Exchanging the \textit{Souls’s} Series Level Design

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Abstract

The Souls’s series has become more and more popular over the recent years. The games have defined their own genre and are praised by many. One element of what is praised is the level design. The purpose of this paper is to examine how the level design of each game has developed over each game. To gather data from the games we have selected a number of principles found in level design related literature. After identifying these principles in the games we convert them into quantifiable data. What we found was that the results varied a lot and it was difficult to see any development. The study would have needed to be done on a grander scale to get more accurate and interesting results. Gathering player data could reveal interesting results such as paths players tend to traverse.

Key Words: Computer games, level design, RPG, souls.
Abstrakt

Souls serien har ökat i popularitet under de senaste åren. Spelen har definerat sin egen genre och hyllas av många. Ett element som hyllas är spelets level design. Syftet med den här uppsatsen är att undersöka hur varje spels level design har utvecklats under åren. För att samla datan har vi valt ett antal principer som vi har hittat i level design relaterad litteratur. Efter vi har identifierat principerna i spelen så omvandlar vi dem till kvantifierbar data. Vad vi upptäckte var att resultaten varierade mycket från år till år och det var svårt att se någon utveckling. Undersökningen skulle behövas gjorts på en större skala för att få mer korrekta och intressanta resultat. Att samla data från spelare skulle kunna ge intressanta resultat, ett exempel är vilka vägar spelare tenderar att ta.

Nyckelord: Datorspel, level design, rollspel, souls.
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1 Introduction

*From Software’s Souls* games have become more popular than ever. A new genre of games has emerged from the *Souls* games as proof for its recent growth. Although there are many aspects to what makes them genre-defining, the games’ level design is one of them.

This study is a comparative analysis of the level design over the years on the *Souls*-series, starting with *Demon’s Souls* (2009) all the way to its fifth installment *Dark Souls III* (2016). The *Souls* series consists of five titles over seven years by the same studio, each game iterating further on its design yet inheriting its core design philosophies. The games have received numerous praises from developers in the game industry on their level design. One example is in an article from 2012 in which Robert Boyd (2012) described the game *Dark Souls* (2011) as maintaining the illusion of an open world while in reality being linear. He also describes its use of shortcuts to open up the world to the player.

1.1 Purpose

The games examined for this study are *Demon’s Souls, Dark Souls, Dark Souls II* (2014), *Bloodborne* (2015) and *Dark Souls III*. They are all developed by *From Software*, a developer based in Japan. To consider how the games have developed over the years in terms of level design, we select a number of design principles to locate and identify in each game. These design principles make up the basis of our analysis. After identifying these design principles we convert them to raw data for analysis.

With the analysis of all games we examine what has changed over the years and whether any interesting development has occurred. Our purpose is to learn more about level design from the analysis of these games. We expect to find that the usage of these principles will have increased over the years as the developers have learned from each game.
1.2 Limitations

Due to time limitations the scope of this project only includes the first level from each game. This excludes the tutorial level that exists in some of the games. In some of these games the player can access several areas directly so we have chosen the level that seemed the most likely to be intended as a first area for the player to visit.

The paper is limited to examining six level design related principles we have chosen. These elements include fingers, weenies, foreshadowing, birth-cana ls, checkpoints and uses of lighting (all defined in section 2). Any conclusions that are made from studying this data could be attributed to some other element related to level design that has not been included.

There are no official maps of the levels in the Souls-series that are easily accessible. This research relies on fan-made maps being accurate. A few inaccuracies have been found in the maps used. Most of them were minor but some of them could not be fixed with the tools and resources we have access to.

The only reliable way to access the level in each game is to play the game. There are fan-made tools that can be used to access the collision-maps for the levels in Dark Souls and Dark Souls II, but since Dark Souls III was just recently released as of writing, no such tool has been released. The other two games; Demon’s Souls and Bloodborne are only available on consoles making the development of such a tool difficult. We made the decision not to use these collision-maps for consistency of the analysis.
2 Methods and Materials

To determine what elements in level design are important to create a functional level two books on the subject were examined. These books were Level Up! The Guide to Great Video Game Design (2014) and 100 Principles of Game Design (2012). By using these resources we concluded that the elements to consider would be: Fingers, Weenies, Foreshadowing, Birthcanals, Uses of light, Traps, Connections, Checkpoints and Shortcuts.

2.1 Fingers

In the book Level Up! (2014, p.228) Scott Rogers states that fingers are small dead ends that are placed around the main path of the level to make the level feel like the player is exploring the level instead of walking right through it. He writes that “Fingers are another way of making a world feel deeper and fuller without having to build lots of complex geometry and multiple paths that the player may never take.” He also suggests that while the level designer should not put anything “important to the critical path” down a finger there should always be a reward at the end to reward the player for exploring down the finger. He also states that the reward does not have to be treasure; it can also be in the form of combat, bonus materials not just something visual or fun.

Since Rogers writes that there should always be a reward at the end of a finger we have decided to split the fingers in to two quantifiable elements, fingers with reward and fingers without reward. This addition is for analytical purposes.

2.2 Weenies

In Scott Rogers’s GDC talk Everything I Learned About level Design I Learned from Disneyland (2009) he talks about how Disneyland is designed and how many of the design philosophies involved in creating Disneyland can be utilized when designing levels in video games. One of the most famous examples of this is Weenies. In the GDC talk Rogers states that “Disney described that he wanted to have the guest come towards certain objects like if you waved a weenie in front of a dog”. In that same talk, he describes weenies as landmarks that draw guests towards certain locations.

In the book 100 Principles of Game Design (2014, p.126) the author Wendy Despain writes “Aesthetically, weenies are architectural or geological landmarks with a wow-factor. They tend to be large and define a land’s region or territory with their presence. These special case landmarks have the tendency to demand the player’s attention and make the game’s location memorable. Mechanically, they serve as reference points from which to gather one’s bearings in the game world.”

