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HOW AGENCY IS AFFECTED BY SHOWING PREREQUISITES OF CHOICES IN STRATEGY GAMES

A Comparative Study

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Abstract

This study attempts to uncover how the player's agency is affected by seeing prerequisites of dynamic choices, as opposed to not seeing them. The study's background presents different definitions of agency, along with what kinds of conclusions previous research has drawn on the term. The background also presents and discusses varying implementations of digital choice interfaces in a variety of different genres of video games.

In order to answer the research question, a short strategic experience was created with two versions, one containing visible markers on prerequisites choices and one which hides these markers. A qualitative method was used to investigate how these two versions affected the player's agency, and whether there was any difference between them. The results showed that visible prerequisites allowed the player a higher chance to experience positive agency because of the clear and direct feedback it gives on the player's previous choices.

Keywords: Agency, Strategy Games, Dynamic Choices, Prerequisites

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1 Introduction

This study aimed to find out how having visible prerequisites of dynamic choices affects the player's agency. This was done by creating an artifact, a short strategic experience, in which the player could make decisions and see the repercussions of those decisions in a dynamic choice interface. The artifact had two versions, one that showed prerequisites and one that hid them. These two versions were tested on two groups of participants, after which they were individually interviewed. By analyzing and comparing the two groups' interviews and playthroughs, an attempt was made to answer the research questions and find out how visible prerequisites affect the player's agency.

All games offer some kind of choice to the player. The choice can be to control a character in a direction or to press a button. No matter what kind of choice, it always works as a way for the player to express themselves in their chosen system. One of the most minimalistic ways of letting the player choose is to give them two or more buttons, a basic choice interface. This is commonly used in video games as a game mechanic, to both tell interactive stories and to let the player control the experience. Role-playing games like *Mass Effect* (Bioware 2007) and *Pillars of Eternity* (Obsidian Entertainment 2015) use text-based choice interfaces to let their players choose dialog options that change the direction of their narratives. Grand strategy games like *Europa Universalis IV* (Paradox Development Studio 2013) and *Stellaris* (Paradox Development Studio 2016) contain event boxes that allow their players to choose both narrative and mechanical outcomes. When the player expresses intent in these types of choice interfaces and receives a satisfying response, a phenomenon called agency occurs (Tanenbaum & Tanenbaum 2009). Agency is what the player feels when their choices lead to satisfying conclusions.

A common way of letting the player get a more tailored experience is to implement dynamic choices. These are choices that can change in different ways, depending on variables, tags, traits, attributes, which can change during the experience. In *Pillars of Eternity* this manifests as dialog options that can be unavailable depending on attributes of the player character. If the player has high "intellect" then a number of smarter options become available. The choice of then making a smart character is satisfied by the availability of options that the player believes to be smarter. This is common in role-playing games, but is also prominent of grand strategy games. Event boxes in *Europa Universalis IV* can give the player additional options if certain variables are fulfilled, giving a more tailored experience around the game's current world state. When these additional options with prerequisites behind them appear they are always highlighted as a choice with prerequisites. Other games make it a point to hide which choices have prerequisites, and *Pillars of Eternity* even lets the player choose if they want to play with or without visible prerequisites. By finding out how this design choice of hiding or showing prerequisites affects the player's experience the game designer can be given more grounds on which design to choose, and how to implement it.

2 Background

This chapter focuses on defining a number of terms and concepts, as well as exploring the various ways choice interfaces are constructed in video games. To begin with, the chapter presents the grand strategy game genre, along with its mechanics and events. These topics are compared and analyzed with other relevant games with similar functions in order to create a broader viewpoint on this narrow field of games. Agency is then defined and discussed using a number of studies and articles in order to efficiently use the term for the purpose of this study. The term immersion is also defined and discussed as it is often used in situations that can lead to, or perhaps are vital, to achieving a sense of agency. Beyond this, the chapter presents a number of concepts on the topic of dynamic content. This is done in order to create a believable artifact, which effectively handles showing and hiding prerequisites in choice interfaces, and deals with the variables used in those prerequisites in an effective manner.

2.1 Grand Strategy Games

It is important to be able to categorize games, both from their narratives and from their gameplay, as this can have major effects on a game's development, marketing, and consumer expectations (Burn & Carr 2006, p. 18). Games are judged on their differing mechanics, narrative techniques, origin, and theme, in order to place these strategic titles into certain categories. In strategy games the most important factor would be the mechanics. A title like *StarCraft* (1998) would be categorized into real-time strategy, or RTS, for its use of continuous gameplay where all players control their soldiers at the same time. This category contrasts the other major branch of strategy game, the turn-based strategy, or TBS, with games like *XCOM: Enemy Within* (2013) and *Heroes of Might and Magic III* (1999). Both of these feature chess-like combat encounters where each character (or player) gets to move, attack, and make commands within the limits of their turn.

To complicate things further, there are also more categories within these categories of strategy games. Most important to this study is the more broadly titled genre called grand strategy games, or GSG. These games contain a number of features from real-time strategy, while mixing it with some from turn-based strategy. The most prominent in GSG would be the so called "real-time with pause" (Valve Corporation 2018) system that takes the continuous gameplay from RTS and allow the player to pause it, as well as control how fast, or slow, time passes. This is supposed to allow the player to enjoy the more direct action loop of RTS games, while still allowing for the tactical thinking of TBS. The player would then play the game at a speed of their choosing when they do not need to make any decisions. As soon as something happens in the game that requires their attention, the player simply pauses, looks at their options, performs a set of actions, and then lets their actions play out in real time. This particular mechanic is a staple in GSG, but also appears in other genres. For example, *Pillars of Eternity* (Obsidian Entertainment 2015) and *Planescape: Torment* (Black Isle Studios 1999) are both titles in the role-playing genre that make use of this "real-time with pause" system. Beyond just using this mixed system somewhere between an RTS and a TBS, GSG have a number of characteristics that are very prominent in their thematic and design. For one, they either focus on historical events, and exploring alternative historical interpretations, in the case of games like *Europa Universalis IV* (Paradox Development Studio 2013) and *Crusader Kings II* (Paradox Development Studio 2012). Or

they explore some kind of fictional future or past, in games like *Stellaris* (Paradox Development Studio 2016), which is based mainly on popular science fiction or fantasy.

Grand strategy games are often regarded as complicated, tough to master but rewarding, and focused on player freedom and expression. There is no real way to win in a game like *Europa Universalis 4*, or EU4, they can only be played until the game's timer runs out. As opposed to other strategy games like *Civilization VI* (Firaxis Games 2016) in which there are very distinct goals to work towards. In EU4 there might be a high score that allows the player to compete in a way, as well as achievements to unlock, but these are not the main motivator behind play the game. For example, achievements cannot be earned in the game's "normal mode" but can only be unlocked in "ironman mode" in which the player's choices are permanent for each playthrough. Playing in "normal mode" is mainly about the player creating their own challenges and goals in the game's system and attempting to complete them.

2.1.1 Gameplay

One of the most prominent digital stores for PC games, Steam (Valve Corporation 2004), has a list of games tagged as grand strategy, which includes among others the titles *Europa Universalis IV* (Paradox Development Studio 2013), *Stellaris* (Paradox Development Studio 2016), and *Crusader Kings II* (Paradox Development Studio 2012). These games are all about managing different types of governments. In *Europa Universalis IV*, or EU4, the player gets to control any nation in the world between the years 1444 and 1821. In *Crusader Kings II*, or CK2, the player gets to take on the role of a specific regent somewhere in Europe, North Africa, as well as India and a large part of Eurasia, during the years 769 to 1453. While CK2 focuses on feudal society and attempts to simulate the lives of nobility living during the era, often to interesting effect, EU4 instead tries to simulate the more abstract role of the state itself, whether it is a Tunisian sultanate or an Uzbekian khanate.

Both these games include a "real-time with pause" system which allows the player full control over the passage of time while playing. Both focus on creating a stabile realm and making it grow in different ways. The resource management that both games include are supposed to lead towards this growth. In EU4 this growth is represented as the abstract monarch point system, which is used to grow provinces, develop technology, and in general forge the realm in a certain direction. In CK2 the focus lies instead on keeping characters in the game world from disliking the player character, as this would make them more inclined to attack, revolt, or scheme against the player's interest.

The game *Stellaris* (Paradox Development Studio 2016) is similar to CK2 and EU4 in many regards, but also has several features borrowed from the 4X genre of games. This genre is named after the four things players expect to do in these types of games, which are explore, expand, exploit, and exterminate. Unlike GSG that attempt to simulate life-like systems in their mechanics, 4X games tend to avoid realism in favor of gameplay. In the 4X game *Civilization VI* (Firaxis Games 2016) for example, the player gets to pick a leader from real history and play out matches, a sort of mock reality, along with other historical leaders in an attempt to win through violence, diplomacy, religion, science, or by simply being the nation with the highest score. These matches let the player develop technology, build historical wonders, and expand empires across vast earth-like continents, in a way that is simultaneously historical and completely fictional. Matches go through eras, from the early "classical era" to the "information era", with technological developments that follow

humanity's. But the key here is that the game never tries to simulate reality, but rather celebrates it with fun gameplay and historical nods and winks.



Figure 1 Turn based strategy in *Civilization VI* (Fireaxis Games 2016).

This is where *Stellaris* (Paradox Development Studio 2016) comes in as an interesting combination of 4X and GSG. *Stellaris* takes place after the year 2200, when a fictional species of the player's creation has just managed to reach the stars. The early stages of the game play out very much like *Civilization VI*, with the player's nation spreading out over a large, randomly generated area, in this case a galaxy, and interacting with other nations through peaceful or violent ways. But the reason why *Stellaris* is considered to be a grand strategy game lies in three things. The first is its usage of "real-time with pause", as opposed to *Civilization VI* which used a strictly turn-based system. The second is that it has the same open-ended goals and challenges that EU4 and CK2 have, where the player gets to set their own boundaries. Finally, the third reason lies in the game's focus on growth through realistically simulated planets and narratives.

Obviously, a game about aliens in space cannot be historical, or strictly realistic, but *Stellaris* (Paradox Development Studio 2016) strives towards realism within its own game world in the same manner that EU4 and CK2 does. In *Stellaris* the player constantly gets to interact with narrative moment throughout the gameplay that makes the world feel as if it could be a reality sometime in the future, similar to how EU4 has events that can divert from historical fact while still retain a feeling of realism. These event boxes that give the player a short interactive narrative within the game world are a staple in grand strategy games, and are used to both bring the player into the narrative and to let them interact with the game world in often minor but sometimes major ways.

2.1.2 Event Boxes

Depending in which country the player chooses different events can be shown during gameplay in *Europa Universalis IV* (Paradox Development Studio 2013). Many of them are reoccurring and universal. If the chosen country owns a colony, then events surrounding that

colony will often be reoccurring for as long as that colony is still owned. Other events are historical, permanent, or occurring one time only. These are in many cases tied directly to a country, religion, or government type. One of these would be the “The Surrender of Maine”, an event surrounding a province owned by England, but is promised to France. The controller of England is given the choice to either hand over the province of Maine or keep it and risk immediate war. Events like this one have permanent effects on the game world and are used to both give flavor to individual countries as well as give the player choices with more weight behind them. Events that are reoccurring have in contrast less impact on the game world, but can instead give the player a sense of control over minor details of their rule.

Crusader Kings II (Paradox Development Studio 2012) has a similar system to *EU4* with both more permanent and generally more historical events, as well as reoccurring events that gives the player control over minor things. The important thing to note here is that because of *CK2*’s focus on the individuals inside the nation’s nobility as opposed to *EU4*’s focus on the nation itself, *CK2*’s events are much more character driven. Both the narratives within events as well as outcomes are told from the perspective of the character that the player controls. *CK2*’s events are interactive narratives about the player’s character. While *EU4*’s events are at times told like an interactive narrative about the government’s ruler (if there is one), they are generally focused on telling an interactive story about the country itself. *EU4* tells the story of the things happening in the country, and the player chooses how those in charge of the country should act, whether that is a monarch, a religious head, or a president.



Figure 2 An event box in *Europa Universalis IV* (Paradox Development Studio 2013).

In *Stellaris* (Paradox Development Studio 2016) there are both event boxes that are similar to those in EU4 and CK2, but also dialogs held with other nations in the universe. These dialogs include both gameplay-oriented interactions in vein of 4X games like *Civilization VI* (Fireaxis Games 2016) where the player trades information, resources, and diplomatic allegiances, as well as dialogs more similar to simple interactive narratives where the player picks something to say and gets a response. The dialog system in *Stellaris* is in many ways a combination of mechanics from grand strategy games, 4X games, and also role-playing games for their interactive and most of all dynamic dialogs.

Generally speaking, the different types of event boxes used in these games all have very similar narrative functions as dialogs in role-playing games. In the *Pillars of Eternity* (Obsidian Entertainment 2015) the story is primarily told through dynamic text sequences which the player controls by picking what their character says. In *Europa Universalis IV* (Paradox Development Studio 2013) the event boxes could very well be described as shorter, more direct versions of the narrative mechanics used in *Pillars of Eternity*, even down to the dynamic dialog choices the player is offered. In *Pillars of Eternity*, as well as many other role-playing games, variables concerning the story or the player character often impact what dialog option will be available for the player. For example, in the role-playing game *Planescape: Torment* (Black Isle Studios 1999) if the player character has a high intellect then certain dialog options with a prerequisite of higher intellect will become available. This is called dynamic dialog options, a mechanic mainly featured in games with interactive narratives but that is also used in any game with a choice interface that can change depending on differing variables. For example, the event boxes in EU4 might not be considered to be dialogs between characters, but they contain the same features as role-playing game dialogs except shorter and more direct in showing their outcome. Siegael and Szafron (2009) defines the dynamic dialog as “a conversation in which each participant alternately selects remarks based on a changing world state and in which each remark can change the world state” (Siegel & Szafron 2009, p. 1). The grand strategy event box simply takes this formula and replaces the conversation with shorter input and output system that delivers a more abstract narrative. The player selects remarks based on a changing world state and each of those remarks can change the world state. In *Crusader Kings II* (Paradox Development Studio 2012) there at times occur so called event chains, which are series of event boxes that explicitly build upon the choices made previously in that series. These can be seen more akin to the conversation in Siegael and Szafron’s definition, except they each have a longer period of time pass between remark and response. While still a conversation, these event chains should also be classified more as snail mail conversations rather than as the real-time dialogs seen in most role-playing games. Nevertheless, the idea of dynamic dialogs is important to understand in order to then define the concept of prerequisites in these types of conversation, monologs, interactive narratives, and choice interfaces.

2.1.3 Prerequisites

Prerequisites separate interactive choice interfaces from dynamic choice interfaces. The first offers the player more than one choice in a given situation, while the second offers more than one choice as well as at least one choice that has some sort of requirement behind it. The player can only pick this choice with a requirement behind it if that requirement has been fulfilled. This requirement can be called many other things as well. In *Pillars of Eternity* (Obsidian Entertainment 2015) the developers chose to call it qualifiers. It can also be

defined as a condition to be fulfilled, a variable to be set, a certain world state to be completed, or just simply as prerequisites.

Usually when interacting with choice interfaces, like the dialogs in *Pillars of Eternity*, the player picks an alternative and receives an immediate response. The player then affects the outcome in what response they will be getting. Prerequisites are used to allow the player's action to have an impact upon not just the response, but also their own future choices. Fulfilling a prerequisite in an RPG like *Planescape: Torment* (Black Isle Studios 1999) might mean selecting a certain intellect for the player character five minutes after starting the game. This would then come into play for the player fifty hours into the experience where they can use their high intellect to select dialog options only available for high intellect characters. This also means that the fulfillment of the prerequisite does not have to be narratively connected to that unique choice. In *Pillars of Eternity* there are several dialogs where the player can affect what choices they have available by picking a certain remark earlier in the dialog. For example, when the player talks to a companion and selects a remark that angers them, then that can affect their will to continue the conversation. This could be considered a long-term effect on future choice availability. Often when it comes to longer dialogs the choices made to affect later choices in that same dialog are done in a branching dialog system (Brent Ellison 2008). This means that the story points playing out are built to display different choices than other story points because of the player's action in that same dialog, and is not because of variables carried over from previous dialogs or choices. However, once the dialog is completed the choices the player made in that dialog affects the choice availability in future dialogs. These future choices would then be seen as being based off prerequisites, not branching dialog paths.

The function that these choice prerequisites have in grand strategy games like *Europa Universalis IV* (Paradox Development Studio 2013) and *Crusader Kings II* (Paradox Development Studio 2012) lies mainly in making event boxes dynamic. Like dynamic dialogs (Siegel & Szafron 2009) dynamic event boxes are normal event boxes that have choices with prerequisites – conditions that have to be fulfilled in order for these choices to be accessible. Usually these prerequisites are based on the traits of the entity the player is controlling. In *Crusader Kings II* this is based on the player character's traits whether they are negative or positive. In *Europa Universalis IV* it is based on the personality traits of the ruler as well, but unlike CK2 where the player has a greater degree of control over which traits their ruler ends up having, albeit mostly random, in EU4 the traits are gained at complete random. These variables are used by the developer to create a more chaotic and randomly generated world state in the otherwise very rigid and precise set of systems that the tactical gameplay offers.



Figure 3 A choice with prerequisites in *Europa Universalis IV* (Paradox Development Studio 2013)

Normally these dynamic choices would not even be shown in grand strategy games if they are not already fulfilled. But in role-playing games this is not always the case. Planescape: Torment (Black Isle Studios 1999) does not show the player choices if their prerequisites are not fulfilled. *Fallout: New Vegas* (Obsidian Entertainment 2010) on the other hand shows the player all choices along with their prerequisites, and even gives the player a unique response if they select something they have not fulfilled the prerequisites for. *Pillars of Eternity* (Obsidian Entertainment 2015) even allow the player to choose in the options whether they want to play with or without showing “Unqualified Interaction”.

Pillars of Eternity also offer the player the choice to play with or without “qualifiers”, which is the visible indication that choices have prerequisites. The reason for making this a choice is most likely that the developers simply want the player to be able to choose themselves how to play. Considering that *Pillars of Eternity* have several options that customize its dialogs makes it clear that the developers want to allow players the freedom to tailor the experience for themselves. But with this option an interesting question comes up. How does allowing the player to see these “qualifiers” affect their experience?

In a previous study by the author called “How Agency is affected by Dynamic Dialog Choices in Digital Role-Playing Games” (Bodegård 2017) the effect on either showing or hiding unavailable dialog choices for players was investigated, which shone some light on the reason people have for wanting to play with one or the other. The participants in this study who wanted to play with seeing unavailable dialog choices in most cases reasoned that they

wanted to have as much information about the dialog as possible. Not only so that they could explore the game again with different variables but also to give a clearer overview of the whole experience, even if many options would be unavailable. Those who wanted to play without seeing unavailable choices explained that they found them annoying. Seeing choices that they could not make would either be immersion breaking, since their character should not be able to even be aware of option they could not make, or that they just would be annoyed at seeing options they might be interested in picking without being able to do so. In the end the study found that the participants would only experience a negative satisfaction by seeing unavailable choices when they wanted to pick any of those unavailable choices. But whether or not they experienced negative satisfaction did not have any correlation with them wanting to play with or without seeing unavailable choices. This means that if some of these participants would for example play *Pillars of Eternity* (Obsidian Entertainment 2015), they would choose to play the game in a way that would let them experience a less satisfying experience, even if it might not give them the best possible experience when it comes to experiencing strong agency. In the case of prerequisites, it would be interesting to see if participants also have opinions on playing with or without them visible, as well as see how these opinions correlate with their perceived agency and satisfaction within the artifact.

2.2 Agency

According to Janet Murray, agency is a satisfying feeling that appears when the player sees the outcome of meaningful actions and choices (Murray 1997, p. 126). Whether this is about a linear experience or a branching or interactive story, agency is experienced when the player takes the controller, affects something, and ultimately gets a response to their actions. In this interplay of player, controller, and answer, it is not the actual interaction that is the most important part, but rather the consequence of the thing that is being done. The player can expect to feel agency when they interact in a meaningful way, but it is not until the reply that agency can be achieved (Murray 1997, p. 127). To understand how this study uses agency to research game design, different definitions are presented in this chapter along with relevant research.

2.2.1 Defining Agency

When it comes to creating agency for the player, the number of choices is not important. Agency is not dependent on how many roads, dialog choices, or gameplay options the player can choose between. To create agency the player does not need to be offered a large amount of choice, but rather needs to be offered choices with meaning behind them. The player should have a reason to choose any of these choices, with as much knowledge of what these choices carry. According to Janet Murray there is a stronger agency in three choices in which the player has context, information about consequences, and ideas over the outcome, than a hundred choices that the player cannot know, or is unsure of, the outcome (Murray 1997, pp. 126–132). What Murray means is that the player must be offered choices that are meaningful in the game's system. Agency emerges when choices affect the outcome in a way that the player also receives feedback on. Digital media can then effectively increase the player's perception of agency, since they have the opportunity to clearly show how the player's actions affect various systems as well as interactive game worlds (Murray 1997, pp. 148–152).

