

Examination of first person stealth games through content analysis and comparison

Thief Gold compared to subsequent games featuring a similar design

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Master's dissertation 30 credits

Subject | 4th semester 2023

Programme: User Experience and Interactive Media Design,
Master's Programme - P4415



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ABSTRACT

There are multiple games which can be classified as “first-person stealth” and an early game in this genre called Thief Gold has been directly influential in it. Defining the genre through certain qualifiers and using games which have directly been stated to have been influenced by Thief Gold, Thief Gold has here been compared to six subsequent games in the genre. What has been discovered is that while core similarities always exist, the same problems have different solutions depending on the overall design for individual games.

KEYWORDS

Thief, PC gaming, stealth, Game, Design, First Person, Inspiration, Genre

1 Introduction

There is a distinct genre of video games played in the first person person which emphasize stealth gameplay, this typically takes the form of the player being incentivized to avoid detection from enemies or knocking them out rather than engage in direct combat with them.

An early example of this is Thief the Dark Project, a PC exclusive game released in 1998 and was developed by Looking Glass Studios. Thief Gold is the second edition of a PC-exclusive video game originally published as Thief the Dark Project. For the sake of this study, Thief Gold is being used rather than Thief the Dark Project because it is the edition which is currently being sold online and is compatible with Windows 11 and will thus not require any unofficial modifications in order to function correctly on modern hardware. The game is referred to as Thief Gold in the analysis because it was the edition played, though some references to other studies refer to it as Thief the Dark Project, these distinctions exist to establish which editions was used in the proper context. The purpose of this study is to compare and contrast the game design of Thief Gold to later games which use a very similar design philosophy. The important limitations in order for these games to qualify as being similar enough are these:

- The game must be playable in the first person perspective, either exclusively or optional for primary gameplay.
- As Thief Gold is a PC exclusive game, the games used must be playable with a mouse and keyboard set-up for comparison.
- Most importantly, the games must communicate stealth as being the core mechanic.

Aside from confirmed inspirational connections between these games, the similarities between them could still be determined independently of developer comments and the design similarity are intentional. What can be observed is that Thief Gold has provided a set of guidelines for creating these types of games, one which still offers a great deal of variation and tweaking. Depending on the needs of the design, features may be added or removed in order to better balance the difficulty with the design process. In this study, the core gameplay and the individual core mechanics were analyzed, core gameplay being what the core mechanics create through communication with the player.

Every game used in this study, aside from Thief Gold itself as a natural consequence, was released after Thief Gold. In addition, each entry of the Thief series used in this study also predate every other game used in the study. The formal analysis and comparative analysis methods were used to form a conclusion. Each game was played to completion on what may be considered the medium difficulty level.

1.1 Literature review

A common element of the research into how inspiration and genre in game design is how to qualify and track them through common elements. What much of this research may fail to address how games with a common source of inspiration or are part of the same genre may differ from the common source or how they differ from each other. In practice, depending on the elements which have been inserted or removed, there may be a common standard from which the games may tend to follow though this is

not a guarantee they will share every defining element of the inspirational source. As an example from this study, Filcher and Dishonored share a common source of inspiration in Thief Gold [16,38], while the similarities are evident, Dishonored does not use the light and shadow in the stealth system while Filcher does not allow the player to fully engage in combat if discovered, both of which were features in Thief Gold.

It is to be noted that some references used here are in relation to Thief the Dark Project, which is the first edition of the game. For the purposes of this study, Thief Gold which is the second edition was played for analysis. References which used Thief the Dark project will reference the game as such, while statements made on Thief Gold specifically will refer to the game as such. This is to establish that there is a distinction to be made, as they are different editions of the same game. However, Thief Gold contains all the material from Thief the Dark Project and is officially referred to as an update [27], thus the use of references which used Thief the Dark Project applies to Thief Gold as well.

1.1.1 Inspiration and genre

The concept of genre in games can in some cases be considered as inherently possessing various sub-genre but the definition of what qualifies as the primary genre and a sub-genre can be difficult to determine, as multiple sources may present differing opinions on the subject. As Arsenault demonstrated, Moby Games, which is a database cataloging video games and information about them, qualifies genres as being able to fit into a basic genre with different perspectives and themes, while GameSpot, a journalistic website focused on gaming, makes use of sub-categories as the example of “Action>Shooter>First-Person>Tactical>Modern” [6].

Because of how difficult it may be to even qualify the concept of genre in a concrete way, it is important to outline how genre is being investigated the context of this study. The games being used will all make use of the first-person perspective, as this provides an objective point of comparison to start from. Because all of them use the first-person perspective it results in an immediate similarity in the user interface of each game and will not differ in too many ways. This is also why every single game included in the study make use of keyboard and mouse as the input by default. While it may be possible for some of these games to be playable with other input devices such as controllers, it is important that the core game to be used as the initial point of comparison is a PC-exclusive and does not have official support for any other input method beyond keyboard and mouse.

Genre may also be thought of as an iterative process of development through remediation as exemplified by Apperly, one such example would be the influence of the tabletop game Dungeons and Dragons on role-playing games in the field of video games, while the genre may have started by merely copying the basic rules of Dungeons and Dragons it is important the at the genre has indeed diverted into multiple different sub-genres in order to fit the needs of developers and the target audience [3].

This is necessary to understand as the genre of first-person stealth games may have largely made use of Thief Gold’s basic set-up and the similarities between these games may still be evident, it is important to note that these games diverge from the original source of inspiration in different ways. While none of the

games used for this study have diverged in design from Thief Gold in a particularity radical way as to constitute a different sub-genre, there are still noticeable differences between them and determining the exact purpose of making these deviations and how it alters the design are important to note.

In reference to a specific game being used as the point of comparison for a genre, Garda’s study showed that there was a distinct comparison which could be made between the game Rogue and the genre of Rogue-like, through the use of randomly generated elements and the concept of permanent failure [10].

What this implies is that defining a genre may indeed originate with a single game as an origin point. What is important to note is that it is still important to determine with certainty that the game in question is indeed the origin of these ideas, or that enough concepts are shared between the games in order to determine such a relationship. For this study, Thief Gold can be determined to be an originator for this genre or a direct inspiration for the other games used. While the shared mechanics and general similarities in design may be enough to determine this relationship, direct statements from the developers have been used in most instances to ensure the inspiration is confirmed. The direct sequels to Thief Gold are expected to have a direct relationship with Thief Gold and thus direct statements from the developers are not necessary to determine a direct link between them.

Another such study went into the details on Metroidvania, a genre named after the respective game series’ Metroid and Castlevania for their emphasis on backtracking in a two-dimensional platforming environment, of which the inspiration from these particular serieses may be clear in many games that may clarify as part of this genre[30]. Such games tend to have a very clear connection to Metroid and Castlevania’s game design and can be considered very difficult to deny[30]. Indeed, the genre of Metroidvania can be considered defined by the emphasis to encourage the player to explore [29].

This may be a better definition of a genre, as it would require a similar design by default and includes a more concrete set of rules that need to followed in order to qualify.

According to Hagen, game design can be said to have an original and a destination, in which recycled and inventive ideas may both be used to aid in the final product [13].

This is very important to note, as no product exists completely isolated from the broader field of existing design. We can think of this as a template being modified and reworked in order to properly make new conclusions as to what needs to be done to the design in order to achieve an improved design or a design that can be deemed more satisfactory to the intended goals.

Game design may also feature elements of inspiration from outside of the domain of games, Habel makes the case for how the game Dead Space implements ideas from film in order to create design [12].

It is worth noting that as products may not exist in isolation of other products in the same field, nor do they exist apart from a broader scope of potential influences. As any given genre may have an exact origin or at the very least a core set of establishing concepts, it is worth noting that these alleged originators may themselves have their ideas originate from other genres and loosely related products.

Another way to conceptualize the idea of inspiration within the field of game design is as a network of ideas in which ideas are existing in a large interconnected web of concepts, influencing each other over the course of development, both from inside and outside of the development team [18].

As may be learned from this, trying to understand how and which ways inspiration plays a role in design can be very difficult due to how broad the number of influences may be on a single project. This implies that in order to properly make an analysis of the product and the design therein, it is important to not attempt to be over-inclusive in the use of reference material. This is why this study has elected to only make use of games that specifically contains elements of Thief Gold and in some unambiguous way can be said to be objectively similar to Thief Gold in terms of gameplay and design.

It is important to note that while games intended to be reminiscent of older games may indeed use similar visual elements and concepts in order to invoke a similar set of ideas, the field of game design may change a great extent since the release of the older games. Because of these potential changes, it can manifest as significant differences in game design as the newer games may involve modern design elements not present in the older games [22]. This can be attributed to subsequent advancements made in the field of game design and the use of, what may be considered, outdated design elements could be seen as poor decision despite the intention of emulating these older games, not to mention how improved technology can influence these elements.

This is a key concept to understand with this study. This study is built on the hypothesis that a genre attempts to use certain pre-existing game design elements, which is to say solutions to create the desired gameplay, in order to have a foundation for new ideas, rather than attempt to make direct copies of old game design. While every game used in this study can reasonably be said to be similar to Thief Gold in the regard of being first-person stealth games, none of them can be considered identical to Thief Gold or each other.

When common elements from older games prove to have a lasting impact, this may be interpreted as a successful use of an innovation as it has shown its value to designers and further progresses the field of game design [24].

This is where a key factor in deciding the purpose of this study factors in. It can be noted that the design of Thief Gold has several key design elements that the other games used for this study also make use of. Thus, for this particular genre, we can determine that these design elements have been important. Whether they truly originate with Thief Gold or not isn't entirely relevant when they can still be tied to Thief Gold.

For the purpose of a comparative analysis such as this one, it is important to have a solid foundation for the grounds of

comparison, the decision must be deliberate and not random with a clearly explained rationale [35].

