parts of the next level, in the current one. Almost like a preview of the map that is up ahead and gives your levels more depth. In the game's first chapter, you can see the park that is in the next chapter (See Figure 19). This helps the player by subliminally familiarising them with the levels to come, almost trick the player into thinking they have seen this place before.



Figure 19: Screen grab from *Left for Dead 2* (Valve, 2009), showing a glimpse into the next level before they play it.

Chapter 3: Case Study: God of War (2018)

In this chapter, this section will break down one of the first levels in *God of War* (Santa Monica Studios, 2018). The reason behind choosing a case study is to show the different techniques that have been mentioned in action and pick apart how they use subliminal level design techniques in game.

God of War (2018) is a AAA title, received a perfect rating from IGN (2018) and has been described by critics as:

“An exceptional story, brilliant acting, superb controls and gorgeous level design, *God of War* is a masterpiece and an essential purchase for any PS4 owner.”

- (Digital Fix, 2018)

“I don’t think it’s possible to overstate just how good *God of War* is; how well realised its world, how nuanced and layered its characters and storytelling.”

- (Games Radar, 2018)

With many more reviews on Metacritic (2018) showing how well rounded this reboot of *God of War* (2018) is, it would be a good game to base this case study off of it and analyse their use of intuitive level design.

God of War (2018): Tutorial Level

The reason the first section has been chosen is because this is where the game typically teaches a player how to play the game and show how to use the mechanics in game. The time where a new player would need guidance.

To start with, the player is given exposition to go hunt deer with Atreus. Here the player is given their first quest prompt “Hunt with Atreus” (See Figure 20).



Figure 20: Screen grab from *God of War* (2018), showing the first moment the player gets control of the character.

Framing

The moment the player is given control the first thing the player sees is prompt on how to move the character and a wooden gate (See Figure 21). Here is an example of framing. The use of the structure gives the player only one path and the only way to progress is by going through the gate. This form of intuitive level design helps a new player on how to progress and sets the player on a critical path.



Figure 21: Screen grab from God of War (2018), showing the movement tutorial and example of framing.

Light

After leaving the gate, the player is set on the critical path with Atreus leading the way, subtly guiding the player where to go next. But one of the first things the player sees are lanterns spread across the path, an example of how light is used in *God of War* (See Figure 22). The lanterns act as a contrast to the dark snowy wooded area, if the player notices it or not it is used as a way to subliminally guide a player across the linear path.

In this example however, the lantern is used to show an optional path for the player to explore, which the player is immediately rewarded with a small interaction with Kratos and Atreus (See Figure 23). This shows new players that exploring gives the player a reward for going out of their way to increase the lore and story.



Figure 22: Screen grab from *God of War* (2018) showing an example of light, with lanterns.



Figure 23: Screen grab from *God of War* (2018) showing a cutscene reward for exploring off the beaten road path.

Colour Association

Then as the player follows along the path to a broken bridge, here the player is first introduced to the white markings on the ground (See Figure 24). The player, once walking up to it, then realises they need to press a button to jump over the broken path. It is from here on out that if the player sees those markings, they can immediately associate it with interaction. Associating the white markings with interaction, should allow the player in the future know what can be used to traverse the world. Which should enhance the intuitiveness of the game.



Figure 24: Screen grab from *God of War* (2018) showing marking on the ground that follow the same colour throughout the game.

Framing

Soon after the interaction the player is then given another split in the path (See figure 25).

One following the critical path and another side path to explore. The player is enticed by the pickup to go down the secondary path, but on further inspection the ground and trees form a frame around a chest in the distance (See Figure 26). The trees and the raised ground form a frame for the player, focusing their attention towards this direction. Again, showing that exploring off the beaten path can reward the player.



Figure 25: Screen grab from *God of War* (2018) showing another example of framing with a chest.



Figure 26: Screen grab from *God of War* (2018) showing the cheat that was being framed by the trees and raised ground to lead the player.

Foreshadowing

Further down the path, there is another split in the road, with another pickup drawing the player towards a steep cliff (See Figure 27). If the player opts to go towards the steep cliff, they are met with the view of another mechanic that the player has not learned yet. (See Figure 28). Here is an effective view of foreshadowing. Showing the player, a highlighted chain dangling off the other side of the cliff, that seems to lead to another part of the world. Getting a player excited to start learning another mechanic that has yet to be revealed.



Figure 27: Screen grab from *God of War* (2018) showing how the game is tempting a player with a pickup object on the ground.



Figure 28: Screen grab from *God of War* (2018) showing another currently unknown mechanic in the distance, that could be used later.

Colour Association

After the player has completed a combat tutorial, the player is given a bright green pickup at the centre of the screen (See Figure 29). Here more game literate people will associate that colour with health, but an information bubble will appear when the player gets close enough for those who do not know (See Figure 30). This bright colour contrast, with the use of subtle framing, should lead the player towards the pickup and investigate.