2.3 Foreshadowing

By utilizing foreshadowing correctly in a level the level designer can begin to introduce elements to build up the player’s suspense and give them an idea of what to expect in later parts of the level or the game. This can be done in several ways. One example of foreshadowing is using posters. Scott Rogers talks about foreshadowing in his book Level Up!
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(2014, p.228) where he states “Another lesson I learned from Disneyland is to provide foreshadowing with posters. The guest passes by posters advertising attraction as they enter the park. While the guests don’t understand the significance of the images they’re seeing, the posters provide foreshadowing to future adventures.” He also gives BioShock (2007) as an example of this type of foreshadowing; in games, one of the best uses of posters is in BioShock when the player, first entering Rapture, sees posters advertising the superpower-giving plasmids. “Only once the player learns about plasmids and what they can do, is their significance understood.” Later on in the book Level Up! (2014, p.236) Rogers writes that his golden rule of level design is: “IF IT LOOKS LIKE THE PLAYER CAN GO THERE, THEN THEY SHOULD BE ABLE TO”.

2.4 Birth-canals

Wendy Despain (2014, p.126) describes birth-canals as “aesthetically linear, claustrophobic spaces which first funnel, then constrict, and finally release the player into agoraphobic spaces.” She also explains that these birth canals are mechanically used to delineate game regions spatially.

2.5 Use of Lighting

The use of light can be used in several different ways in games, as Wendy Despain describes it in the book 100 Principles of Game Design (2014, p.126) “Lighting is the means by which the game’s atmosphere and mood are communicated to the player. Lighting can convey feelings and emotions, temperature, direction, and meaning. A warm yellow light is comforting. Cold, blue light can be forbidding.” But the use of lighting examined in this report will be the type of lighting that helps the player in way finding. Despain (2014, p.126) describes this technique in guiding the player: “In way finding, the dynamics of lighting are akin to a moth to a flame; players instinctively seek the brightest areas, and thus these areas communicate an intrinsic direction they should go. This relationship allows designers to create non-structured paths for drawing the player forward.”

The lighting we examine is a navigational aid, to draw the player towards something. In the Souls series, items on the ground are depicted as a bright ball of light. Although they appear as bright balls, they do not emit light on the environment and will be excluded from our research in terms of use of lighting.

2.6 Connections

A connection is an element that was not present in any of the resources we looked at but we decided to add it to our analysis because the Souls-games utilize it quite frequently. In this context a connection means the part of the level which is connected to another area in the game. To make the term connection less vague we have specified the two types of connections that the Souls games use. These two types of connections are seamless connections and teleport connections.

In a seamless connection, the player can seamlessly enter another area without the game pausing to load it. These areas are normally distinguished by a change of aesthetics or by the
use of a text indicator in the HUD. In a teleport connection, the level is indirectly connected to another level by functionally teleporting the player to another area. The teleport is often activated by interacting with certain objects in the level.

In this series the player can, from the beginning in the game, or later in the game after unlocking it, teleport from checkpoints. We choose not to count these as connections due to the difference in how they work.

2.7 Checkpoints

Checkpoints are another element that we added because of their importance to the level design in the Souls-series. These checkpoints share many similarities but they work differently in each game. For the sake of doing a comparative analysis we have decided that teleportation by the use checkpoints is not counted as a connection, instead we count checkpoints as a separate element.

The checkpoints in Demon’s Souls are called archstones. Their main use is to serve as a point that the player will respawn at if they die. The player can use the archstones to teleport to the nexus, a place where they can buy supplies, level up and talk to NPC’s or teleport to other areas. When the player dies or leaves, nearly all of the enemies will respawn (with the exception of a few tougher enemies that are used as a one-time challenge). In contrast to the other games in the series each area only contains one checkpoint.

In Dark Souls the checkpoints are called bonfires. Unlike the archstones in Demon’s Souls the bonfires cannot be used by the player to teleport until the feature is unlocked late in the game. When the teleport function is unlocked in Dark Souls, the player may only teleport to certain bonfires. The main purpose of the bonfires in the game is to let the player level up and to respawn the player when they die. If the player rests at the bonfire, which is required to mark the bonfire as your current one, the player will regain all of their healing items (which are only replenish able by using this method) and most of the enemies in the game will respawn (as in Demon’s Souls, there are enemies that do not respawn and serve as a one-time challenge to the player).

The bonfires in Dark Souls II and III work much in the same way that they do in Dark Souls. The biggest difference is that in these games the player has the ability to teleport from every bonfire to every bonfire from the start of the game. The player cannot level up at bonfires in this game either, so they have to teleport to the main hub of each game, Majula or Firelink Shrine.

The lanterns in Bloodborne are nearly identical to the archstones in Demon’s Souls as they only serve as a place to respawn and to teleport the player to the Hunter’s Dream which is the main hub in the game where the player can then teleport to other lanterns.

2.8 Shortcuts

A shortcut is an alternate, shorter route through a level than the normal route. By making use of shortcuts, the player will not have to fully traverse the same area several times. A shortcut can be hidden, or the player can unlock it manually after they have successfully traversed the
normal route through the level. Hidden shortcuts reward players for exploring the level and can reduce frustration for the player. In the book *Level Up!* (2014, p.228) Rogers’s writes “Anything is preferable to having to plod through the same terrain over and over again. Give the player a car or a horse to get through those slow spots, let them ride a train or get a lift in a zeppelin, or, if your fiction supports it, there’s the always ever-popular teleporter.”

### 2.9 Map Measurement

To increase the accuracy and validity of the analysis, each level we examine was measured. This is so we can more accurately compare the levels and draw conclusions. There may be cases in which, for example, *Dark Souls II* is double the size of *Demon’s Souls* which may cause confusion. By determining the size of each respective level we can take that into consideration in the analysis and normalize the data.

All five games each have a player avatar, which is what we will use in order to determine the size. This method of determining map size is based on the presumption that each player character in all games is roughly the same size. As all the games have a character creator, all measurements use the average male character setting for consistency.

Firstly, we identify a square area that exists both on the maps we have collected and in the game. We make sure that the map corresponds with the actual game. Small inconsistencies between the maps and the actual game are expected and won’t harm the results as we only want to roughly figure out the relation between the sizes of each respective level.

Once in the game, we place the avatar in the squared area we identified in the previous step and take screenshots from above. We measure the width of the character’s waist from the bellybutton in the squared area. This unit is referred to as a *waist length*. With the measurement complete we for example know that the area we measure is 8x11 waist lengths or 88 wl².