There may also be a complex set of relationships between games that can in many ways be similar in design, ranging from conventional sequels to spiritual successors, which is a similar game deliberately designed to resemble an older game [26].

A noteworthy point of comparison for this study is the deliberate choices to create a game intentionally similar to previous titles. While this may take the form of direct and conventional sequels such as Thief II the Metal Age being a direct sequel to Thief Gold.

Thief the Dark Project itself was not created without direct influences from other games such as Looking Glass' earlier games Ultima Underworld and System Shock which both feature a similar set of design elements in regards to the first person perspective in terms of how to implement controls, with Thief the Dark Project itself forming a foundation for both System Shock 2 and the spiritual successor to System Shock called Bioshock. [36].

This may indeed complicate the concept of the spiritual successor and genre. While Thief itself can be considered a form of spiritual successor to Ultima Underworld along with System Shock, the emphasis on stealth gameplay sets Thief Gold apart from both System Shock and Ultima Underworld. The influence of Thief on System Shock 2 also ties Thief Gold's design ideas into Bioshock and other subsequent games inspired by either System Shock 2 or Bioshock. For the purposes of this study it wasn't possible to include every known instance of inspirational ties, as some games would differ too much from Thief Gold and thus fall outside of the scope of this study.

Direct inspiration with deviation may also be expressed in the form of criticism, in which the changes from the formula and design of the original game is used to subvert the player's assumed familiarity with the conventions of the genre [32].

This provides a point of comparison. If it may be determined that these games share a common source of inspiration, it may be worth noting that they may intend to critique or otherwise function as a response to previous designs. As an example in this study itself, in Thief Gold the player may chose to save the game at any point. In Gloomwood, the ability to save is considered part of the difficulty settings and Filcher will not allow the player to manually save the game. This may be interpreted as the designers considering the ability to save the game at any point to be a detriment to the design of the game.

Games in general can be understood from a constructivist lens, in which games as designed products are always in some domain of existing ideas, be it from within the domain of game design or from without, such as other entertainment industries [33].

If we can assume that every game made exist within a domain of existing material, then we may not exclude the possibility that even concepts that may appear unique or new for the genre of first-person stealth games may indeed have their origin outside of it, rather than being an entirely new concept. While this may be an interesting concept to research, the study must ultimately limit the scope of research. While it may be noted that the origin of an idea may indeed have an external origin from the genre, the concept will be treated as a new concept for the genre in case it cannot be

found within the older games used in this study. While the inventory system present in both Dishonored and Filcher may be found in other types of games, it will be noted as a difference from the other games used in this study rather than a concept introduced from without the genre in order to focus on this particular genre.

The 2014 entry in the Thief series was noted for having several changes to the design from previous entries in the series, many of which resulting in the game being reviewed negatively by critics, such as a decreased complexity [8].

This is an example of an entry in a series, still within the limits of the same genre with similar design concepts, having a significant change in design to the point in which it is considered noticeable.

1.1.2 Stealth and First person

Thief the Dark Project does not have a very realistic concept of guard behavior, instead the guards will act based on whether or not they believe the player character has left the area after having gone into hiding, this design may be seen as somewhat primitive and it is possible to make the behavior more complex [23].

This does not however mean the design is necessarily less deliberate or that the designers were not capable of designing something more complex, it means that the game was designed with less complex enemy patterns than is possible and this could very well be intentional.

Thief Gold is also not the only stealth game to include guards and the various different stealth games in existence, not all of which can be said to have been inspired by Thief Gikd and instead exist before or in parallel to it, may have their own concepts regarding how the element of guard design may be implemented [1].

This study does not assume that every detail games share with Thief Gold are necessarily something that originated with Thief Gold or that changes from Thief Gold were made without other influences. It will however draw attention to the similarities and differences in an attempt to provide possible explanations for why these games may have such similarities and differences.

A common component for the stealth genre to achieve the expected design of the genre is to allow the player to explore the world and find a path which the guard characters will not detect or may in some way be considered a deliberate blind spot for them, this is a common way for the player to progress because it can be deemed intuitive [34].

Another aspect of stealth gameplay is the ability to distract the enemy characters and thus create a new pathway for the player to move across, as to exploit the possibilities within the game to accomplish the set task [7].

In both of these studies previously made on the stealth genre, it is quite possible to notice the expectations and conventions of the stealth genre. It is also important to note the because this study is focused on stealth games played in the first-person perspective, there has able been some references to game design for the first-person person perspective included here.

Games played in the first-person perspective on PC did not always have a uniform control scheme for the mouse and keyboard but eventually converged on a similar control scheme, in particular an important innovation was the WASD bindings in which W is used for forward movement, S is used for backwards movement and A along with D is used for strafing [11].

This is important to note due to the focus on first-person perspective, as it also has several expectation and conventions tied to it, separately from the stealth genre in general due to stealth not necessarily being designed for the first-person perspective.

1.1.3 Narrative

For this study, narrative is defined in terms of how the story is told and what information is being presented to the player about the world. This has been deemed necessary for this study, due to how many of these games rely on correctly presenting such information to the player in order to help them progress.

The relationship between game design and narrative structure can be described as the designers not merely creating a set of rules and obstacles for the player to explore, but also create worlds and stories to explore through careful consideration [21].

What this implies is that if the design of these games are similar, we may also assume the possibility that the worlds depicted, as well as the narratives and stories told within these games could potentially have similarities due to the similar ideas presented in general. An example of such a similarity could be that several stories in these games hinge on betrayal for plot progression. If these games are indeed similar in design and overall mechanics, it may be possible to determine that the narratives of these games are similar as well.

In order to immerse the player with the world of the game, the designers may use the mechanics and certain visual elements in order to allow them to understand the situation they are in, as well teaching the player what the limits are of the player character and making the player's agency limited, which creates a narrative understanding of what the designers are attempting to convey with the game [12]. In particular there may be enemies which cannot be defeated or the expected control may be removed in order to communicate the danger of the situation [12]. Mechanics may also be used to influence the player's decisions, this may be useful in case the game is intended to make these decisions seem hard from a narrative standpoint, such as being forced to leave behind allies [9].

For this study it is a very important concept to understand. The games used in this study often require the player to memorize the layout and explore it in order to make progress, as well as the need to collect context clues in order to understand the narrative and objectives.

A way of constructing narratives in game design is to give the player a form of resource management and skill requirements so they may understand the situation the game is presenting, which could result in the same game allowing for different experiences depending on how the player performs, while still allowing the player to be in control they may learn to play the game using the existing resources [5].

1.2 Methodology

In order to properly compare these games, a number of necessary qualifiers have been established to ensure clear grounds for comparison [35]. This done by first determining them to be part of the first-person stealth genre, which is determined by them being playable in the first-person perspective, and clearly communicate the element of stealth as the primary option to progress. This can be considered to align with how genre may be defined through shared design elements [3,6,10]. Statements from developers have also been used to establish inspirational or other direct connections [14,16,20,37,38], which could also be used to establish these games as being categorized as spiritual successors, which are intentionally similar games which are not part of the same series [26]. In addition, each game have also been played on a Windows 11 computer with a keyboard and mouse set-up in order to ensure a high enough level of similarity.

The individual games can be considered as having undergone a formal analysis, which the researcher has spent time observing and understanding the way in which they function [25]. This can be seen as the primary method used in collecting and analyzing data.

To clarify the concepts used in this study which may require further explanation, there is a difference between core gameplay and core mechanics. Core mechanics refer to individual elements the player can use, in the case of this study, a mechanic used in all of them is hiding from enemies. Core gameplay refers to how the game is designed to be played, in this case it refers to how the player is lead to use the mechanics within the game to make progress. These terms are connected but to keep the definitions clear, core mechanics can be considered individual actions the player can take, while core gameplay refers to how these mechanics function as part of the singular design.

The way in which the data collected for this study was documented was through video recordings of the individual games. Each game was played at what may be considered the medium difficulty to completion, though the other difficulty settings have been noted and described. Once a game was played to completion, the recorded video was used to ensure the observations made were not incorrectly described in the study. The entire study was executed by a single researcher without other participants or informants, the reason for excluding them is because they would be required to be familiar with every game used in this study, either through previous experience or by being assigned to play the games throughout this study. As this study was expected to be completed within one semester, the inclusion of participants and informants was deemed impractical and could have delayed the progress.

Each game has been played through and the core gameplay along with other noteworthy details have been documented. This approach may be deemed similar to Altheide's description of ethnographic content analysis, in which content is analyzed for how it is designed and how the message is communicated [2]. Once these elements were noted, they were categorized for analysis. These categories are in regards to the core stealth elements, how combat is employed, how the player navigates the environment, the sound design, the tools the player is presented with, the narrative within the games and the difficulty settings. The reason behind these particular categories of gameplay

elements were decided upon to be the basis for analysis due to the similarities and differences which could be observed.

1.3 Important qualifiers for games

As these games are indeed required to have a significant amount of similarities in order for the comparison to be made, they need to follow certain requirements in their design in order to qualify for this study. These requirements are based on how the original Thief Gold was designed how it was played.

The first requirement is that every single game in this study must be primarily playable in the first-person perspective. This is because Thief Gold is entirely played in the first-person perspective. While some games used here, such as Thief Deadly Shadows allows an optional third-person perspective or might feature a shift to third-person in some section, they must be playable in first-person primarily. The reason for this is to more properly allow for direct comparisons and scale down the amount of candidates considered for the study. Even if these games may be stated to have been using Thief Gold as an inspiration, it is important to note that the decision to not make extensive use of the first-person perspective is a very clear deviation from the gameplay of Thief Gold.