In a game like *Baldur's Gate* (BioWare 1998) the player is given options in the form of text responses, things that their avatar will say to other characters in the game world. But the

player also has the choice to kill almost any character in the game world, effectively hindering themselves from playing a large portion of the game, the dialogs. When the player makes a choice in a dialog, the response is immediate, and the effect on the game world often apparent either directly, or within a few minutes of playing. When the player kills a character instead of extracting information from them, they are often left with no clue what to do next, or where to go. With Murray's definition (1997, pp. 126-132), the player should in this case be left without any real narrative feedback on their action, apart from hostile actions from nearby characters. There is no heartbreak, no scene of betrayal, or tragic end for beloved characters. The only thing that can react to this is some companion characters might give a generic negative comment of the player's actions, and leave or attack the player as well. The developers of *Baldur's Gate* left the choice to kill anyone in the game so that the player could experience agency from being able to do anything, but very few play the game this way. Especially during their first playthroughs, when they have little knowledge of the game's systems. The reason for this is because the developers did not create any unique content for these choices. To kill everyone in the game is not a meaningful choice in the narrative. It is just a murder simulator without any connection to the original story. Without the meaningful choices, the player does not experience agency.

Murray's definition of agency (1997, p. 126) is however more than twenty years old, and has been criticized as a standard for game studies. Wardrip-Fruin, Mateas, Dow & Sali (2009) argue that agency is about the interplay between a game's possibilities and what the player wants to do in it. By placing focus on this interplay they develop Murray's definition. According to Wardrip-Fruin et al. (2009) agency is to interact with a system that suggests possibilities. To then satisfy the player's agency is to balance how many dramatic possibilities that are presented with the amount of choices that the player can actually choose between. The game's possibility and what the player wants have to correlate in order for agency to be experienced (Wardrip-Fruin, Mateas, Dow & Sali 2009). Their definition is stricter when it comes to how agency is created, as it can only exist directly in the game's input. This means that they only consider the agency to exist when for example a button on a controller is pressed down, or a command is executed directly by the player. Mainly they focus on the correlation between possible choices, and the player's wishes.

Karen and Joshua Tanenbaum (2009) argue that the simulated worlds that exist in modern video games no longer fit with Murray's definition. These newer games focus on player freedom and expression, with developers purposefully wanting players to act unpredictable within the game world.

Today, not only is it *possible* for unanticipated and emergent player actions to occur, in many games it is *expected*. These expectations have given rise to a shift in the notion of agency, away from *choice* and toward *freedom*.

(Tanenbaum & Tanenbaum 2009, p. 2)

According to Tanenbaum and Tanenbaum (2009) a new definition is needed, one that fits better with this new paradigm within game design striding towards player expression and freedom. They suggest that the focus should not lay on the results when it comes to identifying agency. Instead they see agency as something that lies in the player's intent. They take as example a scene from *Metal Gear Solid 4: Guns of the Patriots* (Kojima Productions 2008) where the player is forced to press a single button, over and over again for several minutes. There is no real choice in this scene, apart from perhaps turning off the game, but

the player still experiences agency in this moment because of how immersed they are in the game. Agency is then not about making choices that affects the game, but rather about the player expressing intent in the game's mechanics and receiving a satisfying response. In this case, it does not matter if the mechanics are a choice or just an input, if the player is immersed enough for their intent to be aligned with the game's, then agency is achieved (Tanenbaum & Tanenbaum 2009). A developer would have to make the player care about the game's content and mechanics enough to make them express their intent, and making that intent align with what is possible to do in the mechanics.

As long as the player's desires align with the game's content, it does not matter if the game is linear or branching in its narrative. It instead becomes a play on expectations. If a player expects to get a certain response by pressing a button, then that response, as long as it is satisfying, will create agency for the player. Then what if the player performs an action, and gets a response that is satisfying, but not one that they expected when they performed the action? Then by Tanenbaum and Tanenbaum's definition the player does not experience agency, but rather just satisfaction in the happening event. It is only when they player makes a conscious decision and gets a satisfying response that agency is created.

The game *The Legend of Zelda: Breath of the Wild* (Nintendo EPD 2017) is a prime example of this correlation. This game is designed to give the player the ability to go wherever they want, whenever they want to. At no point does the game force the player to do things in a specific way, or go in a specific direction. Even the more structured goals in the game allow the player to complete them in their own way. The player's possibilities in what actions to take in the game's narrative are nearly endless. This way, the dramatic possibilities of the player are perfectly linked with the player's actions, thanks to the narrative being completely interlinked with the player's freedom in the game world. As opposed to other open world games like *Grand Theft Auto IV* (Rockstar North 2008) in which the narrative tells of a protagonist who seeks to avoid conflict, while the player can actively seek and is often encouraged to revel in it.



Figure 4 *The Legend of Zelda: Breath of the Wild* (Nintendo EPD 2017).

While these varying definitions all focus on different aspects of agency, when it comes to implementing a positive experience in interactive mediums, there are a number of core values that drive positive player agency. One of the most important factors in creating agency is the feedback. No matter how much choice is given to the player, and no matter how many lights flash before their eyes, if the player isn't given satisfying feedback on their actions, there will be no feeling of agency in their actions. If they cannot see, feel, hear, or be conscious of what the consequences of their actions are, then to the player these actions might as well have never happened at all.

The listed definitions show that agency can be produced in a setting where the player is given the choice between a number of outcomes in both a narrative and mechanical sense. They also show that the number of different ways that these choices can be presented in the game can affect how agency is perceived while making playing. Going by this, the event box that is commonly used in grand strategy games would be effective for measuring agency in players, as these are short choices within otherwise larger experiences that give the player both a narrative and mechanical option. Especially effective is the fact that these event boxes in most cases give direct feedback on their outcomes, and in the few cases that they do not always have follow up events appear after a short time which promise to give an outcome. Either way, the event box qualifies strongly to be used as a tool to measure perceived agency in different types of interfaces. The definition of agency that this study focuses on is Tanenbaum and Tanenbaum's (2009) definition of agency as it focuses on the player's intent in the presented choices and is not based on the number of choices or the precise ways of input to get to those choices. Agency is experienced as long as the player has the ability to express themselves and receive a response to their intent. How strongly that agency is, depends mainly on the satisfaction they felt in the response, both in the short term – meaning the direct feedback of pressing the button - and in the long term – meaning the later implications of their actions and their feeling on them after they have finished playing.

Agency is a phenomenon that can be experienced, sensed, and felt by the player as they receive satisfying feedback on their intent. One can create agency for someone else by creating the possibility of satisfying feedback on different types of intent. To then gift agency is to gift satisfying feedback. To what extent this feedback is satisfying depends entirely on the player's intent, which is can at times be either easy or hard to predict. In this study these ways of referring to agency are used interchangeably depending on the context. At certain points the study might focus on "creating agency for the player" which simply means creating the possibility of perceived agency for the player depending entirely on their expectations and intent. Shortening this to "creating agency" is an attempt to make the language used more comprehensible.

2.2.2 Implementing Agency

Ernest Adams (2010, pp. 315–319) speaks about a way to structure games in order for the player to understand what ramifications their actions have. Challenges have to be shown and explained in an obvious manner so that the player can continue playing with an as clear outlook on the interaction as possible. The game also has to show how well these challenges are completed, as well as give the player the ability to check up on their progression and previous challenges. Once the player has complete knowledge on how the challenges should be tackled, choices made will also be made with the player knowing about possible consequences. It is important that the player understands and has that knowledge about choice's consequences on the game world in order for them to be able to express their intent

and receive a satisfying response. When this happens they can then achieve a strong sense of agency in the game's choices (Tanenbaum & Tanenbaum 2009).

In the game *Mount & Blade: Warband* (TaleWorlds Entertainment 2010) very little is revealed initially about its systems and mechanics. Starting out, *Warband* is a game about exploring and growing, where the player travels a world, builds an army, fights against progressively stronger foes, and gets progressively stronger. However, no new player will go into the game thinking that they will one day control a large portion of the world as a ruler, as they start out as just a simple wanderer alone in a big open world. The choices made early on, such as where to fight, what lords and kingdom to ally with, serve, and live under will affect the player's later gameplay, but it will not be a deliberate choice. The player is not, as Adams says, given a clear and visible introduction to each of the kingdoms and lords. Rather, the player is left with the choice of choosing a starting kingdom right after they have created their character. The player is given information on how to travel to the kingdom, and what its name is, but nothing else.

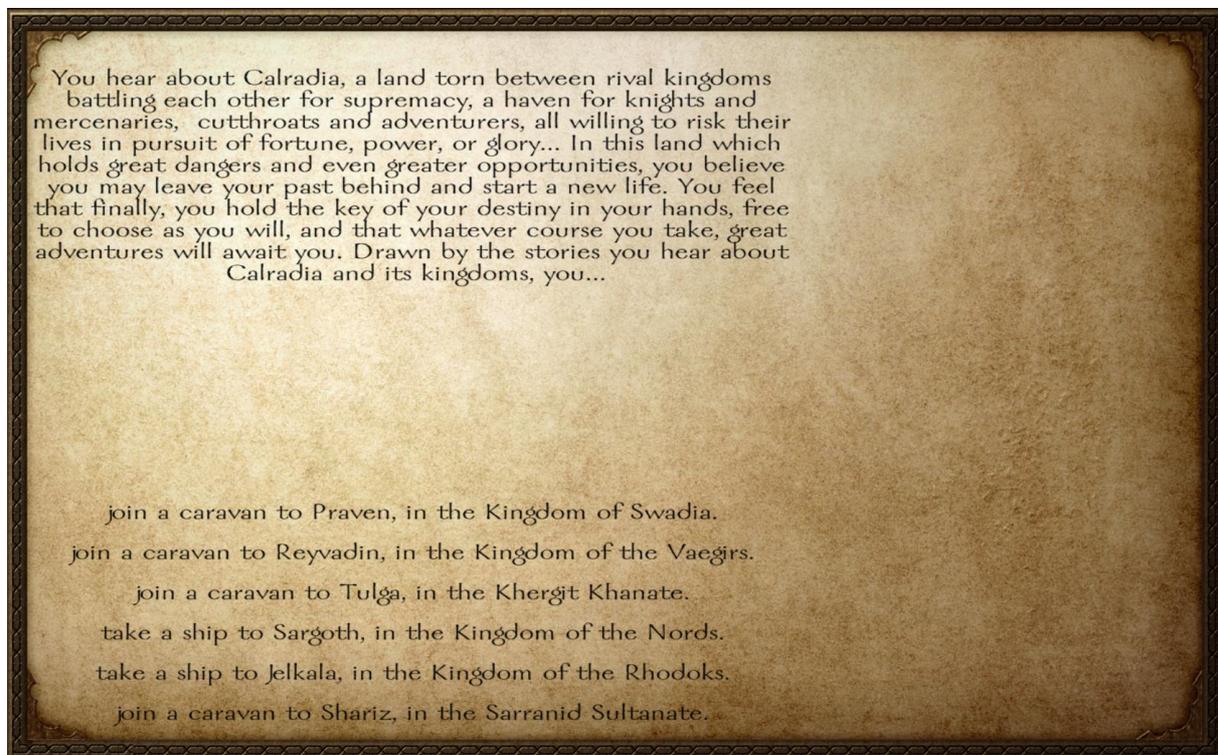


Figure 5 Choice interface in the character creation of *Mount and Blade: Warband* (TaleWorlds Entertainment 2010)

Compare this to a game like *Europa Universalis IV* (Paradox Development Studio 2013). EU4 is a strategy game primarily about simulating a historical nation state. In it, the player is given information about everything, as well as the power to tweak almost everything. Unlike *Warband* which prides itself in not showing the player information about mechanics and the game world, EU4 makes everything visible. From every coin in the budget, to the well-being of every province on a massive world map, the player is allowed to take in nearly all possible information and use it to their advantage. The only difference between a skilled and new player is the ability to know what to do with this massive amount of information. Instead of holding back on information and making the discovery of new things in the game into a moment of unexpected revelation, the game instead allows the player to make each discovery

an act of agency. Whenever the player discovers a mechanic, or an interaction, or a piece of content in the game it is done through their own choice and calculation. The player is always able to choose how to interact with its many systems, and each successful step into understanding how this interaction works allows for a satisfying response.



Figure 6 A view of the budget in *Europa Universalis IV* (Paradox Development Studio 2013)

Both of these games create agency by allowing the player to set goals for themselves in a vast open world, but they have very different ways of conveying that world. *Warband* sets out to make the world a mysterious place the player has to explore, while *EU4* sets out to make the world a series of systems that the player just has to learn to comprehend and control to the best of their ability. Both are fine ways of creating interesting gameplay experiences, but by Tanenbaum and Tanenbaum's definition of agency, it is *EU4* that would create the most agency for the player, since it allows the player to fully express an intent in the game's systems. However, this is of course only possible if the player has taken the time to fully understand all of these systems, which itself can be a major obstacle. For this reason, even other open world games that value freedom like *The Legend of Zelda: Breath of the Wild* (Nintendo EPD 2017) have a short introductory sequence where the player is forced to learn basic controls. If the player cannot even play the game, they cannot express any intent either.

A way to handle choice interfaces in order to increase the player's sense of agency is to make sure that the player receives feedback even when those choices do not actually have any actual impact on any systems or narratives (Fendt, Harrison, Ware, Cardona-Rivera, & Roberts 2012). Something that Fendt et al. finds problematic in branching games is that every player only gets to experience a small part of the game's content on each playthrough. In their study Fendt et al. compared how agency was perceived in three different games, one linear without feedback, one linear with feedback, and one completely branching story with feedback. Their attempt here was to see what exact role the feedback played in the nature of linear and branching interactive experiences. Their results showed that perceived agency increased drastically by the participant seeing feedback to their actions in the linear story to

the same degree as in the branching story. It didn't matter if those actions had any real impact, as long as the player thought they were. The illusion of feedback was just as effective as actual feedback to create perceived agency. Their suggestion then is to let the player get clear feedback on their choices, even if they do not affect the game world in any major way. This will then lower the amount of work required to create high agency in the game, and let the developer focus on other aspects instead (Fendt et al. 2012). The most important thing for agency to be felt in the player is for them to believe that they have affected the game world, not that they actually have – but important to note here is that this effect was only tested by Fendt et al. on a single playthrough. In multiple playthrough where the player would explore alternate paths the player would then break the illusion of choice within the linear story. The logical conclusion here would be that the player wouldn't get an as strong sense of agency when they can see that their choices have no impact on the outcome, and simply seeing the feedback as fake. But in the case of a study where participants would only ever explore a single playthrough, the linear story with feedback would be preferred in order to not create too much work for the researcher.

In *Planescape: Torment* (Black Isle Studios 1999) the player will always experience the same areas, the same major plot points, and the same major revelation in the narrative no matter what input they make. As long as they progress through the story, they will experience its core the same every time. There is a massive amount of choices along the way however. From choosing to talk to certain non-vital characters or never even looking at them, to finishing challenges by using unique and creative solutions, every playthrough of *Planescape: Torment* will be a new experience. But the core narrative will always be the same. The main story, which focuses on the protagonist's goal, can have its context changed, but locations and important characters will stay the same. Minor narratives that focus on companions and non-playable character can change in more ways however, since the choices made within them will not affect the main story in any way. In fact, the player does not even have to see minor narratives in order to complete the main story.

The dialogs in *Planescape: Torment* are branching, and will only show the player a percentage of their content on each playthrough. But the few cutscenes that exist, and the many major plot beats that the player has to go through to progress are always the same. The way they are perceived might change from player to player, but the core story will stay the same. What is interesting with the game's interactivity is that the player is never sure what content is missed when they make choices. There is not info graphic showing them what could have been. In this case, the player would not even be fully aware of the content that is missed in the experience. If the player runs past a character that would entail several hours of optional gameplay, they will have no way of knowing. It is clear by the data collected by Fendt et al. (2012) that this type of game design is not ideal if the player is supposed to experience everything in one playthrough. But when it comes to creating a deeper world that is supposed to be experienced several times over, then this type of design can create depth for the experience. Albeit at the cost of allowing the player to unknowingly skip large portions of the game. If the player made a conscious decision to skip the content, then it would add to agency that they would be allowed to do so. But just skipping it outright would mean no benefit to player agency or to the player's general experience.

To get a deeper understanding of agency it is also relevant to look at Roth and Vermeulen's (2012) study where they split agency into two parts. The first part is local agency, which is affected by the more personal bits within a narrative. This would be characters, their

development through the story, their actions, as well as what happens in the story in specific scenes. The other part is global agency, which is affected by the broader strokes of the story along with its final outcome. In their study two groups got to play through an interactive story with two different introductions. One of them highlighted the story's effect on global agency, and the other one highlighted local effects. One group also got to hear sounds whenever they affected local agency variables and the other whenever they affected global agency variables. The study's results showed that global agency gave the player a better opportunity to immerse themselves in the experience, but that the satisfaction was unchanged between the two groups. Two important pieces of information can be extracted from this study. The first is the difference between the personal local agency, and the more impersonal global agency in this study's context, since these two did not have any differences when it came to perceived agency as a whole. This means that the difference is only important to keep in mind when dealing with immersion and how the game lets the player get immersed. The other important piece of information is that feedback is incredibly important when it comes to letting the player get a sense of agency. In Roth and Vermeulen's study they even used blinking lights just to make sure that the participants always were aware of exactly when and how they affected the game's outcome (Roth & Vermeulen 2012).

Once the player cares about the experience, they can start to express themselves in the game's systems. When they express an intent and receive a satisfying response on that intent they will get a sense of agency (Tanenbaum & Tanenbaum 2009). But in order for them to care then the choices available have to feel meaningful to the player. A branching story will automatically make the player's choices matter on a technical level, as the different choices will always lead to different results. But in order for choices to feel meaningful even before they pick them, it is important for the player to understand fully how the choices differ from one another as well as how they affect the game as a whole (Heussner, Hepler, Finley & Lemay 2015). This is especially important before the player picks, when they are in the state of evaluating and weighing the choices before picking. If games can achieve this goal, so that the player has a clear view on the choice's context and gets to experience the consequences afterwards, then the choices will feel meaningful.

When the player arrives at a place in the story where they get a number of choices, it is important that the player does not feel forced to pick a specific narrative road. If the player is forced to pick something that they feel is not consistent with their previous choices, or if their choice is ignored in favor for the game to move in another, also not consistent direction, a phenomenon called railroading happens (Heussner et al. 2015). This is a feeling that the game forced the player in a specific way. To require the player to move in a certain direction or to a certain place is required in order for most games to function properly. Total freedom is impossible to offer in most interactive stories due to budget and time constraints. It is then necessary to keep the player in a certain direction through the narrative. The challenge here is then to get the player in that direction without annoying or destroying the player's experience. When this is handled well the player will get a good experience. When it is handled badly it leads to railroading, which makes the player feel hindered in their experience and will make them feel like their choices are not meaningful. In the worst case it can even make the player want to stop playing completely (Heussner et al. 2015).

In the artifact for this study agency was interpreted according to the definition by Tanenbaum and Tanenbaum (2009). The artifact will focus on letting the player get the possibility to express their intent and get a satisfying response on that intent. The reason

why this definition is used is because of how this expression of intent manifests within the narrative and mechanics events used in grand strategy games, as well as how pure these events are in letting the player make choices from a very clear context, outcome, and narrative function. Nothing is hidden within these events, and a sense of agency is achieved here when tactically thinking about these events boxes and then expressing intent by simply picking a choice. There is no confusion, nothing complicated in the interface. It is just the player, the choices' context and outcome, and the player's intent with these choices.

2.3 Immersion and Dynamic Content

An important part of understanding how the player interacts with event boxes is to also understand how the game lets the player immerse themselves in the experience. In this chapter the concept of immersion is explored in order to properly understand its significance in creating meaningful choices. After this the chapter delves into how event boxes and dialogs use dynamic content for different effect, often giving the player feedback on their actions in a multitude of ways.

2.3.1 Immersion

Immersion is a term that is often used to describe a phenomenon common within games. Janet Murray explains that immersion is a metaphoric term that comes from the feeling of being lowered into water (Murray 1997, p. 98), but in this case points more towards the engagement or involvement a person feels when they play a digital game (Cairns, Cox & Nordin 2014). Brown and Cairns (2004) made a qualitative study with the purpose of reaching a definition of the term based on the player's experience, along with an explanation of how immersion works on a detailed level. Their results show that immersion is used to described several levels of engagement that the player feels in a game, as well as that this engagement is blocked by different barriers such as concentration and play structure. When these barriers are lifted, three different levels of depths of involvement can be reached within the player. The first one they call engagement. In order for the player to reach this level they do not have to invest anything other than a basic attempt to play, which include time investment and attention. The second level they call engrossment. To reach this the game's structure has to be able to reach out to the player and affect them on an emotional way. These two levels could be described as sitting down and watching a movie and then having an emotional response to whatever is happening on the screen. The final level of immersion they call total immersion. This level is reached once the player's attachment to the game is enough for them to lose themselves in the experience, together with a perceived notion of a strong atmosphere in the game world (Brown & Cairns 2004).