The next step is to measure the pixels of the maps. First, the entire map is measured in pixels. An only area where the player may traverse is included. Secondly we measure that squared area we have measured in waist lengths and count the pixels there. As an example, we might find out that the area we measured in wl² is 260 pixels and the entire traversable area is 380 000 pixels.

The math needed the results are the following: Squared area in pixels/ squared area in wl² = wl² per pixel. All that is left is to divide the entire map in pixels by wl² per pixel and we have our result. Using the examples previously provided the results would be 260/88 = 2.95, 380 000/ 2.95 = 128 813 wl².

Note that this method is not exact, it relies heavily on the maps being accurate and that our measurement of the number of waist lengths is correct. The purpose of this method is NOT to get exact measurement but to roughly get the size of each level to compare them to each other. This is necessary for the analysis of the games as it normalizes the data in terms of sheer size of the levels.
3 Results

The data extracted from the five games has been put into tables below. Aside from the raw data, examples of what data we gathered and converted from each game is further down into the results section. This is to show more specifically what we found in every game and how it relates to the design principles we chose.

Table 1. Raw Level Design Data

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<thead>
<tr>
<th></th>
<th>Demon’s Souls</th>
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<th>Dark Souls II</th>
<th>Bloodborne</th>
<th>Dark Souls III</th>
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<tr>
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<td>72659</td>
<td>464026</td>
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<td>13</td>
<td>35</td>
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<td>15</td>
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<td>Fingers (No Reward)</td>
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<td>7</td>
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<td>3</td>
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<td>Weenies</td>
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<td>3</td>
<td>2</td>
<td>3</td>
<td>3</td>
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<td>6</td>
<td>6</td>
<td>4</td>
<td>3</td>
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<td>Birth-canales</td>
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<td>9</td>
<td>3</td>
<td>3</td>
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<td>8</td>
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<td>3</td>
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Table 2. Normalized Data (Density)

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<th>Bloodborne</th>
<th>Dark Souls III</th>
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<tr>
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<td>Fingers (No Reward)</td>
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<td>10.59</td>
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<td>2.74</td>
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<tr>
<td>Foreshadowing</td>
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<td>21.18</td>
<td>3.31</td>
<td>3.65</td>
<td>4.57</td>
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<tr>
<td>Birth-canales</td>
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<td>3.53</td>
<td>4.97</td>
<td>2.74</td>
<td>4.75</td>
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<td>Uses of Light</td>
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<td>0.55</td>
<td>2.74</td>
<td>1.58</td>
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<tr>
<td>Teleport Connections</td>
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<td>0</td>
<td>2.21</td>
<td>0</td>
<td>1.58</td>
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<td>2.76</td>
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<td>7.06</td>
<td>2.21</td>
<td>3.65</td>
<td>6.34</td>
</tr>
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</table>
Here is the data after being normalized to the size of *Boletaria 1-1*, the first level in of the first game in the series, *Demon’s Souls*. As previously stated in the map measurement section, these results are not precise and only serves as an estimate of the levels’ size.

### 3.1 Demon’s Souls, Boletaria 1-1

This section presents what we found in *Demon’s Souls*. We have provided a few examples paired with every category. As we did not have access to a capture card, we have taken the screenshots with a camera, hence the poor quality.

*Fig 1. Map of area*
3.1.1 Fingers

![Fig 2. Finger with reward](image1)
![Fig 3. Finger without reward](image2)

Demon’s Souls contains a total of 19 fingers, 15 of these contain a reward of some sort and four are fingers without any reward. Since the normalized data is normalized to the size of this map the normalized data is naturally identical to the raw data for this level. Fig. 2 is an example of a finger where the player is rewarded for exploring by a unique enemy for this level, a *Red Eyed Knight*, as well as a treasure.

3.1.2 Weenies

![Fig 4. Boletarian Palace Gate](image3)
![Fig 5. Stone structure above the Boletarian Palace](image4)

When the player first arrives in *Boletaria* the first thing that they will see is the gate that leads to the *Boletarian Palace*. This entire level is built around the player finding the way to open this gate, so showing it to the player immediately gives the player a goal clear goal to work towards.

The other weenie in is the stone structure above the *Boletarian Palace*. This weenie clearly marks the *Boletarian Palace* as an important area due to its sheer size and unique shape. This weenie is also visible to the player as soon as they enter the level (Fig. 5) and gives the player a more long term goal to work their way towards.
3.1.3 Foreshadowing

The *Red Dragon* is first introduced in a cutscene when the player enters the level for the first time. Near the end of the level the player can see the *Red Dragon* and the *Blue Dragon*. Close to the dragons there is a bridge that the player needs to traverse to complete the level where the *Red Dragon* will serve as environmental hazard. From the area where the player first sees the dragons, they can also see the *Lord’s Path* which is the main area in *Boletaria 1-2*. The main challenge in *Boletaria 1-2* is to traverse the *Lord’s Path* while avoiding the *Red Dragon*. The *Blue Dragon* will serve as a challenge to the player in the final level of the game *Boletaria 1-4*.

From this area the player can get a full view of the stone structure that is visible from the beginning of the level (Fig. 5).

3.1.4 Birth-canals

There are a total of three birth-canals in this level. The first one is located in the beginning if the level where the player have to traverse a dark area inside the wall guarding the *Boletarian Palace*. When the player has traversed this dark area the level releases them in a bright outside area on top of the wall.

The other two *birth-canals* are very similar in their purpose, location and aesthetics. They both take place inside the wall that guards the *Palace* right next to the gate in the beginning of the level that leads to the boss. They are both dark and narrow areas that release the player in the beginning of the level, an open area that is familiar to them.
3.1.5 Use of Lighting

Boletaria 1-1 does not make use of lighting in its level design. There are torches in the dark areas in this level but they seem to be placed for aesthetic purposes rather than to guide the player. Demon’s Souls uses items to guide the player quite often but as stated in section 2.5 items are not counted as a use of light in level design in this analysis.

3.1.6 Connections

Since this level is first entered by teleporting to an archstone, this game's equivalent of a checkpoint, this level contains only one connection. This is a seamless connection that leads to the Lord’s Path, the main area of Boletaria 1-2. This connection is first available to the player after defeating the boss of the level Phalanx.