Another form of colour association is used here to tell the player, whether they are in the heat of battle or looking around for it, will be able to tell how to get health from pickups.



Figure 29: Screen grab from *God of War* (2018) showing an example of colour association with the health pickup.



Figure 30: Screen grab from *God of War* (2018) showing the player using the pickup and the tooltip explaining what it does, for new players.

Leading Lines

Once the player has jumped back onto the critical path, it leads the players eye in the particular direction of the building. With the use of the rocks on the left and right, but also the bridge that connects the building (See Figure 31). This is a form of guiding/ leading lines to make sure the player is looking at a focal point on the screen, which leads into the next intuitive level design component.



Figure 31: Screen grab from *God of War* (2018) showing an example of leading lines, using the architecture and environment.

Motion

Straight after the level designer has subliminally pushed the eyes of the player in one direction, they are met with the hunted deer wandering into the temple (See figure 32). The quick motion in the distance should force the player to look and subliminally telling the player where they need to go next, but also acting as a reminder for the overall quests goal.



Figure 32: Screen grab from *God of War* (2018) showing the deer wander into the temple for the player to follow.

Affordance

After our player has encountered some more enemies, they are left with their first puzzle. A large closed off space, a gate, one broken chain and one intact chain (See Figure 33). Here the large highlighted chain with a big white interaction spot on it is in focus for the player to see. A form of affordance that should tell the player exactly how to complete the puzzle, but also tell the player that the large highlighted objects can be used by the player.

Another form of affordance is taught to the player here too. Where the large cog is highlighted in blue, when the player looks at it (See figure 34). This tells the player that blue highlighted cogs can be interacted with by using the axe. Using both colour association and affordance to emphasize how one of the games core mechanics works.



Figure 33: Screen grab from *God of War* (2018) showing the open space for the player to work out how the player can interact with the world.



Figure 34: Screen grab from *God of War* (2018) showing the affordance in use, but also the use of colour association with the blue cogs.

This ends the tutorial for *God of War* (2018), as the player has learned every mechanic, they need to play the game further. But even in this short snippet of the game, that *God of War* has used 7 of the 8 techniques mentioned only in the first 20 minutes of the game. If this dissertation were to analyse further, there would be more intuitive visual level design components scattered around *God of War*.

This section should have shown that games can apply many of these techniques in many different ways to enhance your game. There are other games that can be analysed much in the same way this document did with *God of War* (2018).

Chapter 4: What Is the Universal Method For Level Design?

At the moment there is no predetermined way of making a “*perfect*” level design. Since every game will need a level to accommodate for the huge number of audiences, genres and platforms. In a quote from “*Fundamentals of Game Design third Edition*” (Adams, 2014):

“For some time, level designers have tried to define a set of principles to guide the level design process so that new games will avoid the errors of older ones.

Considerable debate surrounds this issue, because not everyone agrees on which, if any, principle is truly universal.” - (Adams, 2014, pg.441)

As Adams has pointed out, the “universal” method should be set out as guides for a level designer and it should be up to level designers themselves whether or not they want to use these principles. Since there are no perfect levels, there is only best practices to follow, to accommodate the intention of the game, the genre and the gameplay.

Conclusion

This research has looked at the techniques of visual level design and has shown examples of these in published games. This has been done by covering what intuitive level design is and explaining how there is no single methodology to making a level.

This discussion then explains the basic theory of some artistic fields and how they can be applied to intuitive level design with examples. The importance of using other creative fields can be applied in a level designers' workflow to create a more intuitive and visually appealing experience.

Finally, these elements are brought together by concluding with a case study on God of War, a game widely praised by critics and fans for its visual level design. The breakdown of the first level in this case study highlights these techniques and their application in level design

Games like God of War can prove how the design of an intuitive level may be enhanced through the application of research and design theory in other related artistic fields.

Further Work

Since level design is a much larger subject that could not be fully covered with the restricted word count. There were more topics that should have been brought up and explored, so this part of the document will cover them.

If this document were to continue, it would have also included more case studies on the subject to further points in an alternative workflow for an intuitive visual level designer. Another subject that was not discussed was the critical path that the player takes. How important it is to have a critical path that not only makes sense but works in the world you have created. Since there are many techniques, that have not been covered here, to enhance the player experience through your critical path. But also, why the path needs to be known to players at all times to increase the games flow, without breaking the immersion of the game.

It would also explore other subjects like how audio can affect level design and how much an impact that audio has on spatial awareness and how it can even be used in intuitive level design.

Another technique, this document could have covered is the method of deterring the player and keeping them on the path without disrupting the gameplay or the immersion of the player. Since almost every game is limited to where the player can go, the developers need to find a way to keep the player on a path that they can actually play with.

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