The final level of Brown and Cairns categorization of immersion, total immersion, is defined with the term presence. This is something that Cairns, Cox and Nordin (2014) bring up as problematic in an analysis of the qualitative interview method they used.

What should also be noted was that being "in the game" was not a statement about spatial or social location. It was about the cognitive state of the player and could happen in games like Bubble Bobble where there is no meaningful spatial or social location for the player to inhabit. This is important when thinking about immersion in terms of presence and, as will be seen, why the term presence for total immersion was incorrect.

(Cairns, Cox & Nordin 2014, p. 3)

What is later explained is that the term presence covers immersion in many cases, as it focuses on that the player feels almost inside the game. But presence cannot be said to be the same thing as immersion, because of the fact that immersion cannot be reached in games where the player does not have any social or spatial presence – something required for presence to be achieved. In other words, there is no necessary connection between the two terms, even if they can be achieved at the same time and even build upon and help each other (Cairns et al. 2014). Cairns, Cox, and Nordin (2014) collect a number of older studies, including the one performed by Brown and Cairns, as well as literature about immersion in order to construct a clearer picture of the term. Aside from this they also inspect specific functions of immersion by comparing two different types of games, one with a first-person perspective, and one with a bird's-eye perspective. Their work contributes two relevant pieces of information for this study:

The first is the function of immersion for both player and developer. According to Cairns et al. (2014) immersion is a measurable phenomenon that is affected by both the game's content and social influences outside the game. Immersion does not only contain attention and is, in contrast to the definition by Brown and Cairns (2004), not just an obstacle that has to be overcome but instead only a related phenomenon. When immersion is to be achieved it is important that the player gets response on their action, that they need to think about their actions, and that they run out of things to do in the game world (Cairns et al. 2014). But it's important to realize that the study by Cairns et al. does not bring forth immersion as a completely defined term. Instead they argue for different elements that affect and are affected by immersion, which could be used to create an immersive experience for this study's prototype.

The other relevant information is the results of their study, from their comparison of two games. In the first game the player would control a character while looking at the character through a limited two-dimensional bird's-eye perspective, and in the other game the player would control a character while using a first-person perspective in a three-dimensional world. In both games the player would guide their character through a labyrinth, and in some cases music was played while the player was shown a stress-inducing time limit. When this music and time limit started, Cairns et al. (2014) noticed that the immersion was increased, in comparison when the music and time limit was not used. Challenging or strenuous elements of the game then created more immersion for the player (Cairns et al. 2014). It was also witnessed that the two games did not have any difference in immersion for the player. Whether the game was two-dimensional or three-dimensional, from a first-person perspective or bird's-eye view, players of both games reached an equal level of immersion through their experiences. This point towards that player engagement in an interactive experience is not mainly affected by perspective, but rather more by the pressure and challenge within the game. In the older study by Brown and Cairns (2004) it was observed that the majority of mentioned games that were considered to be highly immersive had a first-person perspective.

In order to create an artifact effective at delivering an immersive experience for this study, it was important to collect information about the term immersion to then use it during the creation process. Whether the game is two dimensional or three dimensional would not affect the player's ability to be engaged in the experience. It is important to know that the player should not lose track on what their goal is during gameplay, or believe that their actions have no impact on the experience (Cairns et al. 2014). The player searches actively to

feel immersion in their game, and work towards focusing on the experience (Murray 1997, p. 99). At the same time the prototype needs to reach out to the player on an emotional level in order to them to feel a deeper level of immersion (Brown & Cairns 2004), which puts focus on the interactive artifact's ability to do this.

2.3.2 Dynamic Content

Agency can be described as the player expressing intent and receiving a satisfying response to that intent (Tanenbaum & Tanenbaum 2009). But when designing mechanics to make use of agency it is important to realize that there is no real time limit on exactly when this response should occur. If the player makes a simple choice like for example playing as a tall or short character in the beginning of the game, then seeing their character all throughout the game will act as a constant reply to the original intent. The only requirement for giving the player a sense of agency after they have made a choice is that they are able to recall what the choice they made was. If the player does not remember what they picked, then by definition they cannot receive a satisfying response since they do not remember what they asked to begin with. It is important then to remind the player of their choices continuously through the gameplay, perhaps by giving minor responses throughout before paying it off in the end.



Figure 7 Character creation in *Planescape: Torment* (Black Isle 1997).

Digital role-playing games like *Pillars of Eternity* (Obsidian Entertainment 2015), *Baldur's Gate* (Bioware 1998), and *Planescape: Torment* (Black Isle Studios 1999) often begins by letting the player create their own character. This character can be implemented in several different ways. In *Planescape: Torment* the player cannot create a character from scratch, but rather gets to adjust characteristics of an already established character with a name, backstory, and appearance. This is different from *Baldur's Gate* in which the player gets to control much more about their character. Apart from being able to select a class and attributes for their character, the player also gets to pick a portrait and name. In both *Planescape: Torment* and *Baldur's Gate* these choices affect the game in various ways

during the playthrough, from beginning to end. In *Pillars of Eternity* the player is constantly receiving responses on their choice of attributes in the game's dialog options. If the player chooses to see unavailable dialog choices then these responses become even more frequent, as there are always choices that they cannot pick directly because they chose to focus on something else in the character creation process. It is one big choice that affects the whole rest of the game, and whether that's a good or a bad thing could be argued to depend on how much the player would have wanted to pick those unavailable choices to begin with (Bodegård 2017).



Figure 8 A dialog in *Pillars of Eternity* (2015)

These dynamic effects in an RPG like *Pillars of Eternity* that are affected by variables are one of the staples of the genre. To allow the player to get an experience that is tailored around their choices, both narratively and mechanically is something that any RPG focuses on heavily. As this study will be using event boxes in its artifact it is important to also define the types of choice interfaces that are used in interactive storytelling – specifically the dialog system used in most narratively driven games.

Brent Ellison (2008) describes a number of dialog systems that are used in games, and defines their functions within. He sees the two most common types of dialog system as branching dialog and hub dialogs. Branching dialogs gives the player's choices a permanent effect on the game world, and are often used to bring the story forward. These dialogs are based more on how people actually speak. Hub dialogs are on the other hand more unrealistic, but for a good reason. In situations where the player needs information from characters in the game world that could be useful to hear more than once, for example instruction or world building, hub dialogs are very effective. In these dialogs the player can treat the characters as vending machines, spitting out any required information whether they forgot, missed, or just did not pay attention the first time around. While there are occasions when hub dialogs have prerequisites, they are less likely to have them due to their inconsequential nature. The important part here is that the player should be aware of what choices are branching or hub, as they will not be given satisfying responses on these if they

are tricked into mistaking one for another. When games like *Planescape: Torment* mixes these two dialog types it always makes sure that the player is aware if their choice can or cannot affect the game world in any way. This makes both dialog choices useful for the player, and therefore makes them meaningful choices since they have actual consequences in the game world in for the player (Heussner et al. 2015).

There is also a major design decision to be made when creating a dialog system, one that differs between major role-playing games in the genre. In *Pillars of Eternity* the player gets to pick between dialog choices that contain complete sentences that are supposed to represent the exact thing the player's character says. In *Mass Effect* (BioWare 2007) the player gets to pick between general words and shorter quips that determine the player character's actions and the dialog's direction. These two types of dialog choices are called sentence selection when the player gets to pick between whole sentences and abstract response when they get to pick between shorter summaries instead (Sali, Wardrip-Fruin, Dow, Mateas, Kurniawan, Reed & Liu 2010).

In modern role-playing games these techniques are both used to different effects. According to the study by Sali et al. (2010) these two dialog types affect the player in different ways. Abstract responses make the player engage themselves on the same level as sentence selection, but at the same time give a higher sense of control and lower feeling of satisfaction. Sentence selection is considered easier to use and gives more satisfaction than abstract response. But when it comes to this study's prototype it is the comparison Sali et al. does between how players involved themselves in the story that is the most relevant. In their study it showed that sentence selection made the player more motivated to get through the story, and that this dialog system also made it easier for the player to do exactly what they wanted to do in the story (Sali et al. 2010). This information can be used to argue that the choice interface design used in grand strategy games, where both full sentences and full consequence is spelled out for the player, would be the best to give the player a clear context around their choices and therefore easier access to feeling a sense of agency in the response. The player also has an easier time in general to express themselves clearly in the dialog (Sali et al. 2010) which is paramount when trying to let the player express their intent in the choice interface.

Event boxes in grand strategy games usually have different ways of handling the variables that affect their dynamic content than role-playing games. While in *Pillars of Eternity* (Obsidian Entertainment 2015) the character creation process is a very player driven process, where every little thing can be tweaked to the player's preferences. In *Crusader Kings II* (Paradox Development Studio 2012) there is also a character creator that is very similar to a regular RPG character creator. Though this character creator is not a standard part of the game, and is sold separately from the core game. In many ways it takes on the role of a different game mode than the normal way to play the game. *Stellaris* (Paradox Development Studio 2016) on the other hand has species creation as a part of its core gameplay, like in a role-playing game – only difference being that the player is making a galactic empire instead of a single person. In *Europa Universalis IV* (Paradox Development Studio 2013) the variables used in events are however not nearly as controlled as those in CK2 and *Stellaris*. In fact, the traits given to rulers of the player's nations are to the most part completely random and functions more as a way to make subsequent playthroughs more varied both in terms of general gameplay and events.



Figure 9 A communications window in *Stellaris* (Paradox Development Studio 2016)

As *Europa Universalis IV* has variables that are mostly random its prerequisites could not be considered as giving the player any agency, since there are never any conscious decisions when it comes to the ruler traits. Despite perhaps knowing about these traits, and when they got them, since they had no say in which trait was given to them, the player also does not get any satisfaction from seeing a prerequisite respond to that trait. It is important when trying to create a sense of agency in the artifact that the variables are based on the player's choices, not on things they have no control over. Otherwise, the prerequisite is not a response, but rather just another thing happening in the game world.

3 Problem

Interactive choice interfaces are used in many different genres of video games. From narrative driven dialogs in role-playing games like *Pillars of Eternity* (Obsidian Entertainment 2015) to mechanical menus in strategy games like *Civilization VI* (Fireaxis Games 2016), having the player make an explicit choice inside of a dedicated choice interface is a common method of giving the player control of the experience. This is true for both major and minor mechanics. There are several different ways of designing these interfaces to affect the player in various ways. *Europa Universalis IV* (Paradox Development Studio 2013) will often show the outcome of each choice before the player even clicks on them, giving them full control over the experience. There cannot, or at least should not, be any confusion when the player makes a choice in this system. However, in longer event chains in *Stellaris* (Paradox Development Studio 2016) or *Crusader Kings II* (Paradox Development Studio 2012) the outcome is not always apparent when making choices, and in role-playing games like *Pillars of Eternity* the player is never shown what the consequences of their choices in dialogs are, but are rather supposed to figure it out with only narrative (and if they choose to enable it) interface hints.

One of these hints that *Pillars of Eternity* uses is to show the player prerequisites of choices. In role-playing games and grand strategy games there are often options in dialog and event boxes that have requirements needed to be fulfilled before the player is able to choose them. These prerequisites might be attributes in a role-playing game, story variables in an interactive narrative, or ruler traits in a grand strategy game. Some games show that certain choices have prerequisites, often with tags, pictures, or differentiating colors as to point towards the choice as if to say: this choice is special, and you get to pick it because you fulfill these specific criteria. But at the same time, not all games show when choices have prerequisites.

This study focused on the design choice of either showing or hiding these prerequisites and how it affects the player. The reason for why developers choose to show these prerequisites might be because they want the player to be aware of when their earlier choices are having an effect on the experience. Or perhaps they simply want the player to be aware of when a certain choice has a certain effect. For example, in *Pillars of Eternity*, a choice might be labeled as “Intellect” and thus be presumed by the player to be a smart or intelligent choice. At the same time the developer might not want the player to presume the choices to be a certain way, but rather want them to figure it out by themselves. It might even become frustrating for the player if they wanted to pick an answer that is not labeled as “Intellect” while the answer that is “might” seems as the better answer because of the label. Many of these situations depend on the design and structure of the choices, as well as their context. A designer would have to avoid these pitfalls when they create a dialog or event by play testing and analyzing the effects that the labels have on the player. But how does the visibility of these prerequisites affect the player’s satisfaction and enjoyment of the game?

To answer this, the term agency was used. Agency is a phenomenon that is experienced when the player expresses intent in a system, for example a choice interface, and then receives a satisfying response to that intent (Tanenbaum & Tanenbaum 2009). In this study agency of participants was measured in order to find out how showing prerequisites affects their experiences. But in order for them to express intent in the artifact they first needed to care about the presented choices and engage in the prototype’s narrative and mechanics. The

choices must exist in a context that allows the player to understand their consequences, both before and after they are chosen. The choices must also exist in a system that is interesting enough in participants' eyes for them to engage in the story, and express themselves in the game. Only then would a feeling of agency be achieved in the participants.

The purpose behind this study was to gain a deeper understanding of interface design and how seemingly minor changes can affect the player's experience. The focus lay on choices with prerequisites built upon variables from other parts of the experience, such as attributes, traits, or narrative effects. The study reached a conclusion on the following research question:

How is the player's agency affected by seeing prerequisites of dynamic choices?

3.1 Method

A short strategic experience was created for this study. In this artifact the participants would first select a number of variables that would affect the rest of the experience. This would allow them to express intent in the system that would be rewarded later on in the artifact. Directly after selecting these variables, the player started playing a strategic situation. This situation was identical no matter the previous variables, and the player was given the proper context on this situation beforehand. The experience was structured in order for the player to be allowed to do a number of different things, such as exploring the map or spending resources. No matter what they chose to do, there were defined events occurring for the player while they're playing. Five of them were generic single choice events that give an immediate outcome and two of them were chained events that let the player embark on a slightly longer narrative, with the outcome being revealed once they made a series of choices. All of these events were based on the narrative of the player's situation and would let them choose different approaches for playing. For example, they might choose between different resources, different temporary effects on the game world, or different penalties. The events were balanced differently, and the participants' responses to each of these unique events were recorded for later analysis. The variables selected in the beginning of the artifact came into effect in these events as requirement for several of the answers. This was also balanced so that no matter what the participants picked in the beginning they would all receive alternatives that were only available to them because of what they picked. These choices with prerequisites were created to work in different ways in different events. In some events these choices were made to be much better than the other choices. Some choices with prerequisites were made to be as equal in perceived value as the other choices as possible. All these different types of events were used to find out exactly how the participants reacted to prerequisites when they were confronted with different contexts, mechanics, and balance between choices.

A possible variant on this artifact would have been to make an abstract choice interface, without any other sort of tangible gameplay behind it. This would allow the study to focus on only on the interface itself more closely, but also on the text, the narrative, and the experience of clicking the buttons. But the problem with this would be to make the participants accept the artifact as an actual game. If the participants could not immerse themselves and accept that the game was an accurate experience of how a real strategy game would be like, then they also could not give accurate and useful data that could be used to argue for showing or hiding prerequisites in these types of games. In order to accomplish

this study's goals it was therefore better to allow the participants to play an actual game along with interacting with a choice interface.

Half of the participants played a version of the artifact where choices with prerequisites were clearly marked as having a fulfilled requirement, while the other half played a version that hid any notion that these choices had prerequisites. It was the comparison between these two groups of participants that brought an answer to the research question. This method took inspiration from the study by Sali et al. (2010). In their study they compared three types of dialog systems on various areas such engagement and story involvement. They performed their study with the help of semi-structured interviews in order to discuss with the participants their experiences and bring out relevant data through these dialogs. In their study all participants were allowed to play through all three types of dialog systems, and essentially interact with all content produced.

A variation of their method (Sali et al. 2010) was used by this study, albeit with a smaller amount of test sessions and fewer topics of evaluation. Another difference was also that participants only played through the artifact once, as opposed to Sali et al. (2010) in which they had participants play through several different versions. If the participants were to play through the artifact several times then the effect of the knowledge of prerequisites would not be as effective on subsequent playthroughs. If the participants knew that a certain variable affects the dialog in a certain way, or even just that their choices affected the outcome in a certain way, then all of that would have had to have been analyzed in the conclusion in order for those subsequent playthroughs to be used as valuable data. Instead the study focused on making the participants only play one of the versions, and that each participant had no knowledge of how any of these versions were structured in any way. After this, the interviews held were analyzed and compared. The comparison was made between the two groups, one with and one without having visible prerequisites. The fewer variables measured in these interviews, as compared to Sali et al., allowed for a greater focus on the main topic of agency, and the shorter play sessions allowed the participants to invest and focus on the artifact's content, instead of focusing on the differences of any subsequent playthroughs.

3.1.1 Interview

In order to reach a conclusion on the research question there was a need to collect thorough data from the participants. Perceived agency is not easy to measure in participants, and required a detailed and meticulous process. One method that could give access to such complicated data as the participants' perceived agency was qualitative interviews (Østbye, Knapskog, Helland & Larsen 2008, pp. 101–102). A semi-structured version of qualitative interviews was used in order to bring forth relevant information with clear question, while at the same time allow for a minor dialog to grow with the participants. It was then important to understand what the participants wanted to do in the artifact, and if the choices available agreed with those wants. When the interviews were held, then the researcher also had to stay neutral in order for the participants to give impartial and accurate data on their experience. The participants' playthroughs of the artifact were also observed, since this method goes hand in hand with the qualitative method (Østbye et al. 2008, pp. 109–111), and because the choices made had to be noted for future analysis. At the same time, it was important to remember that the actual choices are only relevant to see if certain types of choices could affect the results in a way that could skew the measured agency. It was also important to see if the participants have any strong reaction to the choices, narrative, or mechanics during play, in case if they felt stuck, confused, annoyed, or were limited in achieving a sense of

agency in the artifact. While the participants were required to have the ability to play the game unhindered, there was always the possibility of any number of things going wrong during testing that could have been important to note down.

The questions asked focused on extracting information about their opinions, feelings, and satisfaction when it comes to choices in the artifact, and were based on theories of agency, game design, and immersion. When it comes to immersion the most important factor was asking questions about and discussing the participants' involvement and engagement in the artifact's mechanics, narrative, and the variables chosen at the start. To then make sure that the general experience was accepted as a believable game experience and not just a test, and therefore have the ability to give a basic level of enjoyment to participants, questions were also asked based on their subjective opinions on the game's mechanics and narrative. To then extract data on agency, the questions focused on getting to the participants' opinion on the choices they made and had available to them. The goal here was to extract information about how the participants felt about their ability to express themselves in the context of their choices, and how they felt about the choices themselves. It was also relevant to ask whether they felt that they affected the game's outcome to any degree. Follow up questions on this were related to their feeling about the choices, and if they would have picked something different if variables were different. Such as if the player knew about the outcome, or if they had the ability to make a different choice at any point during their playthrough. These types of questions, together with relevant discussion, would give data on the participants feeling and thoughts about the artifact's narrative, choices, mechanics, and overall quality. Even though these participants would have previous knowledge about the strategy genre, and played the artifact, it was still not certain that they would have knowledge about the more advanced concepts and terms that would be discussed in these interviews. Because of this it was important to ask questions that would not confuse the participants in any way, and that all of them would have had the ability to answer without advanced knowledge of how the systems work, its mechanics, or how other similar games tend to work. In these cases it would also have been preferable if the researcher instead focused the questions on other games, or other situations as relevant metaphors, in order for the participants to understand these concepts and be able to discuss them for relevant data.

These questions were attitude questions (Østbye et al. 2008, p. 141) and because of this they handled the subjective feeling and opinions of the participants. It was therefore important for the questions to be formulated in a balanced manner, so that their meaning could be conveyed without any confusion or bias. Because of the semi-structured approach used, the questions were open. This allowed for further questioning and creation of discussion, but the follow up questions then asked could not steer the participants in any direction. Østbye et al. explains that if there is a reason to ask, then that question must also be neutral in relation to the answers that could be given (Østbye et al. 2008, p.145). Everything in the interviews had to be held neutrally, and balanced in order to not affect the participants' answers. Østbye et al. also gives tips in the form on three questions that could be asked in this type of interview. These were, if the participant had an opinion, which direction the opinion was in, and what strength that opinion was in (Østbye et al. 2008, p. 142). These were to be used especially in follow up questions, when the participants have trouble answering the original formal questions. The researcher had to help the participants give relevant data, without tainting that data on the way out.