The second requirement is that all of these games must communicate stealth as being the primary option for making progress, rather than combat. This is to exclude games that may use stealth to some extent but aren't necessarily designed around it as the primary feature of gameplay or may only be presented as an alternative to combat rather than the core of the game's design. A game which is part of this study, Dishonored, does allow the player to engage enemies in combat as an alternative to stealth. The reason for the inclusion of Dishonored is that Dishonored still communicates to the player that engaging in stealth gameplay is preferable to combat and that combat will have negative consequences on further progress. All games used for this study can in some way be demonstrated as guiding the player towards the use of stealth rather than presenting it as merely optional.

The third requirement is that every single game included must make use of keyboard and mouse as the input. While some games can be played with controllers, the option to use mouse and keyboard must exist by default. The reason for this requirement is that Thief Gold was released as a Windows exclusive game and still is, with no official support for alternative inputs. The reasoning is that default key mapping can be directly compared as a result and thus the decision to have different mappings can be analyzed. If any game included in the study was only playable with a controller or something other than a keyboard and mouse, the difference in controls would be forced by a different input method, rather than a deliberate choice by the developer.

1.4 Potential problems which need to be addressed

Thief Deadly Shadows cannot be played correctly on Windows 11 without the need of an unofficial modification. This differs from the other games used in this study and no other games will use unofficial modifications and were played only making use of files from the official source. This is because modifications may radically alter the design or a game and this is best avoided when analyzing the intended design by the developers or publishers. Not

all of these games may be identical to the initial release due to patches and other alterations made by the developers and publishers since the initial release, such alterations are still made within the designer's work and are not created by someone outside of the development team. While other games used may not be designed for Windows 11, Thief Deadly Shadows is unfortunately impossible to play past the tutorial level without the need for a modification because the mechanics of lock picking and ladder climbing cannot function correctly on Windows 11. The ability to play each game to completion is necessary for this study, as it would allow a more complete view of the content. As such, in order to be eligible for this study, a modification has to be installed. The modification used is "Sneaky Upgrade 1.1.10" by snobel on Mod DB, which aims to make the game more compatible with Windows 10 and Windows 11 [39].

None of the other games included in this study were given any unofficial modifications and Thief Deadly Shadows was only modified due to the inability to play the game without the modification. The choices by the developers in terms of level design and gameplay are largely unaltered by the modification and thus can still be examined. Any additional features of the modification, such as the option to play the game in a higher resolution than is possible by default, will not be examined for the study due to the lack of developer input.

The game Gloomwood was in early access during this study and it is important to note that the game could be altered by the developer in major ways while this dissertation is being written. For the sake of full clarity it is important to note that the version of the game played was "version 0.1.222". A problem with this is that some design elements need to be speculated upon, as the implementation may not be entirely clear as to how they would function in future builds of the game. As an example, the game does feature a monetary system, which implies the player character could exchange currency for some purpose but the version used for this study does not have any way of making such transactions, thus what the currency may be used for is currently unknown.

Bioshock Infinite Burial at Sea Episode 2 is downloadable content for the game Bioshock Infinite and is thus not considered a standalone game itself. The reason for including the downloadable content only is because it is the only part of the game that qualifies as stealth based. While much of the analysis while focus on the DLC itself and will generally avoid the main game itself, some mentions of the main game may be necessary in order to understand the context. The gameplay of the main game will not be analyzed but story elements and acknowledgments of elements inherited from the main game might prove necessary to address due to some reliance on it.

2 Analyses of individual games

This study is based on seven games that have been determined to belong to the first-person stealth genre. Each of them have been played on the same computer using the Windows 11 operating system. Each of them have been determined to follow the criteria listed. The earliest game released is Thief Gold [27], which is the second edition of Thief The Dark Project. Thief II The Metal Age [28] and Thief Deadly Shadows [19] are both direct sequels to Thief Gold and build directly upon the system in Thief Gold. The games Gloomwood [31], Filcher [17] and Dishonored [4] have

some officially stated inspiration from Thief the Dark Project and may thus be considered directly inspired by the Thief series. Bioshock Infinite Burial at Sea Episode 2 [20] has not been directly stated to be inspired by the Thief series or any other particular game, though it does share a common creative director [14]. Even if no official statements were to exist regarding the inspiration, these games still follow similar design principles and would still be worth comparing on the basis of similar design. Despite the similarities, they do not have identical gameplay and the differences are useful for directly comparing in order to understand why they would differ despite the similar core design.

The reason for giving these game individual analyses is to establish how these games are designed in isolation of each other. While much overlap does exist and is examined in this study, it is necessary to establish what is in each game before the comparison can be made, otherwise it may not be entirely understood why the similarities and differences are significant. They had to first undergo a formal analysis [25] to establish how they functioned individually and then a comparative analysis [35] was used to determine similarities and differences, these two parts need to be presented separately to be comprehensive.

2.1 Thief Gold

Thief Gold is the second edition of Thief the Dark Project, a windows exclusive game originally released in 1998 and developed by Looking Glass Studios [27]. Within the analysis this study and when other direct references to this game are made, it is referred to as Thief Gold. Any instances of the game being referred to as Thief the Dark Project are references to studies, interviews or other documents which used that particular edition. The edition played for this study was Thief Gold and is thus referenced as such whenever it is being directly referenced. The reason for not using a single title is because it was deemed necessary to establish which edition was played for this study and which edition the references of this study used.

It is to be noted that the first sequel to this game, Thief II the Metal Age, does not alter the gameplay much from this game and thus much of what is described in this section also applies to Thief II the Metal Age unless described otherwise.

The game is played exclusively in the first-person perspective and emphasize stealth over combat, though a combat system does exist within the game. The Combat system make use of a sword and it is possible to hit the enemy from different sides depending on where the mouse is placed. The strikes are slow and a single enemy can drain the health of the player quickly, which is why it is not recommended to use combat over stealth.

The game does not use the common WASD [11] set-up by default, instead the default key bindings have a variation of it in the player moves slower with S and backwards with X, while A and D are used for turning rather than strafing, Z and C are instead used for strafing [14]. Though it is possible to alter the key bindings to anything the player wants and the version released on GOG does include pre-set WASD key bindings as an option.

An option to eliminate enemies is to use the blackjack to knock them out from behind, though this requires the player to use stealth and the black jack will not be useful in direct combat. If the player is discovered, the options are to either engage in combat or to flee. If other enemies are nearby, they will call for

help which will make escape a better option. If the player managed to escape and successfully hide from the enemies, they will stop searching and the player is once again allowed to move freely.

The game is segmented into missions, in which the player is required to complete a set number of tasks in order to complete. The tasks are dependent on the difficulty setting and will usually include obtaining an object. Each mission has a briefing on what the core objectives are in a cutscene. The game will allow the player to use money obtained in the missions to purchase items in between missions, this can make the player finish the mission more easily as the items may be used more frequently. The money itself is obtained by stealing valuable items throughout the missions.

The game does not feature an autosave function and each time the player must save the game manually. This can be done at any point during a mission though not in between missions, though the player does have the option to restart the mission, which is a feature which could have been included to mitigate poorly selected save points.

The stealth system is based on light and shadow, the darker an area is, the less likely it is that the player will be spotted by an enemy. The exact level of visibility is determined by the “light gem”, an indicator at the bottom of the screen which turns a bright yellow color when the player is fully visible to the enemies and black when the enemies can’t see the player at all. Light sources in the game, such as torches, can be unlit under certain conditions such as dousing them with water arrows.

The missions often come with a map of the area to be explored but the maps tend to be incomplete or inaccurate, because they are designed from an in-universe perspective from characters who have only made observations and are not aware of the full layout. There is a compass that will help the player navigate the map, which will highlight the current placement, meaning the player may still be able to locate the position of important objects. The compass itself is manually selected like any other tools in the game and thus can’t be used at the same time as any other tool.

As an alternative to combat, the player may cause enemies to pass out with the help of certain tools, such as a blackjack or a gas arrow. If forced into combat, the player will be more likely to take hits from the enemies. A dead or unconscious body can be discovered by other enemies in the game, so in order to avoid this, the player may carry them to a spot where they are less likely to be discovered, either in shadow or far from the patrol routes. Each mission will have a map and a compass to help the player navigate the area, however, the maps will often resemble incomplete notes and are often deliberately incorrect. This will force the player to make use of memorization of the layout in order to properly navigate.

If the player jumps directly in front of a ledge, the player will automatically climb on top of it. This will only happen if the ledge is visible in neutral position or below the field of vision. If the ledge is above the neutral field of vision, the player cannot climb it.

The bow is a tool that can be used for combat but the draw is slow and only the broadhead arrows will function as lethal weapons. The bow can be used as a tool depending on the

ammunition used. Water arrows can be used to douse flames and thereby the light produced. Fire arrows can be used to light objects on fire. Moss arrows will produce a soft surface which muffles sound. Gas arrows produce a sleeping gas that will pacify any opponent in the gas cloud. The Rope arrow will add a climbable rope for the player to reach areas that cannot normally be climbed. The Noisemaker arrow is used to distract enemies from the player.

The official manual for the game specifically states that the game is not designed around combat and recommends avoiding combat with multiple enemies at the same time. The recommendation is to move in shadows, stand still as often as possible, avoid keeping weapons drawn and stock close to walls. Another recommendation is to stick to quiet surfaces and listen to when the guards are around. The manual also recommends trying to stay above the enemies to avoid detection and knocking out guards in order to even the odds [14].

The inventory cannot be viewed in a menu and will require the player to scroll through the items in order to be seen. The non-combat items are shown in the lower right side of the screen while combat items such as the sword is shown on the left side.

While it is possible to collect keys to unlock certain doors, an alternative to finding them is to pick the locks. This is accomplished by alternating between two lock picks and holding down the left mouse button with each in front of the lock, until the lock opens.