3.1.7 Checkpoints

Since Boletaria 1-1 is the first level of this sequence of levels, it contains two archstones. One is located in the beginning of the level and will act as the main bonfire of this area. The second one is accessed by defeating the boss of the level and is used as the main bonfire for Boletaria 1-1.

3.1.8 Shortcuts

In this level there are two shortcuts that the player can unlock. These two shortcuts are connected to the beginning of the level, located on each side of the gate that leads to the boss. These shortcuts also functions as birth canals (Fig. 9)
3.2 Dark Souls, Undead Burg

Undead Burg was the smallest map out of the five, with less than half the size of the second smallest. Each category’s result is presented here paired with a few screenshots for each category.

**Fig 12. Map of area**

3.2.1 Fingers

**Fig 13. Finger with reward**  **Fig 14. Finger without reward**

One example of a finger without a conventional treasure reward is the tower (Fig. 13) at the end of the main area of the Burg. On the top of this tower there is an enemy wielding a crossbow. If the player misses this finger the enemy on top of the tower will attack the player from behind when the player is fighting a couple of other enemies nearby. If the player explores the area and enters this finger the player will be rewarded with an easier fight as they will not have to watch out for projectiles.

**Fig. 14** is an example of a finger without a reward. The finger is narrow and easy to miss, but it doesn't contain any treasure, enemies to fight or even something out of the ordinary visually.
3.2.2 Weenies

The Undead Burg has three weenies in total. The first weenie the player will see is the bridge above the burg, this bridge leads to the second weenie, the Undead Parish which is another area that lies next to the burg. The third weenie is the city wall that surrounds a big part of the burg.

3.2.3 Foreshadowing

Early in the level the Hellkite Drake is introduced by landing in front of the player and then flying away over the Undead Burg Bridge. The player will later be ambushed by the Hellkite Drake so this early introduction serves as a warning to the player. From this level the player can see five other areas that they will be able to visit later in the game. The areas are Lower Undead Burg, Undead Parish, Sen’s Fortress, Anor Londo and Duke’s Archives.
3.2.4 Birth-canals

![Fig 19. The path from Firelink Shrine to Undead Burg](image1)

![Fig 20. View upon exiting the birth-canal](image2)

To enter the Undead Burg the player has to go through an aqueduct which leads to a narrow staircase in the beginning of the burg.

3.2.5 Use of Lighting

![Fig 21. The Undead Burg bonfire.](image3)

![Fig 22. Path leading to a shortcut.](image4)

The bonfires in *Dark Souls* acts as a light source, this draws the player's attention and makes them easier to find. After defeating the first boss, Taurus Demon, the player gains access to the Undead Burg Bridge. The bridge is guarded by the Hellkite Drake which makes the player look for cover. In the middle of the bridge the player can enter one of the bridge’s pillars which lead them to a small room with two paths that they can take. One path leads to the next area and the other one leads a ladder that the player can kick down to use as a shortcut to the bonfire. The way to the bonfire is lit with torches that draw the player’s attention, leading them to find the shortcut before reaching the next area.

3.2.6 Connections

There are a total of five connections to other areas in the Undead Burg and all of these connections are seamless connections. The first connection is the connection to Firelink Shrine which is the way that most of the player will use to enter the burg. Then there are two connections very close to each other both leading to the Undead Parish. One of these connections could be considered the normal way to enter the parish, it’s a bit longer than the other one but it has the advantage of not being guarded by the Hellkite Drake. Then there is a
connection that leads to the lower Undead Burg, this connection is locked to the player until they reach the *Lower Undead Burg* and opens a door that can only be opened from one side leading back to the Undead Burg.

The last connection to another level is a door that leads to *Darkroot Basin* and can only be opened from that side. The connection can be accessed early if the player has the *Master Key* which the player can select as a starting gift when they create their character.

### 3.2.7 Checkpoints

The *Undead Burg* contains two *bonfires*, the first one is located in the middle of the level and functions as the main *bonfire* of the area, and from this *bonfire* the player can access the main area of the Burg as well as the bridge after unlocking a shortcut in the *bonfire*-room. The other *bonfire* is a *bonfire* that acts as a reward for the player for defeating or bypassing the *Hellkite Drake*, the main purpose of this *bonfire* is to give the player quicker access to the *Undead Parish*.

### 3.2.8 Shortcuts

In the Undead Burg there are two shortcuts that the player can unlock. The first shortcut takes the form of a ladder that the player can player can kick down after they have reached the bridge in the level. This ladder leads to the *bonfire* so if the player dies they can climb up the ladder to the top of the bridge instead of traversing the entire level again.

The other shortcut is the connection that leads to the *Lower Undead Burg* and since that area does not contain any *bonfires* this is the fastest way back to the lower area if the player dies down there.
3.3 Dark Souls II, Forest of Fallen Giants

This section presents the results of what was found in *Dark Souls II, Forest of Fallen Giants*. It will feature every principle we examine accompanied by one or two examples of each category.

*Fig 23. Map of area*
3.3.1 Fingers

Before the normalization of data according to map size, *Dark Souls II* contained the most fingers out of the five levels. The total was 35 fingers with rewards and seven fingers without reward. One example of such a finger is in figure 24, where the path branches out from the main path, rewarding the player with treasure for exploring. One example where the path branches without rewarding the player is in figure 25, where the path leads to nothing but a dead-end.

3.3.2 Weenies

There exist only a total of two weenies in *Forest of Fallen Giants*. The most impactful weenie found in *Forest of Fallen Giants* was the *Cardinal Tower* (Fig. 26). Most of the environment in this level is walls and walls of stone with not much else to draw the player’s attention; therefore the *Cardinal Tower* stands out as the tallest building and geographically the most central. The second weenie found in the level was the circular structure (Fig. 27) crowning the beginning of the level.
3.3.3 Foreshadowing

In the level, a total of eight instances of foreshadowing exist. One instance of foreshadowing is where we see Drangleic Castle in the distance (Fig. 28), an area the player will visit later in the game. In figure 29 we see a tree resembling a giant; the player can interact with the tree later in the game to travel to a new area.