3.1.2 Target Audience

In order to ensure that the results of the comparison were not affected by any differences between the two groups when it comes to skill, experience, and other variables, a specific target audience was selected for the study. Since the strategy game genre can be challenging for new players, the logical choice of target audience would be those with experience of strategy games, enough to be able to play the artifact with an understanding of the context around their choices. Without this requirement, the participants were not expected to make meaningful choices, since they would not understand the choices available (Heussner et al. 2015). Not to mention that the testing would require a lot more input from the researcher if the participants could not play by themselves, therefore jeopardizing the neutrality of their experiences.

This is especially important in the measuring of agency, since the player needed to be able to express intent and receive and satisfying response on that intent to produce a feeling of agency (Tanenbaum & Tanenbaum 2009). In other words, individuals who would not be able to care about or understand the artifact's content would have to be avoided for usage in the study. The genre conventions in strategy games and grand strategy games were followed in order to produce an artifact that was an understandable example of a strategy game. Therefore, any player with a decent experience of strategy games could become eligible for being a participant in the study.

The number of participants was appreciated to at least ten people in order to get useful data. Since only half of the participants were playing each version of the artifact, it was five in each group that were then compared. If this number would have been below ten then the amount had been so small that any conclusions drawn would have to be strongly tied to the individual participants' characteristics and outlooks, instead of focusing on the general experience of playing a strategic game. It was this that the study was trying to find: an answer to the general player's reaction to a common design element. Having a broad target audience within this group of strategy game players, when it comes to variables such as gender and age, was key to progressing towards an answer. Optimally, the number of participants would have been a much greater number, since this would allow for more concrete evidence on the reactions of the general person in the strategy game audience, but this would be a problem due to time restrictions. Other variables within these the groups of participants were also analyzed in order for the comparison to be balanced. Gender, age, previous experiences, and other variables were used when dividing the two groups and making sure there was an even level of skill, diversity, and general experience. All participants would have to be adults, in order to avoid complications in the selection process.

Before anyone was allowed to participate in the study a number of questions were to be asked to the possible candidates. The most important of these would be the candidate's previous experience of strategy games, asking for examples and giving some if the participant has trouble knowing what exactly is defined as a strategy game. In this case, games like *Civilization VI* (Fireaxis Games 2016), *Crusader Kings II* (Paradox Development Studio 2012), *StarCraft* (Blizzard Entertainment 1998), and *Heroes of Might and Magic III* (New World Computing 1999) would be shown as examples, along with other games in their respective franchises. Their preferred systems and play styles would then also be asked. If the researcher finds that the candidate has enough experience to play the artifact without hindering relevant data, they would be accepted into the study. The participants would then be told about their right to stop the play test at any time, that they could ask any question

they want, be quiet or speak during play, and in general play the artifact in any way they saw fit. After this they would be allowed to play either the version with or without visible prerequisites. The version they played was determined in a way that divides the two groups into an even distribution of player skill, age, and gender in order to lower these variable's possible effect on any outcome that may have come from the comparison.

3.1.3 Method for Evaluation

The interviews were to be recorded and transcribed. These semi-structured interviews were then interpreted and analyzed. Relevant quotes and statistics from the interviews and the participants' playthroughs were then presented, discussed, and finally used to draw a conclusion. The results are nothing but an interpretation and are not, and never can be, an objective viewpoint on the participants' experiences of the artifact. But since the interview was the most effective method for extracting detailed and complicated information it is all the while the most effective method to be used to answer the research question. Other studies have performed similar research with the same method, such as Sali et al. (2010) as well as older studies in game studies like Brown and Cairns (2004). These interpretations were based on the participants' descriptions of their experiences, their opinions about its story, mechanics, and their choices' outcome. Each individual participant's agency was then compared in order to find differences and commonalities between them to find correlations and factors that might be interesting to mention or even analyze in depth. The two groups were also compared overall in order to find statistical differences and commonalities that could be used to discuss the research questions, and the many variables around it.

4 Implementation

In this chapter the implementation of the study's artifact is presented, along with how it could manage to answer the research question. First the inspiration for this study is shown alongside its general concept, to then afterwards more easily explain the various steps taken during the construction of the artifact. At the end of the chapter a pilot study is presented, along with the ways that it helped shape the final artifact.

4.1 Pre-study

The idea behind this study came from a practical question about game design. Should the developer show or hide prerequisites within choice interfaces? Should the player be allowed to know when and why their available choices have prerequisites? An older game like *Planescape: Torment* (Black Isle Studio 1999) shows a lot of differing design choices from a modern game within the same genre, such as *Pillars of Eternity* (Obsidian Entertainment 2015). *Pillars of Eternity* has a more streamlined interface, more direct control of characters, and generally a clearer view of the game's content for the player to experience. This is true for most modern games within the role-playing genre, for example *Shadowrun Returns* (Harebrained Schemes 2013) or *Fallout: New Vegas* (Obsidian Entertainment 2010). But when it comes to showing or hiding prerequisites, then the modern titles are all trying different things. *Fallout: New Vegas* shows the player exactly what kind of prerequisites each choice have in its dialog interface, even showing choices the player cannot pick along with why they cannot pick them. *Pillars of Eternity* allows the player to choose to show or hide prerequisites, most likely because there was no consensus on which design choice was the better for the title among the developers. But if the developer, Obsidian Entertainment in this case, chose to let the player make the decision themselves does seeing prerequisites have no differing effects in comparison to when they are hidden? Or is it the complete opposite? Or are different players affected in different ways? This study was founded with the purpose of trying to answer these questions surrounding a seemingly minor design decision.

The artifact's choice interface structure was based on the format used in grand strategy games like *Europa Universalis IV* (Paradox Development Studio 2013). Specifically, the event boxes in these types of grand strategy games. These boxes include short narrative segments that either have one-off effects on the game world, or give a longer chained experience through multiple event boxes. Both of these allow the player to quickly interact with a narrative that has a direct input and output visible to the player. They almost always know exactly what the outcomes of their choices are, as well as the outcomes of the choices they don't select. The narrative is, unlike role-playing games, not in the focus. The player can even ignore the narrative entirely, and just look at the mechanical outcomes in order to play the game properly. The narrative is there to give a clearer context to the mechanical outcomes, as well as offering interesting flavor to the gameplay.

The strategic part of the artifact, which represents the majority of the play time, was based primarily on the easily learned and basic gameplay of Tower Defense games like *Flash Element TD* (Scott 2008) and *GemCraft* (NTT Resonant Inc. 2008). Unlike games from the grand strategy genre, these titles are both easy to play, and available to a larger audience, which makes them good games to use for inspiration for the strategic part of the artifact. The narrative within the artifact is based on common fantasy tropes heavily inspired by the pen and paper role-playing game *Dungeons and Dragons* (Gygax & Arneson 1974). In these

stories the player often takes on the role of an adventurer or explorer in a medieval world filled with monsters and castles. The artifact was no exception to this, as the tower defense gameplay was given the context of a castle being invaded by monsters. The player had to then defeat these monsters before they arrived at the castle. The choices made in the narrative event boxes would then change variable within the gameplay, such as affecting resources or giving positive or negative effects on the defending towers.



Figure 10 Screenshot from *Flash Element TD* (Scott, 2007)

The variables selected during the beginning of the artifact, that went on to affect what choices are available during the events, were then also based on these fantasy tropes. There were three states that could be changed by the player at the start of the artifact, each of these inspired by variables available to change in the previously mentioned *Dungeons and Dragons* (Gygax & Arneson 1974), as well as more broad variables like where the defending castle was located. The differing locations were inspired by the game *Mount & Blade: Warband* (TaleWorlds Entertainment 2010) where in the player can choose where to start their adventures within a large world of diverse locations and cultures. Similar to *Mount & Blade* however, the choice of location had little to no effects on the actual gameplay. It was simply a choice of aesthetic, but this did not hinder the player from believing that this choice has more impact than it actually has, as long as there is direct feedback given to them after making the choice.

4.2 Production of the Artifact

Considering that the study's goal was to find the actual real life implication of showing or hiding prerequisites in strategy games, it was important that the artifact used for this purpose was an as realistic strategy game as possible. This meant having fully functioning

gameplay that allowed the player to make meaningful decisions, interact with a system, and think tactically about their choices. At the same time, the gameplay needed to be contained within the short time frame. Unlike grand strategy games like *Europa Universalis IV* (Paradox Development Studio 2013) the artifact could not possibly take place during hundred hours of gameplay for each participant. Instead the artifact included a shorter and more focused gameplay experience based on the archetypical tower defense genre, of games like *Flash Element TD* (Scott, 2007). These types of games were often built as more casual experiences that start off both easy to learn and easy to play, to then get progressively harder as they go along.

In order to customize the artifact into a regulated and precise experience for participants, the choice was made to create it from scratch using the game engine *Unity* (Unity Technologies 2005–2018). This allowed the artifact to be focused on giving a simple and clear strategic challenge, while also giving a regular strategic game experience. Had the study used an already existing game or title, then the participants' previous knowledge of that title would have to be taken in to account, along with any parts of the title that would not be relevant to the study. One important thing to question here was the ability of the researcher to create an experience that would be deemed as a realistic tower defense by the participants, especially when it comes to graphical fidelity. The Unity Store was used, a built-in tool within the Unity engine that allows users to browse and access a large library of free assets for game creation. This allowed the artifact to have a certain quality look on it, without putting time pressure on the study itself.

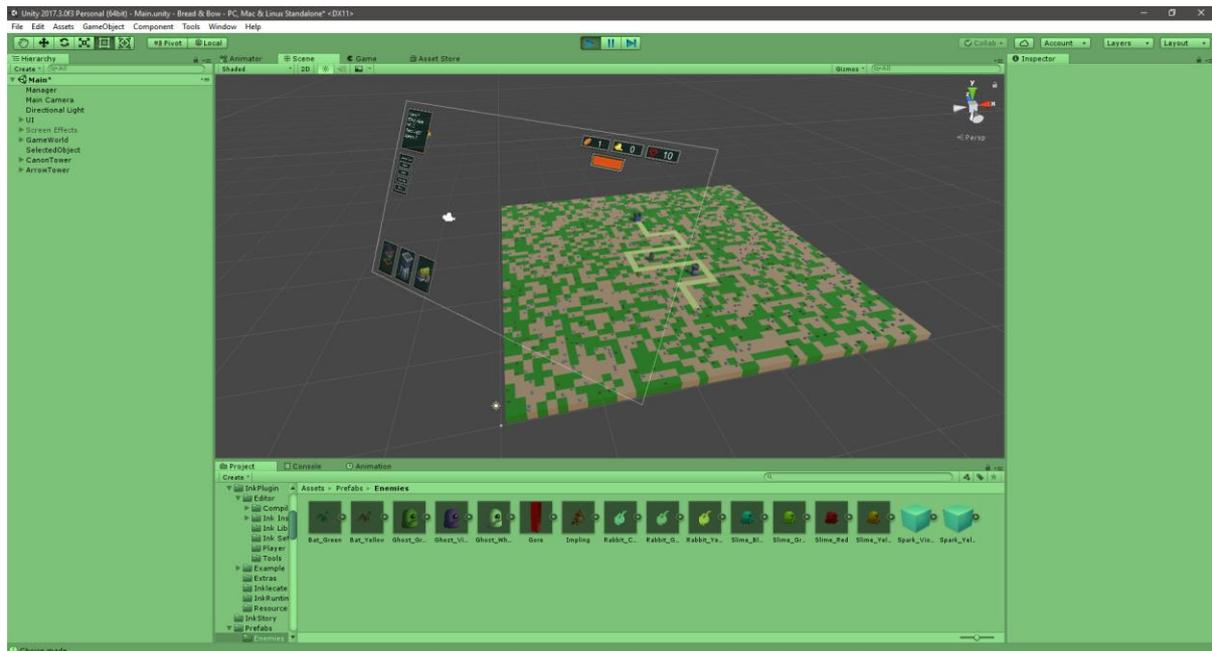


Figure 11 Screenshot of the artifact in *Unity* (Unity Technologies 2005–2018).

The artifact's strategic gameplay included placing towers in exchange of resources, making sure that the towers' damage types are effective against the current enemies, upgrading the towers so they stay powerful enough for the growing enemies, and making sure that there is enough food or bread to continue building and upgrading towers. All of these interactions were done through either easy to understand interface buttons or by intuitively clicking on the screen and objects.

In order to implement the event boxes within Unity, the script language *ink* (Inkle 2018) was used. This language has the ability to efficiently integrate an interactive text-based node system with player input and variable-controllers into the Unity game engine. With Ink all the events of the artifact could be written and structured simultaneously as the development of the artifact was under way, without it affecting the rest of the gameplay or workflow. The *ink* language is primarily used for creating interactive narratives within games, especially the types of hub and branching-type dialog trees (Ellison 2008) used in many role-playing games. The usage of *ink* was then also perfect for creating event boxes, as they contained the same functions of text-heavy interactions and choice interfaces. The scripts were structured (see figure 10) to first give the hover information, then give the narrative text, and then give the different choices that are available. As shown in figure 10, there were a number of lines that were only available if certain conditions are met, both in the hover text and in the choices.

```

INCLUDE Variables.ink

1# Gain +5 gold
2# Gain +2 food
{location == 0: 3}X# Gain +3 health
{location == 1: 4}X# Gain +3 health
{location == 2: 5}X# Gain +3 health
A rider comes to your castle at dawn, carrying dire news. <>
Not far from your home a portal has emerged, horrifying monster and aberration spewing forth from it like a toxic tidal wave of destruction. <>
Your people gather around you, pleading for you to take action. <>
But what could you possibly do to prepare for such an invasion?

+      Collect taxes in advance, for the good of the realm.
      ~gold = gold + 5
+      {location == 0 }\[Forest\] Chop down the forests and set up barricades around the castle.
      ~health = health + 3
+      {location == 1 }\[Desert\] Buy some mercenaries from a local caravan.
      ~health = health + 3
+      {location == 2 }\[Tundra\] Crack the ice of nearby lakes to give you time to reinforce the castle.
      ~health = health + 3
+      Send out guards to protect farms near the portal.
      ~food = food + 1
-
->END

```

Figure 12 *Ink* script used in the artifact.

A choice interface was built in Unity that was based on the style of event boxes in games like *Europa Universalis IV* (Paradox Development Studio 2013), where all the narrative text is shown openly to the player and all available choices are given explanations through hover boxes. Hover boxes are interface elements that appear when the player holds the mouse pointer over a specific button, and information about that button appears in that box. The important usage of these boxes here were to give the player knowledge of exactly what will happen if they press that particular button. The two versions of the artifact differ in design here, as one showed that certain choices have prerequisites, and the other does not. The player was shown this information through the hover box, as well as through a faint color tint of blue on the choices that have prerequisites.

The artifact technically used a system called “real-time with pause” (Valve Corporation 2018), since the gameplay is paused at intervals. However, unlike most games with this type of time system, tower defense games don’t let the player pause themselves. Instead, the game is paused whenever a wave is finished, and continues after one hundred seconds. In the case of this artifact, when an event box appears between the rounds, the game is paused indefinitely until a choice is picked. This was done to not stress the player while looking at their options, while still not downplaying the threat of the monster coming to invade.

During the play session, the participants faced off against a series of waves, each of which contains a number of enemies that were trying to get to their castle. These waves of enemies

walked along a road that goes in a pattern towards the castle. The towers were then designed to be placed alongside these roads, in order to optimally reach as many enemies as possible. The player got to place three different types of towers, each of which could be upgraded into three additional towers. Only two of the starting towers were capable of dealing damage however. The third tower is a house that increases the player's food resource. Food was needed when placing and upgrading towers, so a balance between houses and damage dealing towers needed to be achieved in order to survive each wave. The waves became increasingly more difficult, and as such the player needed to take enemy weaknesses into account, as well as what towers to spend resources on. All the information on damage types and defense types were always displayed to the player in order to never confuse them. The tactical challenge offered by the artifact then became to use the information that is given to make an informed decision. This was done both in the regular gameplay and in the event boxes themselves.



Figure 13 The artifact's tower defense gameplay.

4.3 Dynamic Content and Structure

The event boxes appear before the player at the end of certain waves, when the last enemy has been destroyed. In this box the player gets to read a short narrative, and then select between multiple choice buttons, each of which has their outcome clearly presented. At no point is the player forced to read the narrative, but rather is allowed to indulge in it if they please. If they find it more interesting to simply read the mechanical outcomes of their choices and nothing else, then that is allowed and not discouraged. It is important that the player does not feel like they have to try to play the artifact in a way they would not naturally do, since that could interfere with the results. However, all events were not structured the same. Among the others, one set of events were chained along with each other, making previous choices affect the later event story and outcome. This is clearly indicated to the player, so that they would not be surprised by the sudden occurrence of an event that does not have an instant outcome to it.



Figure 14 One of the artifact's event boxes.

Lee Sheldon (2014, p. 323) describes a way of using branching threads to retain author control over the interactive experience. He talks about how the player can be given choices that seemingly affect variables along the gameplay, without having an impact on what events actually play out. According to Sheldon it is important to think about how a branching story can get too big if every choice would need to have a unique path for the player to explore. Instead he suggests offering the illusion of branching paths by acknowledging the players input and offering them satisfying feedback that is not an entire unique pathway. In the artifact's events, this method is used to give the player the feeling of having a unique path when they select options in the chained events, by simply giving them a customized text to their choices. But the actual outcomes, as well as the mechanical effects, remain the same no matter what the players actually picks in these events. It was then impossible for them to tell that their choices were meaningless unless they were to play through the artifact again.

The outcomes of the events affect the player's different resources. The player has to compare these changes to the future gameplay in order to pick the one that they find the most valuable. These picks might be between multiple negative things, or positive things. The challenge is to pick the one that is the most helpful, not necessarily the one that is objectively good, since in the end the player is forced to pick one of them. Some of the events were balanced differently from others. Specifically, two were focused on having objectively useful and objectively useless choices for the player to discover. This might seem redundant and not useful, since the player would be inclined to just pick the one choice that is useful, and not the useless options. But in one of these events one of the useless options had prerequisites, and in the other the useful options had prerequisites. This was done in order to see how the player reacted to prerequisites in different situations. They were not meant to take up a majority of the test, but could be used to find out if, for example, prerequisites overwhelmingly make the player want to pick that option a lot more despite the negative consequences. Having different types of events allowed for the study to analyze different behaviors and effects that prerequisites could have on the player.

In the beginning of the artifact, the player gets to customize three variables. The landscape to play in, the kingdom to play as, and the ruler of said kingdom. Each of these variables has three different states. The landscapes can be forest, desert, and tundra. The kingdoms can be three different types of fantasy governments, a large serfdom, a rich mercenary state, or a strong tribal nation. The rulers can be a wise and experienced sage, a cynical and charming schemer, or a blunt and powerful conqueror. Each of these has different effects on the overreaching gameplay. The landscape choice affects the look of the map during gameplay, as well as the environmental events, though their outcomes will be the same. A sand storm would turn into a snow storm or a lightning storm and so on. As long as the player is given feedback on their choices and they then believe that they made a difference, it does not matter if they do not make a real different in the end (Fendt et al. 2012). After that, the choice of kingdom and rulers are mainly used to affect which choices the player has available during the events. For example, having a wise leader would allow the player to pick wise options, and having a serfdom kingdom would lead to being able to send large amounts of peasants against certain problems. Some of these choices were tailored both mechanically and narratively around the player's choices, and some were only tailored narratively. For example, if the mechanical outcome of a choice fit both the wise and the cynical ruler, then the player only needed to see a unique text relating to the choice to feel satisfying feedback, not necessarily a unique outcome in its entirety. As long as the player feels like it fits, then no additional work is required.



Figure 15 Selection of initial variables in the artifact.

During the play sessions, the artifact was played until victory or failure had been achieved. Since the player needs to be able to lose in order for there to be a necessity for strategy, there is a chance that the player will make choices that ends with their loss in the game. The researcher will help the player only if they appear to lose on the first ten waves. During these ten waves the game is easy enough so that the only reason for the player to ever lose here is if they did not understand something clearly during the initial explanation, and will therefore need a clarifying comment from the researcher. After the tenth wave of enemies however, the

difficulty spikes, making it much harder to survive. It was not required for the participants to survive the final five waves in order for them to give relevant data to the study. It was in fact more important to establish that the artifact was as difficult as a real game would be, so that it feels like a genuine experience, rather than having the participants all play through to the end. As long as the first ten waves were experienced by all participants on the same level, then the events that appeared between those ten waves were well and enough to analyze and discuss.