The game is set in a fantasy world superficially similar to medieval Europe, but has several deviations from a realistic medieval setting such as electric lighting. The game is primarily set in a city state called “the city”, built on top of an ancient city and has several other ruins around it. The apparent state religion of this city are called the “Hammerites” and worship a deity called “The Master Builder”, who allegedly gifted mankind with the tools to build civilization and reject another god called “The Trickster”. The story centers around the thief Garrett, a man trained to keep himself hidden by a secret society called the “keepers”, who claims to be in possession of several prophetic texts. Garrett is hired by a man named Constantine to steal a magic artifact called “the eye”. Once this item has been obtained, Constantine reveals himself to be “The Trickster”, an ancient god seeking to destroy human civilization. He tears out Garrett’s eye and leaves him for dead but he is rescued by the Keepers and sets forth on a quest to get revenge on the Trickster. Once this has been accomplished, the keepers tell him that he was expected to stop the Trickster due to prophecy and warns him of further dangers.

2.2 Thief II the Metal Age

Thief II: The Metal Age is a direct sequel to Thief Gold by Looking Glass Studios which was released in 2000 [28].

The is very similar to Thief Gold and the majority of described features in Thief Gold are present in Thief II the Metal Age with minimal or no changes. As such, unless it is noted in this analysis of Thief II the Metal Age, the same description of Thief Gold will apply to Thief II the Metal Age as well. The core gameplay regarding the stealth is very similar and the core mechanics have not changed much from Thief Gold.

As a direct sequel released by the same developer, the game does not change the mechanics much and even has very similar graphics, much of how Thief Gold is described applies to this game as well. The mission structure, the lock picking, the difficulty settings and the use of Money in this game is identical to how they were in Thief Gold. The game still operates on the same logic of sound design and light and shadow stealth as the previous game. Several tools, such as the lock picks and rope arrows, function the same way as in the previous game and there isn't a functional difference in the returning tools. However, the game does contain new tools not present in the first game. This does for example include magic potions such as the invisibility potion, which will temporarily turn the player undetectable to the enemies, as well as slow fall potion which allow the player to descend from tall heights without taking falling damage.

According to the manual, many of the recommended strategies from the previous game still apply to this game [15]. This is indeed correct in practice and the general gameplay does not differ from Thief Gold. The light gem is still part of the game and the same light and shadow mechanic is unchanged. The addition of new tools is essentially the only important difference between these two games aside from default controls. Default controls use the common WASD controls instead of Thief Gold's set-up, though the option for Thief Gold's key bindings do in fact exist.

An addition to this game is the inclusion of the mechanical eye. The Mechanical eye can be used to zoom in the view and interact with "Scouting Orbs", which are portable cameras which allows the player to see objects outside of normal vision.

The story continues from the previous entry, in which the Keepers warned Garrett that the "Metal Age" was coming. A splinter faction of the Hammerites, called the Mechanists, have been increasing their activity since the events of the previous game, installing new machinery in various sectors of society. Garrett is once again recruited by the Keepers because they have seen signs of the Metal Age Prophecy being fulfilled. Viktoria, an ally of the Trickster, helps Garrett investigate the leader of the Mechanists, Karras. Karras intends to turn all living beings into a rust-like substance with a gas he has invented and plans to use robots to spread it. Viktoria attempts to seal Karras in with the gas but dies in the process, leaving Garrett to finish the rest of the plan. Once Karras has died of his own gas, Garrett once again talks to the keepers, who confirm everything seen in the game was prophesied, something that interests Garrett.

2.3 Thief: Deadly Shadows

Thief Deadly Shadows is the third entry into the Thief series, which was developed by Ion Storm and released in 2004 [19]. For the purposes of this study, the needed to be modified using an unofficial modification, rather than relying on the official patches [39]. This is because the lock picking and ladder climbing mechanics did not function correctly, both of which are required to work properly in order to progress. The game is not altered beyond some resolution alterations and corrected game mechanics, the missions and assets themselves are still the same as they would be if the game had not been modified. The only purpose of installing the modification was only to make sure the mechanics worked properly. Had the game functioned properly on Windows 11 without any modifications then the modifications would not have been included.

The game differs from the previous entries in the series because the player is not required to only play it in the first-person perspective, as there is an optional third-person view. It is important to note that the feature to enable the third-person perspective is optional and the player does not have to enable it. Because the feature is only optional, Thief Deadly Shadows does still qualify as a first-person stealth game.

Default controls use the common WASD bindings as in Thief II the Metal Age.

According to the manual, direct combat and moving loudly are both discouraged while attempting to stay out of sight by hiding in shadow or behind walls is encouraged [40]. This is correct in the design of the game itself.

Lock picking is accomplished by rotating the pick using the mouse around a set of rings. The objective is to locate a spot at which the outer most ring shakes open a gap and hold it there until the gap widens and moves to the right side, at which point the next ring is subjected to the same process. Alternatively the player may find a key to open the lock.

The game makes use of the city as a hub world from which the player may visit shops and enter areas where the missions take place, rather than just buying the tools in between missions. The inventory can now be accessed in a menu and no longer require scrolling for an overview.

The compass has been placed around the light gem which no longer makes it necessary to select it in order to navigate. The maps still function the same as in previous entries in the series and still tend to be intentionally incorrect.

The Story of the game centers around how another prophecy by the keepers have been uncovered, one about a coming dark age. The interpreter for the Keeper prophecies is found murdered and Garrett is blamed by the current leader of the Keepers for this act. Garrett investigates the murder to discover who the actual murderer is, while the Keepers are arranging for a child named Gamall to become the new interpreter. The person actually responsible is Gamall, who is a monster called "The Hag" disguised as a child and her intention is to take control of the magic behind the prophecies in order to remain immortal. Garrett subsequently destroys the magic, which prevents the Hag from achieving immortality and the prophecies vanish along with it. The game ends with an epilogue, in which a child attempts to steal from Garrett, a scene which is very similar to how Garrett himself was introduced to the Keepers.

2.4 Dishonored

Dishonored is a game released in 2012, developed by Arkane Studios and distributed by Bethesda [4]. The games does not make use of a light and shadow system as many of the missions may indeed take place in broad daylight and the visibility of the player is instead determined by an indicator above the enemies heads which shows the level of awareness they have. The game differs from Thief Gold in the sense that the maps used for navigation tend to be more accurate and make use of quest markers. A tool used in the game called "The Heart" is used to locate bone charms and runes, which are used to obtain and tweak magic powers, it does this by adding quest markers which are only visible when using it. Alternatively, the player may also use Dark

Vision, on the magic powers that may be acquired during gameplay, on order to locate items.

The game was either going to be an installment in the Thief series or based on the film Blade Runner, but the publisher failed to acquire the license after work on the game had already started [38]. As such the game shares similarities to the Thief series due to being developed under the assumption it could be part of it. This does confirm a direct link to the Thief series and Dishonored may fall into the categorization of spiritual successor.

The controls of the game use the common WASD bindings and the tools and magic powers are selected using an inventory wheel, by which the mouse is rotated while the menu is open to select the tool.

The game makes use of a mission system similar to Thief Gold, in which the player is given a certain number of tasks that need to be completed in order to finish the mission. These are not dependent on the difficulty setting and will remain the same regardless of which difficulty setting the game has been set to, though accomplishing the goals may prove more difficult to accomplish on higher settings.

The game has a mana system in which the player makes use of magic powers in order to progress throughout the game. It is worth noting that only one of these magic powers are required and most missions will not actually require their use. The only magic power the player is required to obtain is the first level of Blink, a short distance teleportation skill. The only instances where this ability is required is when it is obtained automatically early in the game and during the escape from the Whaler's captivity, which occurs close to the end of the game. Most of these powers aside from the first level of Blink can only be acquired through the use of Runes, which need to be located within the different missions. Some of the powers do not consume mana and as one of them include an upgrade to the health, a possible explanation for this is that the effect may have been deemed minor enough for the power to be deemed useful if it consumed mana. It is not possible to obtain and upgrade every power in a single playthrough and the player must make a choice as to which power they want to obtain. The majority of these powers will consume more mana than can be regenerated and thus, while the powers may indeed make the stealth much easier, the player will still be limited in how many times they may use them. While Piero's Elixir is an item that will replenish lost mana, it is important to note that the player can only ever carry ten of them at a time.

When upgraded, Blink will move the player further than previously but will still have limits to force the player to not rely on it entirely. Like many others of the magic powers in the game, using it rapidly will drain mana faster and if they fail to replenish it, then the power will become less reliable for the player to use.

The game features money which is obtained by finding or stealing valuable items throughout the missions. The money may be used to obtain new items and upgrades to the arsenal. These include a zoom function, muffled boots, greater ammo capacity.

It is not possible to pick locks and locked doors generally have to be opened by finding the keys if the player does not want to make loud noises. Alternatively some doors may be destroyed with the help of certain tools or powers in the game, though these are likely to attract attention.

The game Discourage the player from using lethal force on the enemies and other non-player characters by the use of the Chaos System. If human characters as a result of the player's actions, this will increase the total chaos in the game's setting and thus alters some mission parameters. An example of this is how an assassination target towards the end of the story will simply be found in his bed chamber with minimal security in low chaos, while in high chaos he will instead be found in a panic room.

Noise will alert non-player characters, this includes certain weapons such as the pistol and the grenades, meaning the player may need to carefully consider their use. The player may use sound as a distraction in order to lure enemies away from a position where they would be spotted. This can for example be done by throwing a bottle which will break upon impact.

In between the majority of the missions, the player will be entering the "hound pits pub" in which they have the ability to purchase inventory items and upgrades to the inventory before starting another mission. These segments in between missions also contain story related scenarios which reveal the plans of the central characters in the story.