3.3.4 Birth-canals

Dark Souls II contains a total of nine birth-canals, the most out of the five games. The level starts out in a birth-canal, leading towards the first open area of the level (Fig. 30). Another example is the birth-canal leading up to the Cardinal Tower (Fig. 31).
3.3.5 Use of Lighting

*Fig 32. Salamander pit*  *Fig 33. Fire Longsword*

*Forest of Fallen Giants* has a total of eight instances where light is used to guide the player. As seen in figure 32, the player walks by a pit of flames that illuminates the room. If the player examines where the lighting is coming from they can see treasure down below. Although more subtle than the previous example, in figure 33 we see an illuminated cave leading towards treasure.

3.3.6 Connections

*Forest of Fallen Giants* only has one seamless connection which leads to *Majula* the player’s hub. It does however have four different teleport connections leading to *Memory of Vammar, Memory of Orro, Memory of Jeigh* and the *Lost Bastille*.

3.3.7 Checkpoints

*Dark Souls II* has four checkpoints total. All of the *bonfires*, excluding one are stringed along the intended path. The player is almost guaranteed to see all three while the fourth one is entirely optional.
3.3.8 Shortcuts

Out of the three shortcuts in *Forest of Fallen Giants* the most notable shortcut in this level is next to a checkpoint (Fig. 34), where a wall can be destroyed and opens up a shortcut. The wall is destroyed by throwing explosives on a dozen of explosive barrels next to the wall. The player may also bait a hostile non-player character to throw its explosives on the barrels. Later in the level a door can be unlocked from one side (Fig. 35), opening a shortcut leading up to two boss fights.
3.4 Bloodborne, Central Yharnam

*Central Yharnam* was the second largest map of the five. Each category is paired with some text to explain what we found and a few screenshots per category.

Fig 36. Map of area

3.4.1 Fingers

*Central Yharnam* contains a total of 28 fingers with rewards and two without. It had the least amount of fingers without rewards out of the five games. An example of such a finger without reward can be displayed in figure 38 where the player is met with a dead-end. In figure 37 the
player is rewarded for exploring the dead-end and the treasure is even foreshadowed from the other side of the gate.

3.4.2 Weenies

![Fig 39. The Great Bridge of Central Yharnam](image1) ![Fig 40. The burning beast](image2)

There exist a total of three weenies in Central Yharnam. The great bridge in Central Yharnam is the first weenie the player sees in the level. Another example of a weenie is the burning beast in the town square of the city.

3.4.3 Foreshadowing

![Fig 41. Grand Cathedral](image3) ![Fig 42. Forbidden Woods](image4)

Central Yharnam contains a total of four instances of foreshadowing. In figure 41 a clock tower in the distance is visible from the player’s view. This particular clock tower is a part of the Grand Cathedral, an area the player will visit at several points in the game later. The gate in figure 42 is a path that leads to Iosefka’s Clinic and the Forbidden Woods. It can be opened from the other side when the player arrives from the Forbidden Woods.
3.4.4 Birth-canals

The player starts the level in Iosefka’s Clinic and gets an overview of Central Yharnam when she exits as seen in figure 43. There is another birth-canal, when the player exits the sewers in the lower part of Central Yharnam (Fig. 44). A total of three birth-canals exist in Central Yharnam.

3.4.5 Use of Lighting

There are four instances where light is used to guide the player in Central Yharnam. An example of lighting being used to guide the player is in figure 45 where the light shines on a heap of debris next to the wall. Behind all this debris lies a hidden path, granting the player an overview of the next area, treasure and access to a friendly non-player character. A second example is in figure 46 where light shines through the roof pointing towards treasure hanging from a chain.

3.4.6 Connections

Central Yharnam has two seamless connections, one leading to Cathedral Ward and the other one leading to Forbidden Woods. The latter one is locked in the early stages of the game and not accessible until a number of areas later.
3.4.7 Checkpoints

*Bloodborne* has a total of four checkpoints. The first two checkpoints are stringed along the intended path, while the other two are in two boss rooms.

3.4.8 Shortcuts

*Fig 47. Elevator*  *Fig 48. Locked Gate*

*Central Yharnam* has four shortcuts, the most out of the five levels examined. The first example is the elevator in figure 47. Once triggered from the other end, the elevator can be used freely by the player. The gate in figure 48 is also a shortcut, once opened from the other side.
3.5 Dark Souls III, High Wall of Lothric

This section presents what we found in *Dark Souls III*. Examples of what we found in each category are presented below.

![Map of the area](image)

*Fig 49. Map of the area*

### 3.5.1 Fingers

![Finger with reward](image) ![Finger without reward](image)

*Fig 50. Finger with reward*  *Fig 51. Finger without reward*

This level contains a total of 18 fingers, 15 of them are fingers that contains some kind of reward and three of them are fingers without reward. Fig 50 shows a finger with a reward in the form of an NPC. The example in figure 51 shows a finger without any reward, this finger is likely the result of a desire to keep this area fairly symmetric.
3.5.2 Weenies

At the beginning of this level the player is presented with the most prominent weenies of this area. The Grand Archives and Lothric Castle (Fig. 52), these are the areas that the player will naturally want to gain access to according to Scott Rogers’s definition of weenies. The Cathedral (Fig. 53) which acts as the entrance to Lothric Castle is also seen at this point (See Fig 52 in the bottom right corner).

3.5.3 Foreshadowing

The Grand Archives and the Lothric Castle (Fig. 52) are the biggest and most prominent weenies in this level; these two weenies also act as foreshadowing of what is to come later in the game. These two weenies are areas that the player will need to visit in the late game (these areas can however be visited in the early game as well if the player knows how to gain access to them, and have the skill necessary to beat late game bosses with a low-leveled character).

Early on in the level the player will come across a deceased wyvern, this wyvern acts as foreshadowing for living the wyvern the player might come across later in this level which acts more as an environmental hazard than a normal enemy.

After beating the boss at the end of the level, Vordt of the Boreal Valley the player is presented with this view that overlooks most of the major areas the player will visit during the course of the game. This gives the player an idea of the scale of the world, and gives them an idea of what kind of areas they will visit.
3.5.4 Birth-canals

The player gains access to *The High Wall of Lothric* by teleporting there from the game’s Hub, *Firelink Shrine*. When the player is teleported to the level for the first time the player is not teleported to the first *bonfire* in the area, instead the player is teleported into an enclosed room close to the first *bonfire*. This is the only instance in this game where the player teleports to a specified *bonfire* only to end up in another location. This is done so that the player has to walk through a short birth-canal (Fig. 56) and open a door manually to enter the level. The way the level designers have tailored the entrance to this level gives them full control over how the area is first presented to the player without having to take control away from the player.