4.4 Pilot Study

A pilot study was held in order to confirm the method's and artifact's ability to answer the research question. Two participants tested the artifact and extensively discussed the balance, structure, effect, and function of the artifacts different parts, as well as how it could be improved. They also answered an early version of the questions to be used in the actual test interviews. These interviews were not transcribed, and the participants not quoted as it was not seen as necessary in order to evaluate the artifacts ability to answer the research question. Instead, notes were taken during the pilot interviews, both on the choices made by the participants and the comments raised by them after their playthrough. One participant also chose to play through the artifact multiple times, to more in-depth discuss balance issues in the tower defense gameplay. With the help of these notes a number of conclusions could be drawn on what changes would have to be made to the artifact, as well as some minor structural changes to the interview process. Of the two participants in the pilot study, both were male between the ages of 20 and 25, both had a strong interest in the strategy games, while one had a particular interest in tower defense games. The one with a strong interest in tower defense games was particularly interested in commenting for and discussing ways for the tower defense gameplay to fit more with the intended goal of the study.

The questions asked after their playthrough focused multiple topics, firstly their ability to recount the experience. Then their thoughts on how much choice they had during the tower defense gameplay. Whether or not they had enough insight into the game's system. If they regretted any choices. How believable the game was as a real tower defense game. If their initial choices affected the experience in a way they expected. And finally their thoughts on seeing or not seeing prerequisites on event box choices, and how they thought it would affect their experiences.

There were five points of interest that could be extracted from these test sessions. The first one, and arguable one of the most important ones when it comes to being able to use the artifact properly, is the issue of balance. As stated at chapter 4.3, it is important for the player to be able to complete the artifact to at the very least level 10, in order for the test session to be able to extract relevant data. However, during the pilot study the participants found it difficult to complete the early levels, while the later levels were way too easy. The balance of the artifact was reverse from its intended purpose, were the player received more gold the further they got and therefore the game got easier. The actual goal of the artifact was instead to have the earlier levels be easier, and the later levels much harder. It was commented on that the resources gained by playing increased exponentially as the player progressed to later levels, and that this allowed them to build too strong of a defense.

In order to correct this, the resources gained was decreased so that the defenses built by the player could never increase to the point of enemies being a complete non-threat. Another way to solve this issue could have been to instead increase the power of the enemies, but a choice was made to instead prune the player's income. The reason for this mainly stems from how the player would have to be forced to build a massive amount of towers in order for them to be able to defeat much more powerful enemies. By focusing on letting the player instead build fewer towers with more weight behind them lets the player put more intent into selecting specific towers over others. One participant commented on this fact, saying that they thought that having a large amount of towers and a lot of resources made it so that they would choose towers as much as they would just place several versions of all towers across the map and not really care about thinking strategically. Having fewer towers puts more intent into the choice of where and which tower to build, which in turn would create an environment more fitting for creating strong agency.

Another minor comment from one participant was the inclusion of strategic damage types and defense types in the game. This feature was added in order for the strategic choice of tower to matter, so that the player could not just build one tower and have it work the entire game. But some towers simply could not deal damage to certain defense types, and both participants thought that this feature was annoying. Not so much that they did not deal any damage, but they both thought that the feedback of attacking a creature with a projectile and the projectile not doing anything at all felt wrong. Essentially, the feedback they expected from their towers firing projectiles was always that it would hit and deal damage, and when the projectiles did not deal damage, this went against their expectations. Neither of the participants were against the idea of towers dealing a lot less damage to certain defense types, but both thought that it should not be no damage, but rather just a lot less damage than usual. This was also implemented in the form of certain towers dealing a tenth of their regular damage to certain defense types, instead of dealing no damage at all.

Apart from issues of balance, the participants also found a handful of features in the game that did not work as intended. The event boxes did not show the correct prerequisites in one case, which affected this participant's ability to answer questions on the topic in a minor way. This issue was corrected between test sessions. Another issue was found by a participant when restarting the game, as this caused the final wave of enemies to spawn incorrectly. As the participants in the actual study are not meant to restart the artifact – as the actual study does not concern itself with issue of balance – this feature was removed entirely.

Another issue that was brought up by both participants was the issue of how impactful the event boxes were. As both participants played, they found the event boxes to have little effect on their experience, and therefore felt like they were inconsequential to the rest of the experience. After discussing this issue with them extensively, the conclusion was drawn that not only would it be impossible to make each of the event boxes feel impactful while still retaining a proper balance within the tower defense gameplay, it was also annoying for the participant to be forced to answer so many event boxes when the impact of them was so small. To solve this, the events boxes were given a major overhaul. Instead of appearing one per finished wave – as originally intended – the event boxes only appear once every second wave. These events that remain, eight to be specific, each has their own unique effect on the game. Focusing on different resources and different variables, each box is both intended to

feel unique for the player and to give relevant data that can be analyzed and compared in the study.

Finally, when it comes to the prerequisites and the participants' opinions of them, they both found that the event boxes minor impact on the gameplay made them particularly uninteresting to them. They thought that having fewer, more high-impact events would make them care a lot more about their consequences and narrative. One participant specifically mentioned role-playing games, and how those titles often let you get invested in your character through long hours of play and intricate choices regarding their attributes and mechanics. This participant meant that making smaller and less explicit choices in a role-playing game would be more impactful because of this investment, while a short strategic game like the artifact would need more direct and impactful choices in order to justify the player's attention to a short interactive narrative.

The pilot study allowed the study to gain valuable information about both minor and major changes necessary for the artifact to successfully allow participants to feel agency in the choices, get invested in the experience, and express intent in the various systems implemented. The issues presented here were addressed in the artifact by tweaking numbers, correcting bugs, and changing the event system to focus on fewer events with higher degree of impact on the player's resources.

5 Analysis

In this chapter the study is presented from three points. The first is a presentation of the study, the second is an analysis of collected data, and the third is a conclusion drawn from the presented data.

The study's primary goal was to compare data from two groups of participants, those who played with and those who played without seeing prerequisites, to see how their experiences were affected by this design change. To do this, ten test sessions were performed with ten individuals proficient in the tower defense genre. In other words, the genre of games that the artifact is heavily based on. After they played the artifact these individuals answered questions in a semi-structured interview format, based on the game's believability, its ability to be strategic and informative, if they regretted choices made during their playthrough, its dynamic content, and finally their general opinions and thoughts on showing or hiding prerequisites as a game mechanic.

During the play session the participants were allowed to ask any questions they wanted and comment on the experience to their own liking. Thorough answers were given when needed in order for the participants to properly be able to play. Although at the beginning of the session the majority of possibly confusing mechanics of the game were explained to them. The tests were not started until it was clear that the participant at least held a basic understanding of how to play, what their goal was, and how to succeed in reaching that goal.

The main purpose behind the interview questions were to allow the participants to give their subjective accounts on how they experienced the artifact, in order to then interpret how strong agency they felt while playing. This was done by asking questions that allowed the participants to freely describe their thoughts and opinions on various aspects of the artifact, such as strategic value and dynamic content. The questions asked are presented in appendix A. Quotes taken from their answers are analyzed in chapter 5.2. These quotes can be found both in Swedish and English in appendix B. The full transcripts can be found in Swedish in appendix C.

5.1 Presenting Study

The ten test sessions were performed in varying environments, each following two guidelines. First, they were performed in calm environments where the participants were not distracted or disturbed by the surrounding area. It was important that they could focus on the artifact fully. Secondly, they were performed at a point of time where the participants were not stressed, or in a hurry, as this could heavily affect their perception of the artifact, as well as the quality of their answers. The test sessions were held in a public environment, and the participants were allowed to pick the date and time of the test themselves in order for them to pick a time that suited them best. Because of this schedule the ten test sessions were held during the course of two weeks.

To make sure that the participants were fully aware of what they were doing during their play session, the first interview question allows the participants to recount their experience. By doing this it was made clear that the participant was aware of their actions, along with letting them recall their experience in more detail, which could help them when answering later questions about minor details in the game.

The requirements that were asked of participants were that they had to have previous experience playing tower defense titles of some kind, enough for them to remember the basic controls and mechanics of the genre. Some had played old titles in the genre like *Flash Element TD* (Scott 2008) and *GemCraft* (NTT Resonant Inc. 2008), some had played modern tower defense titles on mobile devices, and others said they had experience with *Warcraft III: The Frozen Throne* (Blizzard Entertainment 2003) which had hundreds if not thousands of different types of tower defense mods created by its active modding community. They were also asked if they agreed to have their voices recorded during the interview.

The ten participants were split up into two groups, each for one version of the artifact. Five participants played the version that showed prerequisites, and the other five played the version that hid prerequisites. These versions and the groups were then aptly called versions S (showing), and H (hiding). When the participants were split up into these two groups then it was mainly their previous experience of tower defense titles that decided which group they ended up in. This was done to balance the experience between the two groups, so that one would not be filled with people with more experience than the other. Similarly, other variables such as gender and age were also used to balance the groups. When it comes to the topic of the participants backgrounds, they were all quite similar. All ten participants were current or former students at the University of Skövde, and had all minor to major experience in game development. All participants were in the age range of twenty to twenty-seven. One participant identified as female, and nine identified as male.

The participants were observed during the playthrough of the artifact. Their choices, questions, and noticeable actions were noted down to be used during the interview. The interviews were held in a semi-structured format, meaning that apart from asking the regular questions the interview also allowed for minor discussions and follow-up questions to be asked. This helped bring out the hard to reach information and opinions of the participants. This also helped focus the topics of the questions, as the participants would at times misconstrue the question and speak on another topic. The follow-up questions were used in these cases to bring back the discussion on the relevant topic. They were also used when it was seen as necessary for the participant to describe something in detail, or explain something that they had done or said. In some cases the participants chose to talk more about certain parts of the artifact than others. Most participants found certain parts of the artifact more interesting than others, which is reflected in their answers. The regular questions are then designed to in any case bring the topic back to the showing and hiding of prerequisites with the final question, as it is very open-ended. The regular questions are presented in Swedish and English in appendix A, while the follow-up questions are presented in Swedish in appendix C.

The interviews began with the participants being asked to recount their experiences of the artifact, specifically by talking about their actions and goals within it. There were two reasons why the interviews started this way. The first was to find out, before any other questions are asked, if the participant understood the experience to a degree where they could effectively answer the questions. If a participant had not been able to understand the gameplay despite their previous experience then this question would make that clear. The second reason was to allow the participants to recall their own interpretations of the events taking place in the artifact. By going through the different part of the game retroactively by themselves, they were allowed to think about it clearly before being asked to answer more in-

depth questions about their experience. All participants were able to recount their experience with the artifact in a satisfactory manner. Some described the game both narratively and mechanically in detail, while other gave short summaries of what they did in the game. Because of this, no quotes were taken from the first questions to be included in chapter 5.2.

After the initial question, the participants were asked about the believability of the artifact, and how they thought it compared to other games within the tower defense genre. This question was asked to find out how well the artifact had succeeded in simulating the typical elements and mechanics of the tower defense genre. For most participants this also meant describing how good they thought the artifact was in comparison to other games in the genre, despite not being asked to do so. Often the idea of the game being believable as a tower defense game overlapped with the idea of the game being good in the eyes of the participants. Either way the answers for this question were used to find out how effective the artifact was at creating a regular tower defense experience.

The third questions focused on the participants' feelings towards being able to make informed decisions within the artifact's systems. This question was asked to find out both how much the participant understood the artifact's systems, as well as how well the artifact was able to make them understand its systems. The fourth question is a continuation of this, asking the participants if they felt that the choices presented in the artifact allowed them to make strategic decisions. Both of these questions are designed to allow the participants to talk about the artifact's choices in the context of satisfying outcomes, good or bad, and what they thought about the many systems at play.

The fifth question focused on the participants' feelings of regret, and if they felt like they wanted to have had picked something else at any point of the artifact. The question is then directed towards both the choices made during the event boxes, as well as the choices made at the beginning of the artifact. The answers given were then used to find out if the participants had any negative thoughts towards the choices offered, or if they had any strong feeling about them at all, whether they were about a minor part of the artifact or something major throughout. This is then continued by the sixth question, asking if the participants felt like the choices at the beginning of the artifact gave them the experience they expected. They were also asked at the same time what sort of expectations they had when they made the choices for location, kingdom, and ruler at the beginning of the artifact.

Finally, the seventh question was used to ask the participants directly what their thoughts were on showing and hiding prerequisites, and in the case they played with hidden prerequisites, if they even realized that there were choices with prerequisites to begin with. This is the most open-ended question, and as such is used with a lot more follow-up questions. Its purpose was to make the participants both give their honest opinions and thoughts on the game mechanics, as well as see how they experienced them while playing the artifact.

Appendix B contains quotes taken from the interviews, split into five categories. These categories are based on the topics of the questions, but not all quotes originate from the relevant questions. At times participants chose to give answers relevant for topics other than the current question, and as such the categories are a bit broader than the questions themselves. The first category is believability, and contains answers about how well the artifact worked as a regular tower defense game. The second category is informed and

strategic decisions, which contains answers relating to the artifact's ability to relate information, give choices, and give feedback on those choices. The third category is regret in choices, and contains answers about the participants regret in the different types of choices made in the artifact. The fourth category is on dynamic content, which contains answer relating to the choices made in the beginning of the artifact, location, kingdom, and ruler, and how the participants found that these affected their experience. The fifth category contains answers relating to prerequisites, both general opinions, how they were affected by them, and if they even noticed them at all. These categories were also used in chapter 5.2 to effectively analyze the answers.

5.2 Analyzing Data

This chapter contains an analysis of the ten interviews. This analysis was done by taking quotes from the participants' answers and using them to argue for their usefulness in answering the study's research question. They are then also used to compare the two different groups, H (hidden prerequisites) and S (shown prerequisites), to see what sorts of different answers and perceived experiences were to be found in participants who played the two versions of the artifact. Throughout this analysis the term agency is used to describe the participants getting satisfactory feedback on their intent within the artifact, whether that be in mechanical choices or any other interaction they mentioned during the interview. The full transcripts of these interviews are presented in appendix C in Swedish, and the individual quotes used in this chapter are presented in appendix B in both Swedish and English.

For the most part there was only one quote taken from each participant on each subject. This was done to not make the presented quotes confusing when presented alongside other quotes. The few times that more than one quote was taken from a single participant then this was presented clearly in the text surrounding the quote, as to not cause any confusion.

5.2.1 Believability

First of all the participants were asked to talk about how believable they found the artifact to be, when compared to other titles in the tower defense genre. In group S, all the participants felt like the artifact was a tower defense game. One participant said:

But, other than that I think that it overlapped well with the genre, except for there being a bit more story. It's usually just building towers and killing stuff, without any specific reason.

(Appendix B, p. 70)

The participant meant that while the artifact overlapped with the general tower defense games they had played previously, but that the story events did not. Several participants expressed similar opinions on the story, as tower defense games usually do not have any story to speak of. However, none of the participants expressed any negative emotions about the events, and when asked, simply said that the events added to the experience overall.

Tower defense is all about micro management, and planning a lot to find an optimal strategy. And these choices you made between every other wave, I felt gave more strategic choices you could make to survive longer, basically.

(Appendix B, p. 71)

Other than this, the participants in group S expressed that they viewed the artifact as any other tower defense game:

I would believe you if you told me this was something somebody was just, handing out as a tower defense game.

(Appendix B, p. 70)

I mean, it's a tower defense game in every sense of the word.

(Appendix B, p. 71)

It is actually pretty believable.

(Appendix B, p. 71)

While these opinions differed little among group S, several participants also expressed negative opinions regarding certain design element of the basic tower defense gameplay, such as missing range indicators, minor bugs, minor missing information that was supplemented by the tester's comments, as well as differentiating mechanics. One participant mentioned that the mechanic of being able to sell towers and regain any lost gold and food felt off.

It felt very good actually. I'm not used to being able to sell buildings for the same price you built it for. Other than that it felt very good.

(Appendix B, p. 70)

Group H shared similar sentiments about the artifact's believability as group S. One participant compared it to *Warcraft III: The Frozen Throne* (Blizzard Entertainment 2003), a game with a large amount of fan made mods within the tower defense genre. This participant also expressed that the events actually increased the games believability, for the sole reason that it makes it more advanced.

Sure, this is a TD, almost as if it's taken from any Warcraft III mod. You have different towers, upgrades for towers, different types of damage and types of enemies. You have food, you have gold, you have life. All the components of a TD are there. If not even a bit more advanced than basic. And then you also have this choose your own ruling style system that increases it even more.

(Appendix B, p. 70)

Two participants thought the game was believable while praising its type system, speaking freely about what they liked about the game above all.

Very believable. It is made precisely as a regular tower defense game so to say. I have played very many, I'm sure it's a question later on, but I think it was exactly what tower defense usually is. You have some sort of resource manage and towers that can be upgraded in some way, and you are usually able to see what is coming it was a nice difference for since many different types of defense types since there is usually only two or three. So that was good.

(Appendix B, p. 71)

I thought it was good. I liked the damage types and that you could see them. Since you can kind of choose how far in the future you want to make your strategy, kind of.

(Appendix B, p. 71)

Other participants in group H thought it was believable, but not overtly so. These opinions seem overall linked with the artifact's general simplicity, as these participants expected more or deeper systems than those implemented.

It seems, I would say, it seems pretty believable. I thought it felt fun to play, felt like it had somewhat differing amount of depth for different choices and stuff you could do.

(Appendix B, p. 70)

It is very basic. But it works.

(Appendix B, p. 71)

Generally speaking, while all in both group H and S thought the artifact was believable, the enthusiasm and reasoning behind this differed. Both groups had about half of their participants feel strongly about the artifact as a good tower defense game and speaking about things they liked about it, while the other half instead spoke about ways it could have been a better tower defense game by either giving advice or commenting on mechanics they did not like.

5.2.2 Informed and Strategic Decisions

The third and fourth questions focused on the participants' perceived ability to make informed decisions, and how well the available choices allowed for strategic thinking. These allowed the participants to express their thoughts and opinions on the presented choices, how much control they received from them, as well as how well they understood the systems they interacted with to begin with.

A majority of Group S thought that the game showed them enough information for them to be able to make informed decisions. However, it is important to note here that these participants were also able to ask questions about the systems at all times. This means that the artifact does not necessarily stand on its own as a good representation of what a strategy game should be. Rather, the artifact along with the presented information about the gameplay, as well as answers to any potential questions allows the artifact to be informative. For the purpose of this study, having the artifact be informative is all that matters, no matter how this is done. It is however important to realize that a regular video game would not be played beside someone who could explain any confusing detail. While this does differ from regular way games are experienced, none of the participants in group S ever noted that this was a negative aspect at any point in the interviews. The following participant in group S mentions it as:

Yes, when you could ask you at the same time it was fine. But it would have been harder if you would have played without help.

(Appendix B, p. 71)

Two participant in group S also noted that while they thought the game was informative, there were also aspects of it that could have been more informative.

Other than the fact that I would have loved to have circles over the towers that indicated range, this game did very well on telling me what my choices were.

(Appendix B, p. 72)

Yes, I would say so. You get pretty clear information about damage, dps, and so on that you could calculate pretty easily towards what you wanted to do so to say. The only thing was that range indicators were missing on some things, but otherwise it was good.

(Appendix B, p. 73)

The rest in group S expressed that the artifact gave them enough information to make informed decisions, and added different reasons for why they thought as such.

Yes, I definitely think that. As opposed to other tower defense games that I have played before it was very informative considering that I both could find out what type of enemies I will meet as well as what type of damage my towers do, and which type of enemies take extra damage by what and all such information.

(Appendix B, p. 72)

I thought so definitely. Since you knew what the next wave would have, how much HP you had, which type, and how fast they were, I thought that you had a lot of choice that- okay I can spend an extra tower here for that type just to fix here, but I know that magic types are coming in two rounds that I don't have any defense for so I have to save money for that. I definitely think that I had that.

(Appendix B, p. 74)

Group H expressed similar sentiments when it comes to the artifact's information. However, one participant said:

Maybe not if you had not explained some things to me. There were a few things, such as I think that the user interface is a bit odd in a few places. But once you explained things, it worked.

(Appendix B, p. 72)

Meaning, this participant in group H thought critically about the fact that they had to have things explained to them about the artifact as they were playing in order to understand it fully. It is not however expressed in a way that is necessarily negative, but it is worthwhile to note that the thought is there. The comment also focuses on some aspects of the artifact's interface that were confusing, and also had to be explained to them. Two other participants in group H share this opinion on aspects of the artifact that gave them a less than preferred amount of information.

If we disregard where the information was not visible due to syntax errors, then yes. Then it felt like I could make informed decisions on how I am doing, and there was a good amount of time in order to do it.

(Appendix B, p. 72)

Oh yeah, I felt that. The only thing I felt was missing was how many enemies were going to come.

(Appendix B, p. 75)

The first of these comments contains a reference to “syntax errors”, which in this case is about a part of the artifact in which not all the information is revealed about a certain tower. The usage of the term “syntax error” is used as hyperbole to describe a text parser error. The second participant mentions how they would have liked more information about the enemy waves in the artifact. Another participant mentions that the artifact gave them a lot of information, but that they doubted if they used it all.