The game is set in the city of "Dunwall" capital of Gristol, the ruling state of an island empire. The player character is Corvo Attano, the Empress' body guard. The Empress is assassinated by the order of her Spymaster in an attempt to cover up his attempt to quietly get rid of the poor through a plague he introduced to the city. Corvo is used as a scapegoat for this assassination, as the real assassin, Daud, had magic powers that allowed him to disappear right after killing her. The Spymaster abducts the daughter of the Empress, Emily Kaldwin, to consolidate his power and Corvo is sent to prison, awaiting execution. He is then aided to escape from prison by Admiral Havelock, leader of a conspiracy claiming to be loyal to the true lineage of the empire and aware of what happened. Corvo is assigned to sabotage the Spymaster's occupation of the throne by assassinating his key allies. Throughout the story, Corvo is contacted by a god called the Outsider, who grants him magic powers similar to Daud's and judges his actions. Once the Spymaster is defeated, Corvo is betrayed by the loyalists and left for dead, as they attempt to take control of the empire themselves. Corvo tracks them down to their new island fortress, where it is revealed that they betrayed each other shortly after he was left for dead. Depending on the choices the player made throughout the story, Corvo will either reinstate Emily as the empress and help cure the plague, he will reinstate her but the damage caused by the events of the story can't be repaired or he will fail to rescue Emily and the city will collapse.

2.4.1 Dishonored: The Knife of Dunwall and The Brigmore Witches

The Knife of Dunwall and the Brigmore Witches are two sets of DLC, short for downloadable content, which form a complete story. The gameplay is largely unaltered from the base game though some of the magic powers are different. As an example, Blink is different from the base game in that it stops time while the player is selecting the destination of the teleportation. There are also some direct replacements, such as how the player is able to summon an assassin to aid them in combat instead of a swarm of rats. However, these additions and alterations do not make for major deviations in the general gameplay and it is still essentially the same system as in the main game. Thus, the majority of

observations made about Dishonored's main game still apply to these sets of DLC.

The system for purchasing upgrades and tools are slightly different from the main game, as these purchases occur right before the start of the mission, rather than in between the missions.

The story revolves around Daud, the assassin who killed the Empress in the base game. After this assassination, Daud is contacted by the Outsider who tells him to investigate anything relating to the name "Delilah". Worried about what this might mean, he finds a whaling ship called the Delilah, which a barrister had named after his former mistress. Delilah is revealed to be a witch who intends to use the situation of the power struggle to gain an advantage in a way not initially made clear. In order to travel to the hideout of her coven, Brigmore manor, Daud hires the gang leader Lizzy Stride to transport him there. As he investigates the manor, he discovers that Delilah instead to possess Emily Kaldwin in order to sit on the throne of the empire through her. At this point, Daud may either kill Delilah or trap her in the void, the latter of which is considered canonical in Dishonored 2. Much like the base game, the chaos system will determine the ending and does not factor in choices the player made the main game. In a low chaos ending, Daud will be confronted by Corvo who spares him after winning a fight. In the high chaos ending, Corvo will slit Daud's throat and toss him from a tall height.

2.5 Bioshock Infinite Burial at Sea episode 2

Bioshock Infinite Burial at Sea episode 2 is a DLC campaign for Bioshock Infinite. There are no known statements from the developers confirming a link to Thief Gold or any other first-person stealth games used in this study, though Ken Levine is credited for "Initial Design and Story Concepts" for Thief the Dark Project [14] and credited as "Lead writer" and "creative director" on Bioshock Infinite Burial at Sea episode 2 [20], so they do share a common leading member of the development team. The name of the highest difficulty setting, "1998 mode" may also be a reference to the release date of Thief the Dark Project [14].

This DLC requires the player to navigate across a single large area, the Fontaine Department store, in order to locate specific items in order to gain access to a second area called Fink Industries. Once the task in Fink Industries have been completed, the player will return to Fontaine Department store to make it through a war zone to complete the game.

The game uses the common WASD bindings and there are two inventory wheels used to select weapons and plasmids, in which they are opened with separate keys and the mouse is rotated to select the desired item.

In this game, the player can make use of four "Plasmids", a type of power using a mana system, here referred to as Eve, which depletes and can be replenished only through the use of refill items, in order to avoid detection and flee from enemies. Eve will not refill automatically and will require the player to find items which replenishing it. There are four plasmids in the game, Peeping Tom which allows the player to see through walls and become invisible to the enemies, Possession which allows the player to make enemies and machines work in favor of them, Old

Man Winter which allows the player to freeze enemies solid and allow the player to move past them and Ironsides which deflects bullets. All of these plasmids are used in passive or defensive ways.

The game has a weapon called the air-grabber which is used to knock out enemies from behind, which will only have an effect if the enemy is unaware of the player. The air-grabber may also be used to attach to hooks placed high up at various locations to quickly reach higher areas, the player must also detach from the hook quickly in order to avoid creaking noises which will alert the enemies. The key weapon in the game is the crossbow, which may be loaded with either sleeping bolts that pacify a single enemy, gas bolts which pacifies multiple enemies or noise bolts which can be used as a distraction. This crossbow is used in all difficulty settings and it is only the lethal weapons which are removed from the highest difficulty setting. The lethal weapons include a shotgun and a hand cannon which act as regular firearms and will attract enemies with the noise they make.

Locks can be picked though this is not an alternative to finding keys, as keys do not exist outside of one specific door and other locked doors which can be opened without lock picks are instead sealed with a numeric code. Each door which has a lock will require a set number of lock picks to open and the mini-game to open the door has a pick randomly move across the pins, when a button is pressed the pick will hit one of the pins. White pins will simply open the door, blue pins will reward the player with a noise bolt and a red pin will trigger an alarm which attracts enemies.

Money can be scavenged from dead bodies or found laying around. This can in turn be used to purchase ammo, lock picks and healing items. These items can be purchased from vending machines found in many different locations. The fact that lock picks can be purchased at almost any time may be the reason regular door keys are not in the game.

Throughout the game several characters have left behind audio diaries in which they explain what they have done before the events of the DLC and what they are planning to do afterwards. Some of these may provide clues for progressing, such as containing door codes, while others merely expand upon the story.

The plot follows from the previous DLC, Bioshock Infinite Burial at Sea episode 1, and the main game. Bioshock Infinite Burial at Sea episode 2 is primarily set in the Fontaine Department store, a department store which has been repurposed into a prison for the underwater city of Rapture and sunk below it to prevent the prisoners from escaping. The majority of the prisoners are what are called "Splicers", drug addicts who have acquired a disease which causes insanity and deformities, brought on by a drug called "Adam". Elizabeth has tracked down and betrayed a man named Comstock as revenge for accidentally killing an alternate reality version of herself. She wakes up next to his corpse and a rebel named Atlas has found her. Elizabeth promises to help Atlas flee his prison in exchange for a girl Elizabeth used to bait Comstock into a trap. Her promise involves the claim that she is the lab assistant of a man named Yi Suchong and that she may contact him in order to raise the prison from the ocean floor. This claim is directed to her from a vision of her now deceased father, Booker DeWitt. It is quickly revealed that Elizabeth has reentered this reality after having already died there,

making her lose all her precognitive and reality warping powers, and “Booker” is just a manifestation of her fractured memory of knowing how to complete her task. She finds Suchong’s lab where it is revealed he has knowledge of alternate realities, in particular the setting of the main game, Columbia. This is because he is in possession of a device capable of opening portals to other realities, which has now been sabotaged. In Columbia, there a device which can allow the prison to rise and she formulates a plan centered around this device. Elizabeth offers to repair the portal device to Suchong which he accepts. Once the device has been repaired, Suchong traps her in Columbia until she has obtained a hair sample which Suchong believes will help in his research. This hair sample is revealed to be her own from when she was a child and the interest is for Suchong to perfect emotional bonding technology. Once she returns to the Prison, she is forced to go through an active war zone to raise the prison and once she has, Atlas betrays her and she is tortured for several weeks in order gain information she does not have. She eventually has another vision that leads her to Suchong’s other lab where the information Atlas wants is stored. Once she has obtained this, Atlas betrays her once more and lethally strikes her head. In her dying moments, it is revealed that the information she gave him will result in his own death and the subsequent liberation of the Little Sisters in the original Bioshock.

2.6 Gloomwood

During the course of this study, Gloomwood has been in early access and the version used was 0.1.222 [31]. It is important to note that future builds of this game could feature very significant changes from this build. Thus it is to be noted that the features discussed may not apply to future builds of the game.

According to Dillon Rogers, the game was inspired by Thief the Dark Project, although he started working on the game before playing Thief the Dark Project and realizing how useful the design would be for his own project, other inspirations include Resident Evil [37]. Like Thief Gold, the game is played entirely in the first-person perspective and emphasizes stealth over direct combat.

The game uses the common WASD bindings by default though adjustments can be made.

Gloomwood uses several large interconnected areas that may be revisited as the player progresses. It is possible to open up new pathways to previously explored areas in order to make backtracking more simple. For example, once the player reaches the lighthouse, they will find a code for a safe located near the starting area of the game. In order to reach the lighthouse, the player had to walk from the fishery, into the mines, by the shore line and past the tavern. However, it is possible to open shorter paths on the way back, meaning the lighthouse will be directly connected to the shore and the shore in turn directly to the fishery.

The game makes use of a light and shadow system. In order to help the player determine their exact visibility, the player character wears a ring on his thumb containing a light gem which glows in the light and darkens in shadow. The difference between a safe shadow area and a dangerous well lit area can often be seen though light sources hitting large objects which cast shadows, clearly communicating where to hide from the enemies.

Noise will alert the enemies in the game if they are close enough to hear it. The player can for example lift a glass bottle

and throw it which will upon impact create a sound the enemies will investigate. The game includes two weapons, the pistol and the shotgun, which make noise upon being fired and will in turn cause enemy characters to approach the player, making their use somewhat discouraged and seemingly meant to be used when very few characters are around.