3.5.5 Use of Lighting

In this level there are a total of 14 uses of lighting that are used to guide the player. Figure 58 displays the most common way this level uses lighting, torches or lanterns. In this example the touch is placed right next to the door that leads the player to the second *bonfire* in the area. The second example is when the player first arrives outside the *Cathedral*. As seen in figure 59 the lighting is focused on the area to the left, highlighting the path to the *Cathedral*. 
3.5.6 Connections

The High Wall of Lothric has two connections to other areas. The first connection is a teleport connection (Fig. 55) that the player can access after talking to the NPC character Emma and defeating the boss of this area, Vordt of the Boreal Valley. This connection takes you to the Undead Settlement, and can be accessed multiple times, but the cutscene is only player the first time.

The other connection is a seamless connection that leads to Lothric Castle. This connection is accessed by either progressing through the game until you have defeated three of the major bosses in the game. The player will then be teleported into the Cathedral in the High Wall of Lothric where they will have to defeat Dancer of the Boreal Valley to progress. The player can choose to fight the Dancer as soon as they reach the Cathedral if they wish. To do this they will have to kill the NPC Emma who is located inside the Cathedral and the Dancer fight will be available to the player.

3.5.7 Checkpoints

In the High Wall of Lothric there are a total of four bonfires. The player is given access to one of these bonfires as soon as they enter the level; this bonfire is used until the player reaches the second one, which is located around the midpoint of the level. The first bonfire in the level is also likely to be used to travel to the boss of the area Vordt as it is located near a shortcut that leads to the boss. Dark Souls III spawns a bonfire in the boss room of each boss after defeating them, and the two remaining bonfires are accessed after defeating the two bosses of this area.

3.5.8 Shortcuts

The high wall of has one shortcut. This shortcut is available to the player after they have reached the area directly outside the boss. If the player chooses to explore the area before they fight the boss. The shortcut takes the form of an elevator that leads to a locked door that can only be opened from one side. This door leads to an area close to the first bonfire in the level.
4 Analysis

Each game is first analyzed in each category, and later discussed in the discussion section. This is to first look at our results, individually to see any developments within the category. Then in the discussion we analyze all the data at the same time.

4.1 Fingers

The game that had the most fingers out of the five was Dark Souls II, before normalization according to map size. It had more than both its predecessors, Demon’s Souls and Dark Souls together. Below is a table of the number of fingers and the ratio of fingers with reward to fingers without.

Table 3. Fingers

<table>
<thead>
<tr>
<th></th>
<th>Demon’s Souls</th>
<th>Dark Souls</th>
<th>Dark Souls II</th>
<th>Bloodborne</th>
<th>Dark Souls III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fingers with reward</td>
<td>15</td>
<td>13</td>
<td>35</td>
<td>28</td>
<td>15</td>
</tr>
<tr>
<td>Fingers without reward</td>
<td>4</td>
<td>3</td>
<td>7</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Fingers with reward (normalized)</td>
<td>15</td>
<td>45.89</td>
<td>19.34</td>
<td>25.59</td>
<td>23.79</td>
</tr>
<tr>
<td>Fingers without reward (normalized)</td>
<td>4</td>
<td>10.59</td>
<td>3.86</td>
<td>1.82</td>
<td>4.75</td>
</tr>
<tr>
<td>Ratio of fingers with reward per fingers without</td>
<td>3.75</td>
<td>4.33</td>
<td>5</td>
<td>14</td>
<td>5</td>
</tr>
</tbody>
</table>

This table tells us that the densest out of the five games when normalized according to map size is Dark Souls, both with fingers with and without rewards. After calculating the ratio of fingers with reward to fingers without we came across some interesting results. Dark Souls was the densest of the games with 45.89 after normalization. After normalization the density of fingers in Dark Souls is over double the density of fingers in Dark Souls II, the game with the most fingers when looking at the raw data. Although Dark Souls is the densest in terms of both types of fingers, its ratio of fingers with reward to fingers without is the second lowest.

According to Scott Rogers, a finger should always have a reward at the end of it to reward the player for exploring. A lower ratio of fingers with reward per fingers without does not contribute to the level design. For an analytical purpose we can state that the lower the ratio is, the worse it is. With this information we know that Bloodborne, with the highest ratio of 14 contributes the most to the level design in terms of fingers. The absolute worst in this regard was Demon’s Souls with 3.75, making the amount of fingers without reward more frequent throughout the level.

Over the years, the frequency of fingers without rewards have dropped, reaching an all-time low with Bloodborne, and then stabilizing with Dark Souls III which remains identical to Dark Souls II. As Demon’s Souls had the lowest ratio, perhaps they learned something after its development.
4.2 Weenies

Table 4. Weenies

<table>
<thead>
<tr>
<th>Demon’s Souls</th>
<th>Dark Souls</th>
<th>Dark Souls II</th>
<th>Bloodborne</th>
<th>Dark Souls III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weenies</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Weenies (normalized)</td>
<td>2</td>
<td>10.59</td>
<td>1.10</td>
<td>2.72</td>
</tr>
</tbody>
</table>

Once again, the densest game is Dark Souls with 10.59 after normalized to Demon’s Souls map size. Although weenies cannot and should not be calculated by density as they represent an area no matter how large it is, we still see that Undead Burg has a lot of weenies for its size, relative to the other levels.

Since weenies are used to draw the player’s attention towards them, we can assume that weenies count as a navigational aid. Therefore, a higher density of weenies should contribute more to easier navigation of the level, provided that the weenies are well placed. The lowest frequency of weenies is credited to Dark Souls II’s Forest of Fallen Giants. It’s hard to see any development over the years, as the data is very inconsistent.

4.3 Foreshadowing

Table 5. Foreshadowing

<table>
<thead>
<tr>
<th>Foreshadowing</th>
<th>Demon’s Souls</th>
<th>Dark Souls</th>
<th>Dark Souls II</th>
<th>Bloodborne</th>
<th>Dark Souls III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreshadowing</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Foreshadowing(normalized)</td>
<td>4</td>
<td>21.18</td>
<td>3.31</td>
<td>3.65</td>
<td>4.75</td>
</tr>
</tbody>
</table>

The raw data shows that Dark Souls and Dark Souls II both contain six instances of foreshadowing while the rest of the games contain four cases each. When looking at the normalized data, Dark Souls is by far the densest when it comes to foreshadowing. When normalized, the number of foreshadowing in Dark Souls II is brought down to closer to the rest of the games.