Yes, I would say so. The information availability was very high if you look. Then maybe I didn’t use it fully, but all information was available.

(Appendix B, p. 73)

Both group S and H showed all participants expressing that the artifact allowed them to make informed decisions, with varying levels of comments expressing either none of some opinions on how the artifact could have been improved in minor ways.

When it comes to the artifacts ability to give strategic choice to the player, the participants in group S all thought strongly that it did allow them strategic choices. Four participants also added descriptions of occasions when the artifact allowed them strategic choices. This was done without prompt, and came naturally for them after answering the question.

Yes, I thought so. You could think about what you needed for [...] resources and how much HP you had and so. But you also did not want, or at least I did not want to take those that felt really evil towards the villagers, or those that felt, kind of just mean.

(Appendix B, p. 71)

This participant mentioned that while the choices were strategic, they also actively chose to not pick alternatives that went against the kind of character they chose to play as at the beginning of the artifact. More on this is presented in chapter 5.2.4.

Yeah. I got to focus on what kind of resource I valued. Then I guess you could also say I got to role-play a little, yeah.

(Appendix B, p. 72)

This participant also expressed that while they got to choose strategically, they also got to pick alternatives that fit the character they were role-playing as in the artifact.

Definitely. For example, when I had very few hearts or life left, I chose the alternative that gave me the most life. And I think that saved me there,

because I think I lost more life the next round compared to how many hearts I had the round before. So, definitely.

(Appendix B, p. 73)

Yes, definitely. I thought at several occasions that I needed to get in more money in some way, which protects me from the next round and monsters kind of. And since you had that information that I said before, it allows you to make better choices- alright now I gain extra gold which I then either save since the next round I know will bring a type of monster that I'm not well prepared on attacking.

(Appendix B, p. 74)

These two participants expressed that the ability to see exactly what they gained from each choice, as well as the ability to know a lot about the surrounding systems allowed them to have positive strategic experiences when picking alternatives in the events.

One participant in group S also mentioned that while the choices were strategic, they were also focused on being short-term, reactionary choices. Meaning, they thought there was little use in making long-term plans, and that they thought the choices worked better as direct, short-term picks of whatever they needed the following turn.

Yes, it was definitely strategic choices, even if they are reactionary. There was much of what do I need right now, not so much what do I need in the future.

(Appendix B, p. 74)

In group H also thought that the artifact allowed them to make strategic choices. Two participants mentioned examples on how they thought it was strategic:

For example the one when it comes a magic choice for the first time and you could pick forty gold, which is exactly the amount it costs to upgrade a house to a witches' hut. Felt kind of good.

(Appendix B, p. 73)

But from the choices you could make you could pick depending on your play style. That if you want to have gold in order to build bigger towers, if you want food to build more towers, or if you want health to take risks.

(Appendix B, p. 72)

Another participant went further, and described their opinions on the strategic systems at play, talking about how not seeing all the information in the game actually increased their ability to enjoy it, because of the unpredictability:

If you know all information then you could optimize it on a mathematical level. As long as there is some sort of variable, like for example how many enemies that are coming, then that becomes unpredictability, and that's fun. All of a sudden a couple of enemies might slip past and then it's just, shit, you got to think on the fly. And that's fun game moments.

(Appendix B, p. 75)

This participant describes the thought process they had when making a strategic decision in the artifact:

But yes, I thought the choices were good. There was a couple I wondered over. I was a little afraid of the bosses. I thought, do I really need extra HP for the bosses? No, I have ten HP. I think I need gold. Because in case the bosses are strong, then maybe I can get down one boss and then I have enough gold for an upgrade and then I can blow up the bosses. So yes, I thought there were good choices.

(Appendix B, p. 75)

One participant also mentioned that their thought process was to pick the most optimal strategic choice, but that this choice also functioned for them as the most optimal narrative choice as well.

Yes. It did, since I picked, like, the choice that I picked was mostly strategic towards winning the game, and that's the same as narrative since I want to save my village, my city so to say. Since that becomes the same thing, to try and maximize and get as many resources as you want to have, and then you pick the choice that gave me the most resources of the type I am looking for. If that makes sense.

(Appendix B, p. 74)

Since the character they were playing in the artifact wanted to succeed in the same way that the player wanted, then the optimal strategy becomes both a narrative and a mechanical preference. Other participants also mentioned their interest in choosing a certain choice due to its narrative or mechanic purpose, and how that might have affected their choices. The following participant felt like the choice between narrative and mechanical superiority was simply about focusing on the mechanical until it didn't need to be focused on anymore:

I mean, the role-play stops mattering if the mechanical ceases. So I focus on the mechanical until I don't need to focus on it any more. Then I spend the remaining of my focus on the role-playing.

(Appendix B, p. 72)

Another participant commented on how seeing the outcomes of the choices made the artifact easier, which a design choice made to allow the player full access to as much information as possible. So by that logic, the participant felt like the game was easier from being allowed to see more information on their choices. However, the participant then comments that they thought it might be more interesting when in character to not see outcomes, an argument based on the idea that since their character should not know something, then the player shouldn't either. The comment was:

In some way I think that- I don't know. That time when I didn't get to know what happened was definitely harder. To only know the results of the choice made it easier to play through the game. It can probably be more interesting as a leader to not know exactly how the people will react to it.

(Appendix B, p. 74)

At the same time, another participant said that they barely looked at the text of the choices at all, but rather picked entirely out of the mechanical outcome:

I did not think a lot about what the text said, but rather I focused on what I got out of the choices.

(Appendix B, p. 72)

This strengthens the argument that showing information goes against the more character driven and narrative based reasoning behind picking alternatives. By not looking at the text – the narrative essentially – of the choices, then the participant chose not to engage with the artifact on a narrative level at all and therefore losing out on a major part of the game. Had the outcomes not been visible, then the player wouldn't be able to have as a big chance to make informed decisions, but they would be forced to engage with the text in order to make a choice at all. Hiding or showing outcomes in the choice interface might then be based on whether or not the designer wants the player to be forced to engage with the narrative, or be allowed to ignore it completely.

While this is not directly useful in answering the research question, it is still important to understand how the design of the artifact impacted the participants' perception of the choices on a narrative and mechanical level. If, for example, all participants had interacted solely with the mechanical and not the narrative in any way, then that could affect their ability to interact with prerequisites. This is due to the fact that prerequisites are based on the narrative choices the player made at the beginning of the artifact. If the participants all ignored the narrative for a completely mechanical experience, then the results would be lacking to say the least. However, since only one participant said that they solely picked because of the mechanical, and also later on showed signs of being interested in the character driven mechanics as well, this was not enough to majorly impact the results of the study. It is still important to note the effects of mechanical versus narrative intent.

This participant also shares the sentiment of always picking the mechanically optimal alternative as long as the outcome is visible:

When I didn't get out anything from it I picked aesthetically. But every time I could pick the results I chose the one that was mechanically best. The one that was optimal in the situation.

(Appendix B, p. 73)

Another participant felt similarly, choosing alternatives on the basis of their mechanical value despite wanting to follow the narrative:

I'm not a hundred on what choice it was but there was something where I probably would have wanted to pick more, I mean, I would have wanted to pick an alternative because I thought the text fit more than the choice I would have wanted to do if I tried to live into the story. But when I looked at what I got out of the text then I saw some other alternative that gave me a more enticing reward, kind of.

(Appendix B, p. 73)

Being forced to pick something mechanical might be because of the artifact difficulty, as minor missteps could cause a player to lose rather quickly, at least in the later stages of the game. This would incentivize the player to pick mechanically superior options, especially when they are told clearly at the beginning of the game that they will be given all the information about the outcome of choices.

5.2.3 Regret in Choices

After the player has made a choice, if they feel like they picked the wrong choice, or felt any regret towards their chosen alternatives, then that is a strong indicator that they received negative feedback on their intent. Having outcomes shown for almost every event in the artifact lightens the risk of this happening as the player knows what will happen as they hover over every available option. However, they could still receive negative feedback if the options available were not to their liking and they were forced to pick something subpar, or if they did not understand the systems properly. The latter is analyzed in chapter 5.2.2, and was found to not be the case in both group S and H.

By asking the participants if they had any regret in their choices, the purpose is to both try to find if they weren't happy with any part of the available choices and to find out if they felt regret over some other part of the artifact.

In group S there was one participant who felt like they at times were forced to pick something they did not want to pick because it was the only way to survive. While not overtly negative, this statement makes it clear that they would have preferred if they could have chosen an option on behest of the narrative, not on whatever keeps them alive for another round.

I had to pick the one that let me live, even if, ah, it might have not been what I wanted.

(Appendix B, p. 74)

Another participant in group S felt like there were mechanical changes in their play style that they would have wanted to make:

There was probably a moment in the beginning where I would be able to try taking money instead of food, because I felt like the farm was pretty cheap to build, and you could get in more money I think. I feel that probably would have been a better choice in the beginning. I felt that it was pretty calm in the beginning and if I had a bit more money then I would have been able to complete the round I lost life on.

(Appendix B, p. 76)

Yet the rest of the participants in group S did not feel any regret about their choices.

No, I don't feel any major regret over any choices I made.

(Appendix B, p. 75)

I don't think so. I assumed some choices I made there were only affected by what I had picked for my kingdom and landscape in the beginning. So I went

mostly according to the reward when I made a choice, rather than what the text suggested that I did.

(Appendix B, p. 76)

There was nothing that I clicked wrong on, that I'd rather would have had right then. Because the choices we made were, as I said, reactionary, and that means I'll take that which fits best right then. So I don't regret any choice.

(Appendix B, p. 76)

This last participant also comments that they specifically felt like they didn't regret their choices because they made short-term commitments, which would mean that it was because they had all the information they needed to make informed decisions that made them unable to regret their choices.

The majority of Group H made similar comments about not feeling much regret in the game's choices, but also comment a lot about minor things they would have done differently if they played it again.

Personally, no. If I play it again, then I think I will pick the same choices again, that I run plus gold. The only choice I maybe would consider would be to no go for these upgrades because they are bad. Because, ah, it feels like some of the choices aren't fully balanced. And if you have played one to three times you would be able to see which are worthless.

(Appendix B, p. 75)

Yeah, I would have chosen less food. At the first choices you got I picked food instead of gold if I remember correctly. It felt like gold was more valuable.

(Appendix B, p. 76)

I don't know that. I played it safe at one of the choices with HP instead of gold. I could have picked gold there, because I think I would have survived enough, so I could have played a little more risky.

(Appendix B, p. 76)

This last participant mentions how they feel unsure about what they would have wanted to do differently, but were still able to come up with examples of ways they might have played it differently.

Another participant expressed no feeling of regret whatsoever in group H.

No, I don't think so. I am pretty happy with my choices.

(Appendix B, p. 76)

The same is heard from another participant, only with the added comments on how they expected more dynamic content, which isn't so much regret as much as it is just broken expectations.

I don't think so. The only thing I thought would have more of an effect was kind of like that if you picked what sort of leader you were in the beginning and played after that.

(Appendix B, p. 76)

Both group S and H expressed minor opinions on regret in the general gameplay, but nothing that had to do with the prerequisites. In fact, not one of the participants even mentioned the prerequisites during this question's answers, which might mean that none of them were directly affected by visible or hidden prerequisites when it comes to regretting choices. This is logical however, as showing and hiding prerequisites is all about expectations and feedback on those expectations, not necessarily the actual choices picked by the player.

5.2.4 On Dynamic Content

The expectations of the dynamic content appear the moment the player places intent in the choices at the beginning of the artifact. The feedback of these expectations is given when the choices in the event boxes appear, and the player looks at them. Choosing between these alternatives in the event boxes is then a continuation of the expectation, since it leads to the other systems in play, but the direct feedback from viewing the available choices is given as the player explores their options, not when an alternative is picked.

Since feedback is key to making the player achieve a stronger sense of agency (Fendt et al. 2012), it is necessary to interpret the answers of these questions to see how well the feedback performed alongside the expectations, or rather intent, that was placed on the artifact when the participants first started it up and chose a location, a kingdom, and a ruler to play as.

The two groups, S and H, showed differences on what their expectations for the artifact were, as well as how those expectations were met. In group S one person showed a neutral stance on what they expected from the game's feedback on the dynamic content:

But what ruler you had I thought would affect the most, then kingdom a bit maybe. But in any case, which ruler you had I thought would affect the most, or I had a bit of expectation on that it would have varied what choices you had to pick between.

(Appendix B, p. 77)

Another participant expressed an expectation for more dynamic content, both in quantity and in complexity. This means that the participant was not given the experience that they originally envisioned when making their choices at the beginning, and as such they were not given the proper feedback through the available choices.

I think I expected more alternatives that would be addressed towards the choices I made. Because if I interpreted correctly then it was always only one choice that was based on the choices I made in the beginning, and two or three other choices were addressed towards other choices you made in the beginning. But I thought that because I was a sage and forest, then maybe I would have gotten to pick between the two at some point. I mean that there would have been more based on my choices at the same time. I think I figured that would happen.

(Appendix B, p. 77)

One participant in group S expressed that while they did not have any specific expectations on the choices, but rather just picked what they thought was the coolest:

No, not specifically. There was no direct connections to this might be easier to defend, it was nothing like that. It was only purely what I felt like right then and there so to say. I thought that it sounded cool with a scheming winter mercenary area.

(Appendix B, p. 78)

The majority of participants in group S, while not showing signs of all the expectations being met, showed that the artifact granted them to some degree of feedback on their original choices. One participant expressed positively about the visible prerequisites when asked about the dynamic content:

I thought that even if the choices that came up in the game that had within brackets, that they were- that feat so to say that made it, I thought I often picked that choice. I basically felt like that choice worked best for me. In that way I feel like it was a good choice. It felt even if it affected a lot. I felt like, ah, oh well, I can make this and that choice only because I'm a schemer instead which is nice.

(Appendix B, p. 78)

The participant here felt like the choices with the visible prerequisite fit best with the character they chose at the beginning of the game. Several participants in group S repeatedly used the terms used to mark out prerequisite choices, such as mercenary or schemer, when talking about the positive experiences in the artifact. It shows that, if nothing else, the terms used to mark out the prerequisite choices were seen in a positive light. In chapter 5.2.5 more remarks about prerequisites are made by participant in group S, and it is important to note here that while a few participants here specifically said that they did not think that marking out the prerequisites alternatives was necessary, they still never expressed any negative emotions regarding them.

Group H showed differing opinions on the artifacts dynamic content, when compared to group S. One participant expressed neutral thoughts on it, imagining what a different choice would have changed, and mentioning how they thought they had a "nice range of choices".

If I had chosen him the barbarian dude, then maybe a part of the dialog choices would have been much more aggressive. All the choices I got were very thought-out, and regular. So I guess, it could have had to do with my ruler choice. But I mean, I had a nice range of choices. If I had picked the barbarian then maybe I would have gotten less choice, maybe he just wanted to fight, fight, and fight.

(Appendix B, p. 78)

Another participant showed that they had an unsure and unclear view of how the dynamic content functioned in the artifact, confusion that most likely was not helped by not being able to see prerequisites. They also made it clear that they did not feel like their expectations were met:

I feel that it hadn't done much in-game. The only difference was the choice at the end when the troops that you didn't pick come and help, maybe? I don't know. Maybe they come either way.

(Appendix B, p. 78)

One participant described that they expected more from the dynamic content, specifically when it comes to the visuals surrounding the gameplay:

I expected something, at least as flavor text, that the towers you have are special, or that the enemies you meet are different. So instead of a slime you meet a desert worm or something like that. Even if they have the exact same stats as them like are called different things depending on where you are.

(Appendix B, p. 77)

Another participant said that they expected more, but not in what way or how much. They then go on to describe how more information would have made the beginning choices more interesting and useful:

I assumed that it would affect the choices on some part. Then, I don't know to what extent. Then maybe I would have appreciated having a description in the beginning on which choice the thing you picked focuses on. If you choose to be a blunt and powerful warlord you get more gold but less something else. And you get like a general idea over what you pick.

(Appendix B, p. 80)

Making it clearer for the participants how exactly the starting choices would affect their experiences would have made it easier for them to place intent in those choices. However, it would have also made it easier for them to steer their choices in a certain direction throughout the game, instead of thinking tactically.

Another participant expressed clearly that they thought there would be more dynamic content:

I think that I thought that they would have more of an affect.

(Appendix B, p. 78)

While at the same time, this same participant explained that they imagined the artifact to actually have dynamic content, but that they weren't aware of them since they hadn't played it more than once:

In that way you do see a difference, but I thought that it would be more a difference. So I see that there probably were different choices in the game since I picked that, but it wasn't noticeable enough since I hadn't played the other versions.

(Appendix B, p. 78)

This statement is interesting, because it illuminates a dilemma with hiding prerequisites from the player. This participant clearly imagines that there is dynamic content that maybe could give satisfying feedback, but they feel the need to play it multiple times in order to get

that feedback. At the same time, this other participant expressed how they did not notice the dynamic content at all when prerequisites were hidden:

As far as I can see it made no difference whatsoever. But no, I did not feel like they affected the game in any noticeable way.

(Appendix B, p. 77)

If the player is not able to even notice that there is feedback to be gained from playing multiple times, then they would not be incentivized to do so. Another participant in group H said nearly the exact same thing:

I am completely uncertain on how they affect.

(Appendix B, p. 77)

By instead showing prerequisites, despite what it might break in immersion and choice illusions, it would make the player at the very least understand that there is dynamic content to be explored through multiple playthroughs. But of course, this could come at a cost of the player still not having their intent met with satisfying feedback, like many in group S were. However, this would be entirely up to the quality of the game itself, not the actual game mechanics chosen.

5.2.5 On Prerequisites

Prerequisites themselves function as the gatekeepers of the dynamic content. Whether it is more satisfying to see them or not is something that cannot easily be answered, even by an extensive study. However, it was decided that the final question of the interview should be about the participants' own opinion on the matter. Do they want to see these prerequisites? Does seeing them ruin something for them? Does it make their experience better?

One participant in group H explains that while they did not want to see the prerequisites directly, it should instead come through by the narrative alone, by the text formatted on the choice:

But, no, I still think that it's not information that's needed to be said. It should be conveyed through the story instead.

(Appendix B, p. 79)

Another in group H said:

It probably wouldn't have taken anything from it, if they hadn't marked it.

(Appendix B, p. 79)

Both of these participant meant that, while thinking that the alternatives that are available due to prerequisites are generally a good thing for their experience, they also don't need to be marked. The reason why they don't need to be marked as prerequisites is because the text on the alternative should, according to the participant, make it clear on their own what prerequisites are in play. They believe that the narrative should be enough to give the prerequisite feedback. Of course, this requires the developer to put effort into making sure that every alternative with prerequisites is conveyed in a way that makes the player understand clearly what those prerequisites are. Even if they are written in a way that does

this successfully, then that still isn't as clear as just having a prerequisite marking on the alternative.

It is also worth to note that both of these participants have the same opinion on not wanting to see prerequisites, while being in different groups. Overall, while participants in group S were more positive towards the idea of showing prerequisites, group H were leaning more towards not wanting to see prerequisites. This could come down to the fact that they experienced those versions, and had a bit more trouble imagining the opposite version and how well they would have liked it. Generally speaking most participants were unsure of if they would have wanted to play with or without prerequisites. It was seen overall as a difficult question, and most of them ended up going back and forth as they discussed it as to whether or not it really was something they wanted.

I don't think I care about it, honestly speaking. I don't think it would have made any difference. Or maybe? I don't know. It might have made me think a bit more, to feel more happy that I made certain choices in the beginning. I mean, as it is now I feel like the choices I made in the beginning didn't make any difference at all. I had almost forgotten that I made them before you mentioned them again. All the while, if it had been there, that it said this choice, like, you picked this! It would maybe made me feel like I was in more control over what's happening. Maybe made me feel like I wanted to play it again with different choices. In the beginning.

(Appendix B, p. 79)

Commenting both on multiple playthroughs and questioning to what degree they would be affected by seeing prerequisites, both the former and the following participant brought up interesting points on how it would affect them:

I don't know if I had preferred one or the other. But I do think that it would have affected me. I know that the first time I saw the choice that I thought that it might just appear every now and then, and that I should take it when it does appear. It was the deciding factor to why I picked that one. Then I noticed that they appear every time, and then I focused more and more on the mechanical, what I got out of each alternative, and a bit less on which was unique for me.

(Appendix B, p. 80)

The participant here (group S) expressed that the choices with prerequisites felt unique, and that the fact that they appeared too much to be unique went against their expectations. The idea that a choice with prerequisites should be unique is an interesting one, as it ascribes those alternatives to being held to a better standing than others. Another participant (group S) however describes the opposite effect:

But I mostly just went after what said in the choices and what you got out of it. But then I wasn't more interested in taking the choices just because of it being sage, but ah, as I said before, I went mostly after what it said and what it gave.