The save feature of the game is tied to the difficulty level of the game. If the player makes the choice to play the game at the lowest difficulty level, they are allowed to save the game at any point they choose, effectively emulating the save system in Thief Gold. On the next two difficulty settings, the game will allow the player to save the game as often as they can, but will only allow this in specific areas, which will require the player to backtrack if they don’t reach the next save area before needing to save the game. On the highest possible difficulty setting, the game still makes use of the save areas but will also require the player to use “Wax Cylinders” in order to save, these cylinders are single use items that need to be found throughout the game, which limits the number of saves based on how many of these the player managed to collect.

Money is in the game but is not used in this build, instead it is collected with an indicator in the inventory showing how much has been acquired. What the purpose of money is in this game is still unknown. It is possible that it may be used to purchase more supplies so that the player will not be forced to rely entirely on finding supplies. Shops and a market district are mentioned throughout the story and it is possible that a use for the money will be introduced in later builds through these shops.

The game also features a sanity system, which is presumably intended to show the player character have a decrease in mental health. However, nothing in this build of the game appears to cause this effect as of yet. The feature is shown in the journal alongside money and notes found throughout the game. It is unknown how the sanity system may impact the gameplay in future builds of the game and is noted here as part of the current build.

The game will often have locked doors which can be unlocked with keys that can be pick pocketed from enemies or found elsewhere. If the door is made of wood, the player can either destroy it themselves or trick an enemy into destroying it. Metal doors cannot be destroyed and must be opened with a key, though an enemy with a key may also open the door themselves if they suspect the player is hiding behind it.

The inventory makes use of a suitcase in which the items take up a certain number of slots. Because of this, it is impossible to carry every item the player finds. For example, the player can carry several empty glass bottles in order to distract enemies but this will also prevent them from carrying more ammunition for their weapons. As a result, the player may be forced to discard several useful items.

The setting of the game as of this build, is a coastal area outside of the city of Gloomwood itself. The starting area is a fishery in a small town of buildings in disrepair. The inhabitants are a group of sickly people with glowing eyes and misshapen hands called “The Huntsmen”. The story is incomplete as of version 0.1.222 and it is not possible to enter the city itself. The story revolves around a man simply referred to as “Doctor”, who

has been abducted and imprisoned by the Huntsmen so that he may be brought to a countess. Before they can make the necessary preparations, a man with a mechanical eye opens his cell door and instructs him to meet him at a lighthouse. The Doctor navigates through a mine containing feral dog-like creatures with fish-like features, seemingly the pets of the huntsmen. Further exploration leads the player to an optional tavern area in which the Huntsmen have captured a large goatman which they have failed to control and will kill on sight. The player eventually reaches the lighthouse where the man with the mechanical eye has left a prerecorded message telling him to meet him at his shop in the city. He also warns the player not to look into a mirror, if the warning goes ignored, the countess will appear in the mirror and invite the doctor to take a carriage to her home. This is where the story stops in version 0.1.222.

2.7 Filcher

Filcher was released in 2021 by Mythologic Interactive for windows systems, the developer of the game is Johan Hjärpe [17]. The game features a 3D environment but the characters and some of the objects are made use of sprite graphics. The game also does not have any voice acting beyond grunting and relies entirely on text for communicating dialogue.

According to Johan Hjärpe, the developer of the game, it was directly inspired by the original Thief and Deus Ex, along with several other pieces of media that inspired it [16]. While for this study, only direct comparisons to Thief Gold and the other games used in this study are only referenced in the comparison, it is still worth noting that other influences do exist and have been acknowledged by the designer himself.

The setting and plot of the game did change several times throughout the development and did not use the noir influenced setting from the start [16]. The aesthetic is consistent in the final release of the game and the cutscenes use comic book panels to convey the story rather than animation.

The game has the common WASD key bindings by default though this can be adjusted.

The player may collect keys which are all placed in an item called the key ring. This key ring does require the player to manually select keys and doors will automatically open when the correct key has been acquired. Alternatively, the locks may be picked though this does not work on every door in the game. This is accomplished by hold the lock pick to the lock until the sound of the door being unlocked can be heard. Some doors are instead opened by a key code which must be located within the mission.

Filcher does not allow the player to save manually and only auto-saves at the end of each mission. This means every mission in the game must be completed in one sitting and failure will result in the mission starting from the beginning every single time. The game also does not feature an easily accessed map and there may only be shown simple rough map at the mission briefing, though this is not always the case and mission briefings may only give vague hints to the layout of the mission area. As compensation, the areas explored are typically small and can be navigated very quickly.

While money does exist in the game, it does not have a function beyond being a mission requirement. The player is not

able to purchase new items or expand upon the inventory between missions. The money primarily seems to be a form of player record, rather than any practical use in the gameplay.

Each mission will always have a set amount of items the player will start with and everything else must be found within the mission to expand upon the inventory. The game does not include healing items in the inventory, though the player may find some in the missions.

The player is very limited in their ability to interact with the world. It is not possible to climb obstacles, move most items or swim in order to aid in progression. It is possible to climb ladders or crouch in order to access additional pathways but those are the only options beside walking and jumping that are possible. As a result, the player will be somewhat limited in their ability to find or create alternative pathways in comparison to the other games used in this study.

The sound of the enemies moving is used to determine their location and will allow the player to move once they can determine that the enemies have walked away from them. The player will make noise themselves by walking and some surfaces will make louder sounds than others. In order to avoid this, the player could hold in the sneak button to move more quietly. The game is not voice acted beyond characters grunting and dialogue is done using text.

Lock picking is achieved by selecting the lock pick and holding the left mouse button on the lock. By holding in the button the player will eventually unlock the door but can't move away from the door or else it will reset. Alternatively the player may instead find a key to unlock the door and this may be required as not all doors in the game can be lock picked.

The game is set in Fensbrook, a city which is stated to be located in northern Europe but the country is not specified. The player character is named Sporey, a woman who was homeless as a child and was taken in by the criminal leader Fatman Tarkis for her skills as a thief. Under him, Sporey became a better thief and eventually started a career independently of him. Sporey is located by Eddie Symes, an associate of Tarkis, who brings her to him in order to fulfil a contract she had signed in her youth debt by stealing valuable items for him. Tarkis is later murdered by Symes who frames Sporey as the murderer. In order to stop the criminal organization from killing her, Sporey steals evidence which proves Symes is the murderer, at which point Symes is promptly executed by them. Sporey declares that while her name has been cleared, she still has great ambitions as a thief.

3 Comparison

As these games are all considered part of the First-Person Stealth Genre, they do indeed share several similarities. All of them are designed around allowing the player to in some way move past enemies undetected but they may have different ways of allowing the player to do so, which is the primary point of comparison. Other important details to compare are the offensive capabilities, how navigation works and how the narrative is constructed.

As many of these games can be determined to have some connection to Thief Gold even if they're not strictly sequels [14,16,37,38] in addition to the similar design, they may fall under

the classification of spiritual successor [26] to describe them. This will allow for further grounds for comparison, as a reasonable connection can be assumed [35]. Though the determined design similarities should be enough.

3.1 Stealth

The most obvious of which are the first-person perspective and the use of a stealth system. Most of them use light and Shadow to determine the visibility of the player character.

Thief Gold, Thief II the Metal Age, Thief Deadly Shadows, Gloomwood and Filcher all use a light gem which will allow the player a quick way of determining how well they've managed to hide from the enemy in the dark. The areas will often show a clear distinction between an area in heavy shadow and an area that is well lit, quite often they can be shown in direct parallel to each other due to a light source being placed near an object casting a shadow. This clearly shares the design element of teaching the player which zones are more safe to move into than others.

An exception to the need to hide in the shadows is Dishonored, which instead puts focus on either hiding behind walls to avoid detection or use high ground. The player may also use Blink, Possession or Bend Time to avoid detection. An obvious visual reason for this is that the missions are often well lit and there is no light gem to imply any effectiveness in using darkness. The player can determine visibility through an indicator over the enemies' head implying how aware they are of the player's presence. Presumably, including a shadow and light system like in Thief Gold would make the game too easy with the magic powers in place and thus the game may in fact have been designed around them.

Bioshock Infinite Burial at Sea Episode 2 has a very similar system to Dishonored, as the enemies have indicators above their heads to determine how aware they are of the player and there is no light gem to determine visibility. Like in Dishonored, the game also allows the player to see the enemies through walls. Regardless of how the behavior of the guards is communicated to the player, all of these games still attempt to teach the player of the danger attached to the guards, which in many ways aligns with previous research done on the design of stealth games [1,34].

A common element of all these games is the need to hide from enemies in order to avoid combat. A valid strategy is to find a hiding spot and observe the movements of the enemy in order to determine if they have moved away far enough to make it safe to come out and continue progress.

3.2 Combat

While outright combat is not recommended in any of these games, a valid strategy for the majority of them is to either kill or knock out enemies individually and as quietly as possible in order to minimize the risk of either being spotted when going through the same point multiple times or reducing the risk of the enemies calling for backup when discovered.

In Filcher it is not possible to use lethal force with the weapons alone, although it is possible to drown unconscious enemies or trick enemies into using lethal force on each other. In Gloomwood it is not possible to knock out enemies and the only non-lethal method is to sneak past them, at which point they are still a

potential threat. Though the primary difference between these two games is that Filcher simply does not allow for direct combat due to the lack of lethal weapons and the player must always attempt to escape if discovered to avoid damage, while Gloomwood will allow the player to defend themselves in the scenario but doing so will drain resources like bullets or health. In a purely mechanical sense, there is not much difference between knocking an enemy out or killing them while sneaking in either of these games, it removes a potential threat to the player's progress and a discovered body will still be an enemy to search for the player. The system is essentially the same in Thief Gold, the sequels and Dishonored, the only difference is that the player is not given a choice between killing or knocking out enemies.