Overall the instances of foreshadowing are fairly consistent from game to game when normalized. The exception is Dark Souls, which also has the most seamless connections to other areas out of all the levels we looked at. Most of the foreshadowing in Dark Souls is foreshadowing of other areas.

The world in Dark Souls is very dense, and many areas are very close to each other, this is evidenced by the fact that you can see several of the major from the Undead Burg such as Anor Londo, Sen’s Fortress, the Duke’s Archives, and the Undead Parish.

In contrast to the Undead Burg, the Forest of Fallen Giants only has one instance of foreshadowing of an area that can be accessed without teleporting anywhere. This is the Drangleic Castle which can be seen in the distance. Since the map from Dark Souls II only
contains on seamless connection to other areas, it makes sense that fewer areas would be visible from this level. The other instances of foreshadowing in *Forest of fallen Giants* are foreshadowing of things inside the level such as the salamander pit, the King’s Door or the three giant memories.

### 4.4 Birth-Canals

#### Table 6. Birth-canals

<table>
<thead>
<tr>
<th></th>
<th>Demon’s Souls</th>
<th>Dark Souls</th>
<th>Dark II Souls</th>
<th>Bloodborne</th>
<th>Dark III Souls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth-canals</td>
<td>3</td>
<td>1</td>
<td>9</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Birth-canals (normalized)</td>
<td>3</td>
<td>3.53</td>
<td>4.97</td>
<td>2.74</td>
<td>4.75</td>
</tr>
</tbody>
</table>

The level with the most birth-canals is *Dark Souls II*’s *Forest of Fallen Giants* both before and after normalization. There seems to be a growth of the number of birth-canals although the number dipped with *Bloodborne* to an all-time low. It recovered with *Dark Souls III*, nearly to the same number as *Dark Souls II*. To us, the results did not seem interesting as it was hard to draw any conclusion for the results. However what was interesting is the fact that all levels except *Demon’s Souls*’s *Boletaria 1-1* started with a birth-canal. The first impression of every level except Demon’s Souls was made using a birth-canal to introduce the level. This seems to be a trend they have applied to all first levels of each respective game after *Demon’s Souls*.

### 4.5 Uses of Light

#### Table 7. Uses of light

<table>
<thead>
<tr>
<th></th>
<th>Demon’s Souls</th>
<th>Dark Souls</th>
<th>Dark II Souls</th>
<th>Bloodborne</th>
<th>Dark III Souls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uses of light</td>
<td>0</td>
<td>4</td>
<td>8</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>Uses of light (normalized)</td>
<td>0</td>
<td>14,12</td>
<td>4,42</td>
<td>3,65</td>
<td>22,2</td>
</tr>
</tbody>
</table>

Perhaps the most surprising result in this section is the fact that *Demon’s Souls* did not contain any instance where light is used to guide the player whereas the other levels had several. This is appears to be something *From Software* have learned from the development of *Demon’s Souls*, their first *Souls* game. What is interesting as well is that *Dark Souls III* had the most uses of light of all both before and after normalization. Something happened with *Dark Souls III*, perhaps with new technology that enabled them to more frequently use lighting as a guiding tool. *Dark Souls* had a high amount of uses of lighting as well after normalization, but that could be credited to the small size of the level.
4.6 Connections

Table 8. Seamless and Teleport Connections

<table>
<thead>
<tr>
<th></th>
<th>Demon’s Souls</th>
<th>Dark Souls</th>
<th>Dark Souls II</th>
<th>Bloodborne</th>
<th>Dark Souls III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seamless</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Teleport</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Seamless (normalized)</td>
<td>1</td>
<td>17.65</td>
<td>0.55</td>
<td>2.74</td>
<td>1.58</td>
</tr>
<tr>
<td>Teleport (normalized)</td>
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<td>0</td>
<td>2.21</td>
<td>0</td>
<td>1.58</td>
</tr>
<tr>
<td>Total (normalized)</td>
<td>1</td>
<td>17.65</td>
<td>1.65</td>
<td>3.65</td>
<td>3.17</td>
</tr>
</tbody>
</table>

*Demon’s Souls* only contains one connection which is a seamless one, this result of the way that the progression through *Demon’s Souls* is structured. In *Demon’s Souls* there are five different worlds with three to four levels each. These levels are accessed by teleporting from the hub to a checkpoint, after that the player has to progress linearly from level to level inside that world. Due to this structure *Boletaria 1-1* can only contain one connection which is the connection to *Boletaria 1-2*. This is maybe the biggest difference in level design when comparing *Demon’s Souls* to the rest of the games which all uses a mostly seamlessly connected world.

Most of the data shows that *Dark Souls’s Undead Burg* is the densest of these levels and here we can see that the *Undead Burg* also has the most connections to other areas. Two of these connections both lead to the same area, which means that the level borders four other areas in the game. Not only does the *Undead Burg* has the most connections, and is the most dense of the games, it also only contains seamless connections.

*Central Yharnam* from *Bloodborne* is the second densest when it comes to seamless connections with a total of three. This level also has the third most total connections.

The level examined in *Dark Souls II, Forest of Fallen Giants* shares the highest amount of connections with *Undead Burg*. But the level only contains one seamless connection. It does however contain four teleport connections which all lead to areas that are only accessible via teleporting.
4.7 Shortcuts

Table 9. Shortcuts (need to fix border and fancy formatting)

<table>
<thead>
<tr>
<th></th>
<th>Demon’s Souls</th>
<th>Dark Souls</th>
<th>Dark Souls II</th>
<th>Bloodborne</th>
<th>Dark Souls III</th>
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<tbody>
<tr>
<td>Shortcuts</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Shortcuts (normalized)</td>
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<td>7,06</td>
<td>1,65</td>
<td>3,65</td>
<td>3,17</td>
</tr>
</tbody>
</table>

Following Scott Rogers’s definition, shortcuts add replayability. They allow the player to get where they want without traversing the same tiresome route they took before. We will assume with this information that less shortcuts makes the player tire faster of the level. *Dark Souls* should be the level with the most replayability in terms of shortcuts according to our results. There does not appear to be any development over the years, not enough to draw any conclusions about shortcuts in each level.
5 Discussion

Something we noticed was that the data we got from the five games was often inconsistent from game to game. Not a single one of the categories showed a steady development whether it was an increase or a decrease. We had expected there to be developments for each title, since the impression we had was that the games have been evolving in terms of level design. An example could be that the game has increased the amount of shortcuts over the years as something they learned from their previous titles. This was not what we found. There is of course the possibility that we examined the wrong aspects of the each level that the fault lay in our method instead.