(Appendix B, p. 79)

What is said here is that having the choice be “sage”, or rather, that it is available due to them having picked “sage”, does not make the prerequisite alternative to be more attractive. This might be due to the abundance of prerequisite choices available, or it might be because of the specific participant simply wasn’t interesting in the dynamic nature of those choices.

Two participants in group S liked the visible prerequisite markers, with different reasons why:

These choices that were specifically marked as if they came from that I was a mercenary, or that I was in desert was very fitting to that and gave immersion to and believability to these things that happened. And made you think that there are things that are happening here instead of that it is text that relates to for example a grass field somewhere else.

(Appendix B, p. 79)

I liked that you see why there were special events. I liked it because of the fact that I would not have reacted otherwise on that it was an environmental-variable effect. I would have probably not even registered it. So I appreciate that it tells you that this is a special event. If nothing else then it gives replayability when you run it. Then you could have wondered what effect the other variables give.

(Appendix B, p. 80)

The first participant thinks that having the choices show prerequisites allows them to feel more immersed in the experience. They thought that reinforcing their previous choices created a feeling of believability into the game world itself, making it easier to become immersed.

On the other hand, one person in group H mentioned how seeing prerequisites might affect their immersion negatively:

I guess that it’s nice, but at the same time it’s also so that when I’m in the game I’m in the game. Then I shouldn’t be able to know that those choices should be there. I don’t know exactly if it’s important or not.

(Appendix B, p. 80)

Though it is important to note here that the participant was unsure of how exactly it would affect them, as many in group H were. Another participant in group H expressed how they didn’t think about the existence of prerequisites in the artifact at all:

I didn’t think about that there were supposed to be prerequisites.

(Appendix B, p. 80)

It is important to remember that the participants were never informed about what the choices at the beginning of the game would affect specifically. They were simply told that their choices would affect the experience in varying ways. As such, it would naturally be difficult for those in group H to realize that there even were prerequisites for choices unless they were able to guess or assume correctly that some choices had prerequisites. The same participant then goes on to say about showing or hiding prerequisites:

It wasn't something I missed.

(Appendix B, p. 80)

All the while not knowing about the prerequisites, the participant also was not interested in knowing about them. The participant simply didn't play the game out of the perspective of their selected character and variables, but rather focused on the tangible mechanical outcomes and gameplay.

5.3 Conclusions from Data

The data presented in chapter 5.2 can be considered a subjective interpretation of the participant's subjective perspectives on the artifact. This chapter will attempt to use these interpretations in order to draw a number of conclusions about how the study's two groups differ. It is through this difference that an answer can be found to the research question:

How is the player's agency affected by seeing prerequisites of dynamic choices?

The definition of agency used here is the one by Tanenbaum and Tanenbaum (2009). Their definition is that agency is putting intent into a system, and receiving satisfying feedback on that intent. In this artifact that is done by first putting intent in the three variables chosen at the beginning, location, kingdom, and ruler. When the participants then were greeted by the event boxes and their alternatives, being met with options related to the choices made at the beginning then functions as the feedback on those original choices made at the beginning.

The two groups of the study got to play two different versions of the artifact, one showing and one hiding prerequisites. Generally speaking, the differences between these two groups when it comes to the five categories used in chapter 5.2 aren't massive. There's still a large enough margin to be able to make an assumption of an effect, but since the study is quite small that makes it hard to argue for the effect's universal application.

To start off, the categories of believability, informed and strategic choices, and regret had few if barely any difference when it comes to the participants' answers. Both groups found the artifact believable, albeit missing some key features (see chapter 5.2.1), but no difference was found between group S and H. Both groups also had some who regretted minor gameplay choices for the purpose of winning the game easier, but nothing that had to do with the dynamic content (see chapter 5.2.3).

Both groups were able to make informed decisions, but for several participants this was due to being able to ask questions about the artifact at any time. Without access to this, those participants would not be able to make informed decisions. However, for the purpose of the study this is not a problem, since having to rely on outside information never manifested as a negative aspect for the participants. The majority of both groups also thought that the artifact allowed them to make strategic decisions. Their answers points towards that the reason for their ability to make strategic decisions was that they understood the systems, could see the outcomes clearly, and choose according to what they needed the most at any moment (see chapter 5.2.2).

Where the two groups differed slightly was in the dynamic content and prerequisites category. Group H, which played with hidden prerequisites, ended up being more confused overall as to what extent the dynamic content was implemented in the game. There were still

those in group S who were confused about it as well, but not to the extent or quantity as group H. Generally speaking the participants in group S seemed both more critical about that the amount of dynamic content wasn't enough. Many thought the artifact should have had more or different kinds of dynamic options available depending on the choices made at the beginning. There were those in group H who also expected more, but their answers were also filled with confusion over whether the game needed more dynamic content or if they had simply missed that it was there (see chapter 5.2.4).

The final question focused on the participants' opinion on showing versus hiding prerequisites, during which they were allowed to give their thoughts on what they personally would have wanted to play with, which ended up giving interesting results. Despite what sort of satisfaction the participant felt during the dynamic content's feedback, some participants thought that they wanted to see the prerequisites, and some that they did not. Some were also unsure about what they wanted, and discussed how it would have affected them in different ways, and that they generally weren't sure what would have been best for them. Those who wanted to see prerequisites thought that it gave them move of an overview of the experience, and that is added to the ability to replay the title since it gave you a better understanding of choices you picked in the beginning. Those who did not want to see the prerequisites viewed it more as an opposite from immersion, and that the information should either be conveyed entirely from the narrative of the buttons, or that the characters in-game wouldn't know which choices have prerequisites and therefore the player shouldn't either (see chapter 5.2.5).

While the text on the button itself can give feedback on the player's previous choices, having a clear indication on relevant prerequisites gives direct and obvious feedback to the player on how their previous choices have affected their experience. Since feedback is incredibly important to create strong agency, it is by that logic a clear and obvious showing of prerequisites that should provide a stronger satisfaction for the player. But that is only true if the alternatives on display manage to meet the expectations of the player. If the game is capable of meeting the expectations of the player, then marking out clearly the dynamic content is a way to reinforce feedback for the player's choices. If the game is not capable of meeting the expectations, then not marking out the dynamic content might instead make it possible for the player to figure it out by themselves how much their previous choices affect their current available ones. This however, easily leads to the player simply not being aware of how their previous choices would affect their current ones, unless the choices are created in a way to convey their prerequisites clearly – which in practice is just a fancier way of marking out the prerequisites to begin with.

Generally speaking the results point towards that there is an effect on the player when they see prerequisites, as compared to when they do not. This effect comes in the shape of a higher chance of receiving feedback when the player views the dynamic prerequisites choices, as long as there was an intent put into the choices that affect the dynamic content to begin with. Then when it comes to how much agency the player feels comes down entirely to what degree that feedback is satisfactory in accordance to the intent. Technically speaking, there could be a much higher agency experienced without prerequisites visible, as long as the dynamic content manages to satisfy the intent. In the end, the only thing that visible prerequisites are is a tool to more bluntly but effectively make the player understand how their previous choices affect their current ones.

6 Conclusions

This final chapter presents three concluding parts of the study. The first is a collected summary of the study's purpose, content, and results. In the second part the study's results is discussed, both in terms of the presenting a clear explanation as well as presenting what could have been done differently in the study's method in order for the results to have reached a more useful conclusion. The third and final part contains future ways this study could be used in order to reach a more extensive outcome, or to generally help future research of choice interface in games.

6.1 Summary

This study was based on a design choice within digital strategy games. This design choice was to either show or hide prerequisites in choice interfaces. How this design choice affected the player was researched by answering the following research question:

How is the player's agency affected by seeing prerequisites of dynamic choices?

Two groups of collectively ten participants got to play through an artifact in the form of a short digital strategy game. This game contained a descriptive introduction, along with a choice of location, kingdom, and ruler, before they were allowed to play through a tower defense-inspired strategic experience. Within this experience the participants also got to play through a short interactive narrative in the form of event boxes, a type of choice interface common in grand strategy games. These event boxes contained dynamic choices, which changed availability depending on the choices made at the beginning of the game. However, these two groups got to play through two different versions of the artifact. One group got to play with the prerequisites choices marked out with a clear indicator that they were available because of a previous choice. The other group got to play without these prerequisites visible. The research question was answered by interviewing these participants after their playthrough of the artifact. Their experiences of the artifact was then interpreted and analyzed, to then be compared between versions in order to find how, or if, showing prerequisites affected their agency. The target audience for the participants was people with previous experience of the tower defense genre, enough experience to be able to successfully navigate the artifact without excessive explanations. The artifact took the form of a typical tower defense title that would allow the participants to use their previous experience to play the artifact with ease.

In total there were ten participants who volunteered for the study. The participants that were taken in for the study all had enough experience to play the artifact without problems. They were all between the ages of twenty to twenty-seven, and one participant identified as female while nine identified as male. All ten of them had previous or current experience of game's studies at the University of Skövde. Semi-structured interviews were held with the participants after they had played through the artifact, either with or without visible prerequisites. In these interviews the participants got to answer questions relating to the artifact, their experience and perception of it, as well as their general opinion on the topic of the artifact's mechanics and showing or hiding prerequisites.

The interviews were transcribed and interpreted in order to then be analyzed. The results focused firstly on the artifact's believability as a regular tower defense game, as it was

important for the artifact to function as a true strategic experience for the results to relate to the genre. All participants found the artifact more or less believable as a real tower defense title. Then the results focused on the participants' abilities to make informed and strategic decisions in the artifact. It was found that while minor problems obstructed the participants' ability to do so, they still all thought that it was both informative enough, and gave them strategic choices. Then the results focused on regret, and whether the participants' felt any surrounding their choices in the artifact. It was found that several participants felt regret when it came to strategic choices in the tower defense gameplay, but none expressed regret over what choices in the event boxes they picked. Then when it comes to agency, the study analyzed the participants' perceived satisfaction by looking at their expectations and intent, and then the feedback they received from the choice interface. From Tanenbaum and Tanenbaum's (2009) definition, agency is expressing intent and receiving satisfying feedback on that intent. The results point towards that there is an effect that comes up when showing which choices have prerequisites for players, as opposed to hiding this fact. This effect is that the player has a larger chance to experience strong agency when receiving feedback if the prerequisites are clearly marked out for the player. But in order for this effect to be argued as real beyond the scope of this small study, a more extensive study would have to be performed with both a larger amount of participants as well as a wider target audience.

6.2 Discussion

The study's research question puts focus on the agency that is experienced when the player views the dynamic content. In other words, the satisfaction that players feel from the choices selected in the beginning of the artifact, and how those choices affect the availability of other choices. The study wanted to see how this agency was affected by marking dynamic content as such for the player, and how this could be handled in the development of games. Especially those with choice interfaces of this kind, with includes but is not limited to both strategy games and role-playing games. The results that were extracted from the study's interviews point towards that the showing of prerequisites give a higher chance of giving strong positive agency, since they get clearer and more direct feedback on their previous choices. At the same time there are players who don't want to see prerequisites, despite the clearer feedback. The reasoning for this could not be established fully during this study, but it was found that the few participants that wanted to play without prerequisites did so either because they did not find them useful, or found that it went against their immersion.

Agency from the participants' interviews was interpreted with help from Tanenbaum and Tanenbaum's (2009) definition of agency, which sees agency as satisfying response to a specific intent. In other words, agency is when one decides to do something, and then receive an answer that is satisfactory in accordance to the thing one did. The more satisfying this feedback is, the stronger agency is experienced. This is one definition of agency among many, and was used mainly because of the fact that its logic of intent (or expectation) and feedback is very effective at being implemented in choice interfaces found in strategy games and role-playing games. The study by Sali et al. (2010) was used as inspiration for this study, and its semi-structured interview format. In their method they allowed the participants to play through all three versions of their artifact, which differs from this study's method in which the participants only play through one version each. This was done so that the participants' knowledge of the prerequisites, or lack thereof, would not affect their subsequent playthroughs. Not to mention that the data extracted would have to be analyzed with both their playthroughs in mind, something that would make the work exponentially

more difficult. It would however be possible to use the method of Sali et al. and then focus on whether or not the participants' knowledge of the artifact affected their later playthroughs, and how. Although, this would put the focus of the study on something way too unrelated to the core of showing and hiding prerequisites. Another method the study could have used would have been the quantitative approach of collecting data. This way the study would have focused more on gathering the general impressions of a larger number of people instead of doing analyzing in-depth the experiences of a few. It would however have been harder to verify the test sessions worth if there was no observation, which would have been the case with a quantitative approach. It would have also been a challenge to understand the deeper meanings behind opinions and choices made when it comes to dynamic content and prerequisites if it had been collected using surface level polls or something akin to that.

One aspect that the study did not place focus on in the research question is immersion. Several participants mentioned either immersion or the effect of being immersed when discussing their experiences. Specifically, one participant expressed that seeing prerequisites might go against their immersion in the game's narrative. It is important to note that these points, as well as the term immersion itself, were brought up by the participants without it being mentioned in any of the questions. To put a larger focus on immersion and its role in creating agency in the research question would have been interesting. It could have focused more on the player's identification with the character they chose to play as, in the interplay of choice and feedback. But since this study focused specifically on agency and how prerequisites affect the player, immersion was not a key subject to focus on.

Several participants mentioned how the believability of the artifact could have been made better by adding more features common to the tower defense genre. Several participants also mentioned how problems in the artifact made it hard at times to make informed decisions, and that if the artifact would have stood then it would have been hard to understand some of the more complicated mechanics. While these minor details and features are easy to fix, they were not considered fully beforehand. This could have been alleviated in some degree by having an extended pilot study with more participants and more time for play testing and adding features.

It is also important to mention that while it was expected that several participants would lose while playing the later waves of the artifact, in the end only one ended up actually losing. Several participants were close to losing at varying point during their playthrough, but in the end the majority pulled through by using tactical thinking. The one participant who lost however only did so at the final levels, and they gave just as useful answers to the questions as all the other participants. The impact of having lost the game, unlike all other participants, did not seem to affect their ability to reply to the questions with relevant and insightful answers.

It was decided early on to make the artifact's event boxes not draw too much attention to dynamic content. Games like *Europa Universalis IV* (Paradox Development Studio, 2013) shows off dynamic content in their event boxes by marking them as green and glowing. It is then very hard to not place full attention on these unique choices before all others. In the study's artifact the dynamic choices looks exactly like all the other choices, and in the version it's supposed to be marked out there simply reads a parenthesis in before the text of the choice which points out what earlier choice affected its inclusion. This element of the artifact was very crucial to get right, since the feedback from the dynamic content was the key to

answering the research question. It was then decided to make the dynamic content as neutral as possible, in order for the effect to be as easy to analyze as possible. Using a simple parenthesis instead of using glowing highlights could be seen as an attempt to be neutral in the design of the dynamic choices. But at the same time it is important to note that unlike other games in the strategy game genre, the dynamic content did not try to draw too much attention to itself, which could have impacted the results.

The artifact was seen by more or less all participants as a real digital strategy games. Several participants commented on ways it could be improved, both in terms of actual faults and added features. But overall, everyone thought that it passed as a regular tower defense game. Because of this the study can say that the results created out of the artifact could be seen as having come from a regular tower defense title.

The environment the play sessions and interviews were held in was optimal for the study's goals. The participants were all asked to sit in front of a computer in a calm and stress free environment. It was explained thoroughly that the participants were allowed to take as much time as they wanted to try to understand the systems, and selecting alternatives in the event boxes. In order to give some urgency to the player however, the waves of enemies had a timer between them which made the creatures spawn after one hundred seconds had passed. In one of the ten play sessions, one participant felt like this timer did not let them make an as informed decision as they could have, while the other nine expressed no hindrance from having a time limit. There was also no stress observed in the participants' actions during their play through, apart from the one participant that was affected by the timer. This one participant was however still able to express themselves in the game thanks to the event boxes not having any time limits. The participants were also asked to name dates and times for the test sessions to take place. This was done to have them test the artifact at a time they were most comfortable with, and would feel as little stress as possible, and be able to play the game without distraction. During three of the test sessions there were however other people present for short durations of the session. As they were asked to leave the private environment, this distraction was short and did not have an apparent effect on the participants' performance as compared to those who were not disturbed. It is still important to note that all test sessions did not go without distractions.

The target audience for the study was those who had previous experience with the tower defense genre. This was done to make sure that all participants could grasp the relatively complex systems implemented in the artifact. This was done to relative success, as all participants were able to not only play the artifact after a short introduction, but could also discuss the mechanics and narrative in-depth afterwards. It was however apparent that some participants were more able to answer with more detail, while some preferred to give shorter and more concise answers. This could be attributed to a lack of experience, but could also be argued that it was simply due to the participants' personalities. When asked to detail their statement further, most participants were able to at least give some more descriptions of the relevant subject.

It is also important to note the participants' other aspects, apart from just their previous experience with the tower defense genre. All the participants were between the ages of twenty and twenty seven, and were or had been students at the University of Skövde. Specifically, in the game's studies department. Despite the participants' previous experience in either working on or around digital games of different kinds, none had worked on a tower

defense title. As a result, their experience of the tower defense genre could be compared to the average player within this genre. It is however still relevant to make note of the fact that the participants were proficient in game's studies, as this allowed them to be more aware of intricate details of game's function and meanings. In order to argue further about the data extracted from this study, and make sure that their occupations weren't a major factor of the results, the study should have been performed on individuals without game's study or game development experience while still retaining an interest in the tower defense genre. The gap between men and women in the study is also very wide, as only one woman participated. It would have been greatly preferred to have an equal divide between the genders for the study. The artifact itself catered towards not leaning to any one gender in its narrative. The player character themselves is not gendered in any way throughout the narrative, no matter the choices made. The participants never questioned this, but just automatically assumed that their player character was the same gender as themselves. This was observed during the play sessions, when participants at times referred to their character as him or her, depending on what they identified as.

A number of steps were taken in order to address ethical aspects of the study, and avoid complications. No children took part in the study, in order to avoid troubles of consent form parents. The participants who took part in the study were all informed clearly about that they would be held anonymous in the study, and were given a thorough explanation of the study's goal and purpose if they wanted to hear it. They were also asked beforehand if they agreed to the interview being recorded. All participants said yes. They were also asked if they agreed to being observed during the play sessions. All participants said yes.

To research this type of agency in digital games could be helpful in helping games with the relevant mechanics to reach a broader audience and demographic. To find out how the interplay of intent and feedback functions in strategy games, or for that matter, any type of video game in which the player is allowed to express an intent and receive satisfying feedback to that intent, can greatly help the ability of those games to be designed in a satisfying way. It can also be used to reach different types of players, as understanding the intricate mechanics of a game's design will allow for that design to be tweaked and changed into a more precise tool of satisfaction.

This study created a foundation for later research within the topic of agency and game design to use if not as base then at the very least as an inspiration for how minor design changes can perhaps affect the player's experience in a major way. Hopefully this will lead to a greater understanding of agency in games, and how the decision, intent, feedback loop can be used to create richer and more interesting digital games overall.

6.3 Future Work

In order for this study to reach a more generalizable result a number of actions would have to be taken. Preferably the study would have continued and been performed with a much greater amount of participants, in order for the interpreted results to have been confirmed in a wider degree. This group of participants would preferably contain individuals outside of game development in order to confirm the degree as to game development experience would affect the results. The gathered data would then be analyzed with the earlier results in mind. The new results would show clearer how the different variables affected the earlier results, and in case those results could be considered generalizable or not. The same would be done

with other aspects of the participant group that would be considered homogenized or too focused, such as their age, gender divide, and varying levels of tower defense experience.

The study's results would also allow future work to continue within the same topic. The role that dynamic content and prerequisites have in digital games is wide and has only begun to be researched in this study. In case a study with a bigger and wider pool of participants would be performed, then the current study could be used as a reference point. The way the artifact was created when it comes to interactivity and believability in the tower defense genre was a success for the purpose of the study. It would however be good for future work to focus on doing more play testing beforehand as this caused some minor hiccups during the testing. Implementing more core features of the genre would also help in making the artifact more accessible, as well as making it easier to play without human intervention. The study could also use a method more akin to that of Sali et al. (2010) wherein the participants were allowed to play through all versions of the artifact and then answer questions relating to all versions afterwards. In this case it might however be necessary to create more reactions in the dynamic content, both visual and narratively, in order for the subsequent playthroughs to not ruin the illusion of choice.

In case a more believable and generalizable answer to this type of research question would be reached, then this would be of great value to game developers working with this type of game design in the industry. Future developers could use this result to understand just how this design choice, to either show or hide prerequisites, affects the player's experience. This study can also be used to argue that this is a subject that could be worth to further research, because of the ways that participants in this study have shown to be affected by visible or hidden prerequisites. It was interesting to see how many of the participants hadn't thought about this design choice beforehand, yet many knew exactly what they wanted out of their game when asked about it. Some people also deliberated on the point for quite some time, being both unsure and fascinated by the design choice and how it might have affected their experiences. It appeared to be a subject many do not think about actively, but one which might have the potential to affect the player's experience in both positive and negative ways.