A difference between Thief Gold and Dishonored in this regard is that using non-lethal force is easier than lethal force in Thief Gold, while the opposite is the case in Dishonored. It is worth noting that using lethal force in Thief Gold and its sequels does not have a penalty beyond some missions not allowing the player to use lethal force, while Dishonored has the Chaos system which does alter the difficulty level.

Bioshock Infinite Burial at Sea Episode 2 will force the player to only use non-lethal force on the highest difficulty setting though non-lethal force does not attract attention from other enemies as lethal force is wielded using firearms, which like in Gloomwood will allow other enemies to seek out the player which leads to further combat. As such, it is recommended in both these games to avoid the firearms. This also applies to some weapons in Dishonored as well.

3.3 Navigation and movement

Thief Gold, Gloomwood and Dishonored will allow the player to climb obstacles, stack objects and swim in order to find alternative pathways. Filcher does not feature these mechanics and as such the strategies will not work. A notable portion of Filcher will require the player to move onto a platform surrounded by water on a heavily guarded bridge. While the player can escape this platform through an alternative route, the bridge is the only viable option simply because the player is not allowed to climb over obstacles or swim, which results in immediate drowning. In similar situations in Thief Gold, Gloomwood and Dishonored, alternative pathways are much more likely to be found due to the extra mechanics.

A noticeable difference between these games is the way the player is expected to navigate. In Thief Gold and its direct sequels, the player is given a map that is often incomplete or incorrect along with a compass to determine the location of the objectives. Because of the intentionally incorrect maps, the player may be forced to memorize the layout and only use the map as a rough guide.

Dishonored and Gloomwood will often give the player a more complete map but it may be located within the game world and must be found before it may be used. What Dishonored has which Gloomwood does not is quest markers, an arrow pointing to the objectives at all times, which means the player may not need the map to help them locate the objectives.

Bioshock Infinite Burial at Sea Episode 2 and Filcher do not feature maps at all and the player will be forced to navigate the game world without such a guideline. However, Bioshock Infinite

Burial at Sea Episode 2 does have an optional arrow to point the player in the right direction if they deem it necessary, while Filcher will force the player to rely on memorization of the layout in order to properly navigate through the game world.

A particularly noteworthy difference is that Thief Gold, the earliest game used in this study, does not feature the typical WASD key bindings by the default and is the only game in this study to not use them. It is true that the game does allow the player to change the key bindings to anything they would prefer but the default is still different from the other games.

3.4 Sound Design

The majority of these games use sound to determine the location of the enemy guards and sound can be used to distract them. Thief Gold established that when the enemy is patrolling their route, the player will be able hear them and determine how close they are based on how loud their foot steps are. This system applies to the direct sequels to Thief Gold, Gloomwood and Filcher with not much difference between them. Sounds made by the player can either be used as an advantage, such as creating loud sounds as a distraction, or they can be a detriment in the case of carelessness.

Dishonored and Bioshock Infinite Burial at sea Episode 2 differ in that enemies patrolling the area itself does not make much sound but the enemies will still talk and have conversations that will give away their position, a feature found in Thief Gold as well. The footsteps of the enemies are not audible which is why the player may instead need to rely on the ability to see through walls in order to determine the exact position when they aren't talking. The enemies do however tend to think out loud in both games which largely substitutes for the foot steps, though this does not happen every time the enemies walk. A possible explanation for this change could be that the introduction of the ability to see through walls might seem unnecessary and the player may not feel compelled to use this ability in case it is always possible hear the enemies. Another possibility is that determining the amount of enemies present with the ability to see through walls may be more useful in case the enemies stand still or are too close to determine how many characters are moving.

3.5 Tools and resources

A noteworthy design element of these games is that they allow the player to use certain tools and resources in order to help them progress in the game, without relying on the basic stealth mechanics or combat. These tools and resources vary from lock picks to depleting magic powers.

The tools used in Thief Gold and Thief II the Metal Age are designed around easing the player's ability to make progress through the mission and managing the resources by searching for valuable objects will allow them to purchase more tools at the start of each mission, thereby easing the resource management. Dishonored, Thief Deadly Shadows and Bioshock Infinite Burial at Sea Episode 2 all use similar systems although it is not identical. Dishonored and Thief Deadly Shadows have merchants the player may talk to to sell or buy items though this may be seen as a rather small change in how the money system works. Bioshock Burial at Sea Episode 2 places the vending machines in many places, which means the distinction between buying items and the mission are not as clearly different, as the player does not

need to complete any objective to buy items. Gloomwood implies that such a system may be implemented in future builds of the game but version 0.1.222 does not include the ability to spend money, although it does allow the player to collect money. Filcher does allow the player to acquire money but this not allow the player to buy more tools and merely functions as a score count.

Dishonored and Bioshock Infinite Burial at Sea Episode 2 both make use of a mana system to help the player progress. While the exact powers used do not match entirely, both games do allow the player to see through walls and thus determine the location of the enemies. They also share the indicators of awareness in the enemy characters being signified by a filling bar. While this may appear to be different from other games which do not use a mana system, there is still a very clear limit to how they may be used. As an example, the rope arrows in Thief Gold are a limited quantity based on what the player could purchase before the mission started or how many can be found during the mission, the player may reuse them as long as they can be retrieved. By comparison, the Blink ability will not drain the mana if the player makes use of the ability sparingly and allow the mana to refill. Only Dark Vision and Blink can allow the player to use mana without risk of losing some of it and all the other active powers will require the player to use some mana that will not regenerate on its own. Bioshock Infinite Burial at Sea Episode 2 does not have regenerating Eve, meaning the player will be forced to eliminate some of it in order to use them.

The ability to open locked doors in these can vary, even in the more similar cases. Thief Gold, Thief II the Metal Age and Filcher have very similar systems for lock picking, though Filcher does not include the second lock pick. A possible explanation for this is that the second lock pick in the two Thief games may be seen as redundant, as long as the player can switch between them quickly enough it doesn't alter the challenge much to reduce it to a single lock pick. Thief Deadly Shadows does have a different lock picking mechanic from its predecessors though notably it still has it reduced to a single lock pick, also eliminating the need to switch lock picks, with the challenge instead being about finding all the correct positions to pick the lock. Bioshock Infinite Burial at Sea Episode 2 features a very different lock picking mechanic, in which the lock picks will be consumable and come with a risk reward system. What all of these may imply is that the way in which the lock picking of the first two Thief Games were not challenging or interesting enough to copy without noticeable alteration. Dishonored and Gloomwood even ignore lock picking in favor of destructible doors.

There is a common idea of allowing the player to see things not normally shown in first-person in order to plan ahead. In Thief II The Metal Age, the player is allowed to use the scout orbs to see objects away from normal view, for example allowing the player to see the player character or see into a different room. The Dishonored games allows the player to see through walls with the magic power Dark Vision, as does Bioshock Infinite with the Peeping Tom plasmid. Filcher does allow the player to view security camera angles through the use of terminals, though this will only be accessible in specific areas and is not an ability that can be used at any point. The exception to this is Thief Gold and Gloomwood, though it is important to note that due to the early access status, Gloomwood may include this type of feature in future builds of the game. As such a feature is not part of version

0.1.222 or implied within this build, this study does not assume one is intended for future builds of the game.

3.6 Narrative and story

Narrative in the context of this study refers to the way in which the story and world is communicated to the player. This is important for many of the games being investigated in this study, as many of them relay new information about what needs to be accomplished through context clues and changes in information.

The stories of Thief Gold, Dishonored, Filcher and Bioshock Infinite Burial at Sea Episode 2 all feature betrayal as a core element. Garrett being betrayed by the Trickster, Corvo being betrayed by the Loyalists and Elizabeth being betrayed by Atlas, all culminate in revenge. While Elizabeth does not enact Revenge directly, the story does make it clear that she did set up Atlas to fall during the events of the original Bioshock.

All of these games take place in a city or other type of settlement and generally avoid describing the world outside of it. While the Thief series does mention other locations, it does not describe them in detail and instead focus on the city itself and how life is in it. Filcher and Bioshock Infinite Burial at Sea Episode 2 both take place in a world based on reality, with real world locations referenced, though the cities they take place in are fictional and the center of the world building. Dishonored does feature more world building than the other games used in this study, though this may only be because the plot centers around the assassination of an empress and it may be deemed important to understand the far reaching effects this may have, so it is still worth noting that the game still only takes place in the city of Dunwall and is presented from the perspective of its inhabitants. Gloomwood version 0.1.222 takes place in a village and fishery just outside of the city of Gloomwood itself and future builds of the game will presumably include the city itself.

There may also be some observable similarities in details. One such example is how the conclusion of The Brigmore Witches will allow the player to finish the final mission by swapping an important ritual item while the villain is occupied, which is the same solution to finishing the final mission in Thief Gold. Many such similarities can be attributed to the directly stated line of inspiration. It can't be stated for absolute certainty that all of those types of similarities are intentional or not but they are still observable.

There is also a shared tendency for these games to convey parts of the story through the use of notes and books which leave clues about what the characters are attempting to keep hidden from the player. For example, these notes can offer clues about how to progress or offer some foreshadowing. This could potentially be the most important element of narrative design in these games, as it is directly connected to the gameplay.

While there are some similar elements in Gloomwood version 0.1.222, it is impossible to fully analyze the how the story differs from the other games because it is incomplete. The game does however share the core concept of the story being set in a setting in which the main character have apparent allies with unknown goals and motives. The idea that the player must also collect notes from other characters in order to gather clues about the setting. As the story is not complete, it is only possible to speculate on further changes to it in future builds of the game. Version 0.1.222 does

however feature some similarities to the other games that can be analyzed. Much like with the settings of Bioshock Infinite Burial at Sea Episode 2 and Dishonored, many of the characters appear to suffer from an illness and this illness may be related to the apparent decline of the surrounding area.