We believe one reason for the inconsistent data to be the map size of Undead Burg. As Dark Souls’s level is the smallest by far out of the five levels we get a spike in the normalized data. The level is much denser than the others in all categories except uses of light and birth-canals. We believe one explanation is the lack of open areas. From a top-down perspective, the level seems to mostly consist of corridors and small spaces while the other levels all have some large open areas in them. This could explain the density of the level. Perhaps a more compact level is desirable level-design wise.

5.1 Problems with our method

As we went on with our research we discovered that there existed some inherent faults in our method. One is as mentioned previously that there is a lot of factors that level design depends on that we haven’t quantified. A few examples of these are hostile non-player characters, items, traps, loops and verticality. If we were to do a research on a larger scale, all these would definitely be included. What would also be included if we had a bigger scope would be player data which would help a lot in determining what level design practices work well in the games.

Another thing we missed out completely was pacing, which to this day we have no idea of how we would measure it. We believe that pacing is something worth examining if we were to do this on a grander scale. Perhaps player data could be used to measure pacing.

Then there is also the problem of personally identifying elements such as, for example, foreshadowing based on the defined characteristics of one. There are a lot of cases where we were unsure if something fit the characteristics of one of the elements we looked for or if what we looked at only resembled the elements in some aspects. There were some hard decisions that had to be made, to convert what we found into raw data. We relied on the maps we gathered too much perhaps, which could prove to be inaccurate. We do not believe this is the case but the possibility is there. Given more time and better technology, we could have gathered the map data from the actual game models. The method we used to normalize the data could be done with more accuracy if we had access to the map models from the game. The map could also be divided into optional and non-optional parts. This could lead to something interesting.
5.2 Other observations

Here are a few examples that did not fit in any other place in this paper but we still wanted to talk about, even if they are only presented as examples of other things that are more difficult to quantify but still helps the player by using clever level design and enemy placements.

When examining these levels we realized that in several of these levels there are instances of enemies that are placed in a way that they will help the player. One of these instances is right before the boss of the Undead Burg. The boss arena is a long corridor and the boss will not spawn until the player reaches the midpoint of the corridor. When the player starts through the corridor they will be attacked from behind by two archers. This turns the player's attention to an easy to miss ladder where the player climb up to the tower where the archers are standing and kill them before the player have activated the fight. This area can be used to perform plunging attacks on the boss, which is a powerful attack the tutorial taught players in the very beginning of the game. So while these enemies will likely do a little damage to the player, they are also used to guide the player towards figuring out this technique themselves.

*Dark Souls III* does something similar by using an archer to deliberately draw the player's attention to one of the shortcuts near the level. As seen in figure 59 the area is lit in a way to draw the player to the cathedral. If the player would go that way they would end up at the boss without a way to quickly get back there if they die. So *From Software* placed an archer to the right that will shoot a non-observant player in the back, thus drawing the player's attention to the path that leads to the shortcut.

In one area in this level of *Dark Souls II* there is a fire-ball wielding enemy that can be used to unlock a shortcut. When the player reaches an area that lies adjacent to the first *bonfire* there will be an enemy placed on a ledge above the player throwing firebombs. Next to the wall that separates the *bonfire*-room with this area there are a lot of explosive barrels. When the player walks past these barrels there is a fairly large chance that the enemy will hit these barrels with a fire-bomb and making them explode. This results in a hole in the wall that can be used as a shortcut.
6 Conclusion

What we found in the data from all five games was difficult to draw any concrete conclusions from; perhaps we examined the wrong aspects of level design. We found that our principles were hard to identify in Demon’s Souls’s Boletaria 1-1 as the results came out low in nearly every category. We have come to the conclusion that From Software; the developers learned something from the development of Demon’s Souls which caused the coming games to use the principles more frequently. An example of this could be that in all four games after Demon’s Souls, each one has started their first level with a birth-canal, to give a better overview of the level. As game developers this is something we can learn from and utilize in the future, when designing level and could prove to be useful. In the other observations section, there were a lot of clever ways the developers guided the player which we had not accounted for in our method. We were fascinated by these methods, and we believe it is worth examining more thoroughly to learn more from it.

6.1 Future studies

As previously stated in the discussion, this sort of examination requires a broader scope. For future studies, a number of things such as enemy placement, item placement and verticality are a few of what could be studied. Using player as a means of measurement would also improve the method. For example, using player data to analyze how much time it took for an average playthrough of the levels or examining what items were most consistently picked up.
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No date. No title [image online] Available at: <http://i.imgur.com/MfsU0gp.jpg>[Accessed 2016-05-24]

Glossary of Terms

Boss
A boss is a tough enemy that serves as a challenge that the player must overcome for a reward in some form.

Cutscene
A cutscene is a term used for when a game takes control from the player and shows a short movie-like clip. Cutscenes can have many uses, such as moving the story forward or introducing new areas.

Hub
The word Hub refers to a safe area for the player, which main purpose is to serve as a link to other areas.

HUD
HUD stands for Heads Up Display and consists of elements that are rendered statically on the screen so that they are visible without depending on the direction of the camera. The HUD is used to convey information to the player such as health, stamina, ammunition etc.

Level
A level is a part of the overall game world that is separated in some way from other areas. The separation can be mechanical such as a door that the player has to walk through to reach other areas or aesthetic where the difference is clearly marked by a change in thematic setting.

NPC
NPC stands for Non Playable Character and refers to a character not controlled by the player. An NPC is often considered mechanically friendly to towards the player.

Playthrough
A Playthrough is simply a term for playing a game, or a specified level from start to finish.