3.7 Difficulty settings

A notable difference between these games is how the difficulty settings are presented. In Thief Gold, Thief II the Metal Age and Thief Deadly Shadows it presents difficulty in the form of altering the mission objectives, the lowest difficulty setting will allow the player to achieve as little as possible in a mission while the higher difficulty levels will be more strict in what the player must accomplish in order to complete the mission.

Filcher resembles this structure the most but does allow the player to change the difficulty and as such the player will be forced to accomplish the mission with a set amount of requirements regardless of desire or skill level. The mission requirements will differ between the missions, which is how it is presented in Thief Gold. The player is also not allowed to use direct lethal force on the enemy characters nor is it possible to manually save the progress.

Dishonored will have different missions objectives but this is not tied to the difficulty. Instead the player will be given optional mission objectives which will have practical advantages in progressing through the game and they may in some cases have a direct impact on the chaos system. The chaos system does alter the difficulty through the amount of guards placed in the missions and some objectives may be altered because of it.

The highest difficulty level in Bioshock Infinite Burial at Sea Episode 2 will limit the player's ability to engage in combat as all the lethal weapons are removed. Beyond this, the difficulty is otherwise similar to Dishonored's system in which the enemies are stronger and more attentive, though it does not share the chaos system or any similar type of system which would increase the difficulty as a result of actions taken. The game will only make use of checkpoints for saves and does not allow the player to save the game manually.

Gloomwood allows the player to save in a way similar to Thief Gold on the lowest possible difficulty setting, as it allows the player to save the game at any point. The higher difficulty settings will only allow the player to save the game at certain point and the highest setting will only allow the player to save in case they have access to Wax Cylinders. In addition to basic changes in the difficulty such as additional enemies at the higher settings, the highest difficulty setting will also have some enemies wearing armor which will prevent the player from stabbing them in the back.

A possible explanation as to why the ability to save the game differs between these games is tied into the difficulty settings could be that Thief Gold's system makes it easy for the player to finish missions. If the player is able to save the game at any point, it is possible to save anytime the player has accomplished a goal at a desirable point, such have still having most health intact or having avoided being spotted. If the player can't save the game at any point, this may force the player to think more strategically in regards to progress.

The core of Thief Gold's difficulty settings, the additional mission requirements, are not present outside of the Thief series itself. Filcher and Dishonored may in fact have mission requirements for the player to complete, though they will not differ based on difficulty setting.

3.8 Developments

A possible explanation for many of these differences could be Thief Gold can in many ways be considered the originator of the genre of first-person stealth genre, as the developers of the subsequent have stated Thief Gold or another part of the Thief series as direct inspiration or may share some other type of connection such as common developers or the intent to make another installment in the series before making an original game instead. Thief Gold and its direct sequels may thus be seen as primitive compared to the subsequent games in the genre. The lack of an inventory screen in which the player is allowed to an overview of the current items at hand in Thief Gold or how the WASD key bindings wasn't the default binding of Thief Gold either, while they are part of subsequent games in the genre are signs that some design elements were not entirely fully realized when the game was initially released. The WASD key bindings are considered the default for first-person games [11] and may thus simply be considered expected. Because the standards change, modern design practices may still influence design of games which may attempt to copy older games simply because of expectation [22].

3.9 Results

What can be considered the results of this study is that there has been a demonstrations of the improvements and branching of this particular genre of games. While the influence from Thief Gold and its direct sequels are clear, the subsequent games within the genre are not uniform, nor do they entirely conform to the basics of Thief Gold. The core gameplay of each game is essentially the same, the player has to avoid detection from the enemies and the way forward may require analysis of the environment. In general, the player must avoid detection based on what is considered outside of the enemies' field of view and determine the path forward through the use of context clues. This aligns well with what previous research into the stealth genre implies [1,7,34]. Where these games differ is they way in which the tools given to the player function, how the difficulty settings function and the exact rules of what is considered out of the enemies' field of view. As previous research into the topic of inspiration and how common ideas are implemented would imply, the design elements from previous games may only form a starting point from which to build upon, rather than simply being a template to copy [13,18,33].

As some elements of Thief Gold have been disregarded or altered in the majority of subsequent first-person stealth games, this does seem to affirm the notion that modern design elements are included due to expectation and general improvement [11,22].

These differences may be explained through the way in which the perceived challenge for the player is kept balanced. Thief II the Metal Age and Thief Deadly Shadows have rather minimal changes from Thief Gold, though the other games tend to deviate from Thief Gold in more overt ways. A clear example of this is how Gloomwood's difficulty settings alter the ability to save the

game, something not applicable to the other games investigated in this study. Gloomwood is also notable for having the least similar design in how areas are explored and thus the challenge in making progress can be considered quite different from the other games. Though as has been noted, Gloomwood has still been in early access during this study and several elements of the game could change in the future. Likewise, Filcher is very similar to Thief Gold although it removes or simplifies certain core mechanics in order to change the challenge, most notably the ability to save and change difficulty are absent. Aside from the other entries in the Thief series, Thief II the Metal Age and Thief Deadly Shadows which change relatively little from Thief Gold, it could be considered that Filcher is the least different from Thief Gold while Gloomwood differs the most. Dishonored and Bioshock Infinite Burial at Sea Episode 2 feature similar approaches in deviating from Thief Gold, they tend to present many of the mechanics related to the tools used in Thief Gold and its sequels as mana consuming powers instead, though the effect can essentially be considered the same. Some differences may be primarily superficial and still fulfill the same purpose.

What designers may learn from the results of this study is that similar gameplay can be applied in different ways, the core concept of a game and how it played may not always be rigidly followed. As one example in this study shows, Gloomwood may share the core concept of how Thief Gold presents stealth and how to navigate within the environment of first-person stealth, the game itself has a very different environment structure compared to Thief Gold and many other games used in this study. Thief Gold, Thief II the Metal Age, Thief Deadly Shadows, Dishonored and Filcher all feature a mission system absent from Gloomwood and even Bioshock Infinite Burial at Sea Episode 2 still feature what can be considered very small missions, yet the similarities are still very apparent because the core mechanics of stealth are still present.

While a game such as Thief Gold may provide a useful initial template for the development of a new game, it is important to note that deviation from this template is not only likely to occur but may prove useful in creating a challenge. As an example, Gloomwood's interconnected areas differ from the mission based areas of Thief Gold and thus require the player to explore a wider area, which may explain why the saving system functions differently. This does not mean the majority of the games used in this study have major differences from Thief Gold, Thief II the Metal Age and Thief Deadly Shadows are indeed very similar to Thief Gold, though it is to be noted that those games in particular are direct sequels to Thief Gold and thus similarities may be expected more so than games merely using Thief Gold as a template [8], though this may not be a guarantee for making game being more or less similar than the shared point of origin. Dishonored and Bioshock Infinite Burial at Sea Episode 2 are not direct sequels to Thief Gold but the similarities are still clearly demonstrated and the differences can primarily be considered as different solutions to the same problems, Filcher is also not part of the Thief series yet has the least amount of differences from Thief Gold aside from the direct sequels to Thief Gold.

As previously mentioned, Thief Deadly Shadows could not be played unmodified. While this did not have an impact on the general design of the game and was merely done in order to make the lock picking and ladder elements function properly, as it would have been impossible to complete the tutorial mission

without it, regardless it still means the game had to be played in a way that was not sanctioned by the developers or publisher.

This study has only been conducted by a single researcher with no additional researchers or participants, as such it may be noted that the results and conclusions found within this study may have been made with certain oversights. If the addition of participants, for example experts into the first-person stealth genre, had been included there is a possibility that insights the sole researcher may have been unable to gain alone could have been incorporated. It is worth noting that the study was expected to be completed within a shorter time frame than what would have allowed for participants to be included, each participant would have needed to either be familiar with all games used in this study before recruitment or be assigned to play all games within the time frame, which was not deemed reliable enough to be considered.

This study of course only includes seven games as part of the first-person stealth genre and it is possible that a similar study conducted using different games may yield different results, as the designers may not make the same decisions even though they work within the same genre.

It is worth noting that genre can be defined in many different ways and these games may be classified as something other than first-person stealth for a different study. They have been defined as being part of the first-person stealth genre due to fitting the set criteria for this study but they may fit the criteria for other genres as well, provided the necessary design elements are part of them. This study could not include every single game which bears similarities to Thief Gold and Thief Gold may bear similarities to games which do not qualify as First-Person Stealth, at which point it may be included in a comparative study using games quite different from the ones investigated here.

Finally, not every single detail in regards to how the design elements are implemented and how they differ from similar concepts have been fully analyzed, the focus has rather been on how they are functioning as solutions to similar scenarios. This is because of how large the selection of games are and a more in-depth analysis might be more suited for a smaller study which only compares two games, with the seven games investigated here the point of comparison may seem too obscure

4 Conclusion

This study may provide future researchers with grounds for comparative studies in game design, as to note which elements of design may be considered valuable for comparison. As is claimed here, the basis for comparison may be based in core gameplay concepts and the variation within them along with certain additional design choices. This would not necessarily be simply within the same genre but may be more generalized.

Individual segments of what has been focused on in this study may also be studied further. As this study implies, games within the same genre can have very different solutions to the same gameplay problem. As an example, the way in which these games handle difficulty settings can vary within a single genre and an example of a future study could be in regards to how different games implement difficulty settings.

Game design within the same genre, in this particular case the first-person stealth genre, will indeed come with certain

conventions that will largely apply to many games within the genre. However, as has been demonstrated there is still a noticeable amount of differences between these games and how solutions towards the same conventions can be reached.

ACKNOWLEDGMENTS

I would like to thank Hartmut Koenitz, my supervisor, for his guidance throughout the process. In addition, I would also like to thank Mikolaj Dymek for recommending I'd continue this line of research based on my work in a previous course.

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