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Appendix A - Interview Questions

This appendix contains the primary questions asked during the interview process, presented in both Swedish and English.

Kan du berätta för mig vad spelet handlar om, och vad ditt mål i spelet var?

Hur trovärdigt som ett riktigt towers defense spel tycker du att det här spelet är, baserat på din tidigare erfarenhet av genren?

Kände du att du hade tillräckligt kunskap om spelets system för att göra informerade val?

Kände du att de val du hade tillgängliga i event-rutorna tillät dig göra strategiska val?

Skulle du nu i efterhand velat välja något annat val vid något tillfälle?

De val som du fick göra i början, landscape, kingdom och ruler, kände du att dessa val gav dig den upplevelse som du förväntade dig? Och i så fall, vad förväntade du dig?

När du valde i spelets events, var en del val bara tillgängliga på grund av tidigare val. Hade du velat haft möjligheten att inte se vilka val som hade de förkraven? Eller tänkte du ens på att det fanns förkrav?

Can you tell me what the game is about, and what your goal in the game was?

How believable as a real tower defense game do you think this game is, based on your previous experience with the genre?

Did you feel like you had enough knowledge about the game's systems in order to make informed decisions?

Did you feel like the choices you had available in the event boxes allowed you to make strategic choices?

Would you now, in the aftermath, have chosen something else at any moment?

The choices you got to make in the beginning, landscape, kingdom, and ruler, did you feel like these choices gave you the experience you expected? In that case, what did you expect?

When you chose in the game's events some alternatives were only available because of previous choices. Would you have wanted to see what choices had prerequisites? Or did you even think about that there were prerequisites?

Appendix B - Quotes from interviews

This appendix contains quotes taken from the transcription of the interviews that were held during this study. The quotes are categorized by the questions asked and the topics presented in chapter 5.1. Both Swedish and English versions of the participants' quotes are presented. The artifact's two versions are called H, for hiding prerequisites, and S, for showing prerequisites. Within the categories the quotes are presented in the order of the participants, A through J.

Believability

A, S - Men, annars så tyckte jag att det stämde bra överens med genren, förutom att det var lite mer story då. Det brukar ju vara bara sätta upp torn och döda saker, utan någon specifik anledning.

But, other than that I think that it overlapped well with the genre, except for there being a bit more story. It's usually just building towers and killing stuff, without any specific reason.

B, H - Ja, vafan, det här är väl ett TD, som man nästan kan tro att det är taget från valfritt Warcraft 3 mod. Du har olika torn, uppgraderingar på torn, olika damage types och typer av fiender av olika slag. Du har mat, du har guld, du har liv. Alla byggstenarna av ett TD finns där. Om inte mer avancerat över basic. Och så har du också det här med choose your own ruling style systemet som utökar det ännu mer.

Sure, this is a TD, almost as if it's taken from any Warcraft 3 mod. You have different towers, upgrades for towers, different types of damage and types of enemies. You have food, you have gold, you have life. All the components of a TD are there. If not even a bit more advanced than basic. And then you also have this choose your own ruling style system that increases it even more.

C, S - I would believe you if you told me this was something somebody was just, handing out as a tower defense game.

D, H - Det verkar, jag skulle säga, det verkar ganska trovärdigt. Jag tycker det kändes kul att spela, kändes som det hade någonlunda mängd djup på olika val och grejor man kunde göra.

It seems, I would say, it seems pretty believable. I thought it felt fun to play, felt like it had somewhat differing amount of depth for different choices and stuff you could do.

E, S - Det kändes väldigt bra faktiskt. Jag är inte van vid att man kan sälja en byggnad för samma värde som man byggde den för. Utöver det så kändes det väldigt bra.

It felt very good actually. I'm not used to being able to sell buildings for the same price you built it for. Other than that it felt very good.

E, S - Tower defense handlar ju mycket om micro management, att planera mycket i förväg och hitta en optimal strategi. Och de här valen man gjorde mellan varannan våg, kände jag bara gav det mer strategiska val du kan göra för att klara dig längre i princip.

Tower defense is all about micro management, and planning a lot to find a optimal strategy. And these choices you made between every other wave, I felt gave more strategic choices you could make to survive longer, basically.

F, H - Det är väldigt grundläggande. Men det fungerar.

It is very basic. But it works.

G, S - Alltså, det är ju ett tower defense spel i alla definitioner av ordet.

I mean, it's a tower defense game in every sense of the word.

H, H - Väldigt trovärdig. Det är gjort precis som ett vanligt tower defense spel så att säga. Jag har kört väldigt många, det är säkert en fråga sen, men jag tycker det var exakt vad tower defense brukar vara. Man har någon sorts resource management och torn som kan uppgraderas på något sätt och man brukar kunna se vad som kommer det var nice skillnad för med många olika defense typer för det brukar oftast bara vara två eller tre. Så det var bra.

Very believable. IT is made precisely as a regular tower defense game so to say. I have played very many, I'm sure it's a question later on, but I think it was exactly what tower defense usually is. You have some sort of resource manage and towers that can be upgraded in some way, and you are usually able to see what is coming it was a nice difference for since many different types of defense types since there is usually only two or three. So that was good.

I, S - Det är faktiskt ganska trovärdigt.

It is actually pretty believable.

J, H - Jag tyckte det var bra. Jag gillade damage typerna och att man kunde se dem. För man får ju typ välja hur långt fram man vill göra sin strategi liksom.

I thought it was good. I liked the damage types and that you could see them. Since you can kind of choose how far in the future you want to make your strategy, kind of.

Informed and Strategic Decisions

A, S - Ja, när man kunde fråga dig samtidigt så var det fine. Men det hade varit jobbigt, ifall man hade spelat helt utan hjälp.

Yes, when you could ask you at the same time it was fine. But it would have been harder if you would have played without help.

A, S - Ja, det tyckte jag. Man fick ju tänka på vad man behövde för [...] resurser och hur mycket HP man hade och så. Men så ville man ju inte heller, eller jag ville i alla fall inte ta de som kändes jätte elaka mot byborna, eller de som kändes, som lät dumma bara.

Yes, I thought so. You could think about what you needed for [...] resources and how much HP you had and so. But you also did not want, or at least I did not want to take those that felt really evil towards the villagers, or those that felt, kind of just mean.

B, H - Om vi bortser där information inte syntes på grund av syntaxfel, så ja. Då känns det som jag kan göra informerade val om hur det jag gör, och det fanns gott med tid för att kunna göra det.

If we disregard where the information was not visible due to syntax errors, then yes. Then it felt like I could make informed decisions on how I am doing, and there was a good amount of time in order to do it.

B, H - Men utav de val man kan göra så kan man ju välja beroende på spelstil. Att vill man ha guld för att bygga större torn, vill man ha mat för att bygga fler torn, eller vill man ha health för att kunna ta risker.

But from the choices you could make you could pick depending on your play style. That if you want to have gold in order to build bigger towers, if you want food to build more towers, or if you want health to take risks.

C, S - Other than the fact that I would have loved to have circles over the towers that indicated range, this game did very well on telling me what my choices were.

C, S - Yeah. I got to focus on what kind of resource I valued. Then I guess you could also say I got to role-play a little, yeah.

C, S - Jag menar, det rollspelsmessiga slutar ju spela någon roll om det mekaniska upphör. Så jag fokuserar på det mekaniska fram till jag inte behöver fokusera på det mer. Sen så spenderar jag resterande av min fokus på rollspelet.

I mean, the role-play stops mattering if the mechanical ceases. So I focus on the mechanical until I don't need to focus on it any more. Then I spend the remaining of my focus on the role-playing.

D, H - Kanske inte om du inte hade förklarat några grejor för mig. Det var några grejor, som att jag tycker att UI:n är lite udda på ställen. Men när du väl förklarade saker, då funkade det.

Maybe not if you had not explained some things to me. There were a few things, such as I think that the user interface is a bit odd in a few places. But once you explained things, it worked.

D, H - Jag tänkte inte så jättemycket på vad texten sade, utan jag fokuserade på vad jag fick från valen.

I did not think a lot about what the text said, but rather I focused on what I got out of the choices.

E, S - Ja, det tycker jag definitivt. Till skillnad från de tower defense spel som jag spelat förr så var det väldigt informativt med tanke på att jag både kan ta reda på vilken typ av fiender jag kommer möta samt vilket typ av skada mina torn gör, och vilket typ av fiender som tar extra skada av vad och all sådan information.

Yes, I definitely thing that. As opposed to other tower defense games that I have played before it was very informative considering that I both could find out what type of enemies I will meet as well as what type of damage my towers do, and which type of enemies take extra damage by what and all such information.

E, S - Definitivt. Exempelvis, där när jag hade väldigt få hjärtan eller liv kvar, så valde jag det alternativ som gav mig flest liv. Och jag tror det räddade mig där, för jag tror jag förlorade fler liv rundan därefter jämfört med hur många hjärtan jag hade rundan innan liksom. Så att, definitivt.

Definitely. For example, when I had very few hearts or life left, I chose the alternative that gave me the most life. And I think that saved me there, because I think I lost more life the next round compared to how many hearts I had the round before. So, definitely.

E, S - Nu är jag inte helt hundra på vilket val det var men det var något där jag nog hade velat ta mer, asså, jag hade velat ta ett alternativ för jag tyckte texten passade mer det valet jag hade velat göra om jag levde mig in i storyn. Men när jag kollade på vad jag fick ut ur texten så såg jag något annat alternativ som gav mig mer lockande reward, liksom.

I'm not a hundred on what choice it was but there was something where I probably would have wanted to pick more, I mean, I would have wanted to pick an alternative because I thought the text fit more than the choice I would have wanted to do if I tried to live into the story. But when I looked at what I got out of the text then I saw some other alternative that gave me a more enticing reward, kind of.

F, H - Ja, det skulle jag säga. Informationstillgängligheten var mycket hög om man tittar. Sen kanske jag inte utnyttjade det fullt, men all information finns tillgänglig.

Yes, I would say so. The information availability was very high if you look. Then maybe I didn't use it fully, but all information was available.

F, H - Till exempel den när det kommer ett magic val som första gången och man kan välja fyrtio guld, vilket är exakt vad det kostar att uppgradera ett house till ett witches' hut. Kändes ganska bra.

For example the one when it comes a magic choice for the first time and you could pick forty gold, which is exactly the amount it costs to upgrade a house to a witches' hut. Felt kind of good.

F, H - När jag inte fick ut något från det så valde jag estetiskt. Men varje gång jag kunde välja vad resultatet var så valde jag det som var mekaniskt bäst. Det som var optimalt i situationen.

When I didn't get out anything from it I picked aesthetically. But every time I could pick the results I chose the one that was mechanically best. The one that was optimal in the situation.

G, S - Ja, det skulle jag säga. Man får rätt tydligt information just om damage, dps, och så liksom att man kan räkna sig fram rätt lätt till vad man vill göra så att säga. Det enda var att det saknades range indikatorer på en del saker, men annars var det bra.

Yes, I would say so. You get pretty clear information about damage, dps, and so on that you could calculate pretty easily towards what you wanted to do so to say. The only thing was that range indicators were missing on some things, but otherwise it was good.

G, S - Ja, det var definitivt strategiska val, även om de är reaktionära. Det var mycket vad behöver jag just nu, inte så mycket vad behöver jag i framtiden.

Yes, it was definitely strategic choices, even if they are reactionary. There was much of what do I need right now, not so much what do I need in the future.

H, H - Ja. Det gjorde det, för jag valde ju, de valet jag tog var ju mestadels strategiska utifrån att vinna spelet, och det är ju samma som narrativ för jag vill ju rädda min by, min stad så att säga. Så det blir ju på något sätt samma sak, att försöka maximera och få så mycket resurser som man vill ha, och då väljer man det valet som mig mest resurser av den typen jag är ute efter. Om det makear sense.

Yes. It did, since I picked, like, the choice that I picked was mostly strategic towards winning the game, and that's the same as narrative since I want to save my village, my city so to say. Since that becomes the same thing, to try and maximize and get as many resources as you want to have, and then you pick the choice that gave me the most resources of the type I am looking for. If that makes sense.

I, S - Det tyckte jag definitivt. Eftersom man visste vad nästa wave skulle ha, hur mycket HP de hade, vilken typ, och hur snabba de var, tyckte jag att man hade mycket val som- okej jag kan spendera ett extra torn här för den här typen bara för att fixa här, men jag vet ju att om två rundor så kommer magic typ som jag inte har nån defense för så jag måste spara upp pengar för det. Jag tycker definitivt att jag hade det.

I thought so definitely. Since you knew what the next wave would have, how much HP you had, which type, and how fast they were, I thought that you had a lot of choice that- okay I can spend an extra tower here for that type just to fix here, but I know that magic types are coming in two rounds that I don't have any defense for so I have to save money for that. I definitely think that I had that.

I, S - Ja, definitivt. Jag tyckte att vid flera tillfällen att jag behövde få in mer pengar på nått sätt, vilket skyddar mig från nästa runda och monster liksom. Och eftersom man hade den informationen som jag sa innan, så tillåter det dig att göra bättre val- amen nu får jag in extra guld vilket jag kan då antingen spara för att nästa runda vet jag ju att det kommer en typ av monster jag inte är bra förbered på att attackera.

Yes, definitely. I thought at several occasions that I needed to get in more money in some way, which protects me from the next round and monsters kind of. And since you had that information that I said before, it allows you to make better choices- alright now I gain extra gold which I then either save since the next round I know will bring a type of monster that I'm not well prepared on attacking.

I, S - På så sätt så tycker jag- jag vet inte. Den gången jag inte fick reda på vad som hände var det ju definitivt svårare. Att bara veta resultatet av valet gjorde det ju lättare att spela igenom spelet. Det kan nog vara intressantare som ledare att inte veta exakt hur folket kommer reagerar på det.

In some way I think that- I don't know. That time when I didn't get to know what happened was definitely harder. To only know the results of the choice made it easier to play through the game. It can probably be more interesting as a leader to now know exactly how the people will react to it.

J, H - Ja då, det kände jag. Det enda jag kändes saknades var hur många finder som skulle komma.

Oh yeah, I felt that. The only thing I felt was missing was how many enemies were going to come.

J, H - Om du vet all information så kan man ju optimera det på en matematisk nivå. Så länge det finns någon variabel, som till exempel hur många fiender som kommer, då blir det ju unpredictability, och det är ju kul liksom. Plötsligt så slinker det igenom några och då bara shit, då måste man tänka on the fly. Och det är ju roliga spelmoment.

If you know all information then you could optimize it on a mathematical level. As long as there is some sort of variable, like for example how many enemies that are coming, then that becomes unpredictability, and that's fun. All of a sudden a couple of enemies might slip past and then it's just shit, you got to think on the fly. And that's fun game moments.

J, H - Men ja, jag tyckte valen var bra. Det var några jag funderade på. Jag var lite rädd för bossarna. Tänkte, behöver jag verkligen extra HP för bossarna? Nej, jag har tio HP. Jag tror jag behöver guld. För ifall bossarna är för starka så kanske jag får ner en boss och då har jag nog med guld för en uppgradering och då sprängerna jag bossarna. Så ja, jag tyckte det var bra val.

But yes, I thought the choices were good. There was a couple I wondered over. I was a little afraid of the bosses. I thought, do I really need extra HP for the bosses? No, I have ten HP. I think I need gold. Because in case the bosses are strong, then maybe I can get down one boss and then I have enough gold for an upgrade and then I can blow up the bosses. So yes, I thought there were good choices.

Regret in Choices

A, S - Var ju tvungen att välja det som lät mig leva, även om, ah, det kanske inte var det jag ville.

I had to pick the one that let me live, even if, ah, it might have not been what I wanted.

B, H - Personligen, nej. Om jag kör det här igen, så tror jag att jag kommer köra samma val igen, att jag kör plus guld. Enda valet jag kanske skulle tänka på är att jag inte skulle satsa på de här uppgraderingarna för de är dåliga. För att, ah, det känns som att vissa av valen inte är fullt balanserade. Och har man spelat en till tre gånger skulle man kunna se vilka som är värdelösa.

Personally, no. If I play it again, then I think I will pick the same choices again, that I run plus gold. The only choice I maybe would consider would be to no go for these upgrades because they are bad. Because, ah, it feels like some of the choices aren't fully balanced. And if you have played one to three times you would be able to see which are worthless.

C, S - Nej, jag känner inte någon större ånger för något val jag gjorde.

No, I don't feel any major regret over any choices I made.

D, H - Jo, jag skulle valt lite mindre food. Vid det första valen man fick tog jag food istället för guld om jag minns rätt. Kändes som att guld var mer värdefullt.

Yeah, I would have choicen less food. At the first choices you got I picked food instead of gold if I remember correctly. It felt like gold was more valuable.

E, S - Nja, det tror jag inte. Jag antog att vissa val jag hade där endast beroende på vad jag hade valt för rike och landskap i början. Så gick jag mest utefter rewarden var när jag gjorde ett val, snarare än vad texten föreslog att jag gjorde.

I don't think so. I assumed some choices I made there were only affected by what I had picked for my kingdom and landscape in the beginning. So I went mostly according to the reward when I made a choice, rather than what the text suggested that I did.

F, H - Nej, tror inte det. Jag är ganska nöjd med mina val.

No, I don't think so. I am pretty happy with my choices.

G, S - Det var ingenting som jag klicka fel på, som jag hellre hade velat ha just då. För valen vi gjorde var ju som sagt reaktionära, och jag tar ju då det som passar bäst just då. Så jag ångrar då inget val.

There was nothing that I clicked wrong on, that I'd rather would have had right then. Because the choices we made were, as I said, reactionary, and that means I'll take that which fits best right then. So I don't regret any choice.

H, H - Jag tror inte det. Det enda jag trodde skulle ha mest påverkan var typ såhär att man valde det där i början vilken ledare man var och att man spelade efter det.

I don't think so. The only thing I thought would have more of an effect was kind of like that if you picked what sort of leader you were in the beginning and played after that.

I, S - Det fanns nog ett tillfälle i början där jag skulle kunna satsa på att ta pengar istället för mat, för att jag kände att farmen var ganska billig att bygga upp, och man kunde få in mer penar tror jag. Jag känner att det nog hade varit ett bättre val i början. Jag kände att det var ganska lugnt i början och hade jag haft lite mer pengar så hade jag kunnat klara den rundan där jag tappade lite liv på.

There was probably a moment in the beginning where I would be able to try taking money instead of food, because I felt like the farm was pretty cheap to build, and you could get in more money I think. I feel that probably would have been a better choice in the beginning. I felt that it was pretty calm in the beginning and if I had a bit more money then I would have been able to complete the round I lost life on.

J, H - Det vet jag inte. I played it safe vid ett av valen med HP istället för guld. Jag hade kunnat välja guld där, för jag tror jag klarade mig igenom enough, så jag hade kunnat spela lite mer risky.

I don't know that. I played it safe at one of the choices with HP instead of gold. I could have picked gold there, because I think I would have survived enough, so I could have played a little more risky.

On Dynamic Content

A, S - Men vilken ruler man var trodde jag skulle påverka mest, sen kingdom lite kanske. Men i alla fall, vilken sorts ruler man var tyckte jag påverkade mest, eller det hade jag lite förväntningar på att det skulle variera vilka val man hade att välja mellan.

But what ruler you had I thought would affect the most, then kingdom a bit maybe. But in any case, which ruler you had I thought would affect the most, or I had a bit of expectation on that it would have varied what choices you had to pick between.

B, H - Jag förväntade mig någonting, i alla fall i flavortext, att tornen man har är speciella, eller att fienderna man möter är annorlunda. Så istället för en slime så möter man en desert worm eller nått sånt. Även om de har exakt samma stats att de liksom heter andra saker beroende på vart du är.

I expected something, at least as flavortext, that the towers you have are special, or that the enemies you meet are different. So instead of a slime you meet a desert worm or something like that. Even if they have the exact same stats as them like are called different things depending on where you are.

D, H - Så vitt jag kan märka så gjorde de ingen skillnad alls. Men, nej, jag kände inte att de påverkade spelet på något märkbart sätt.

As far as I can see it made no difference whatsoever. But no, I did not feel like they affected the game in any noticeable way.

E, S - Jag tror jag förväntade mig att fler alternativ skulle vara riktade mot det val jag hade gjort. För om jag tolkade rätt så var det alltid bara ett val som var baserat på de val jag gjorde i början, och två eller tre andra val var riktade andra val man gjorde i början. Men jag tänkte att eftersom jag var en sage och forest, så kanske jag hade fått välja mellan de två någon gång. Alltså att det var fler som var baserade på mina val samtidigt. Det tror jag att jag tänkte skulle hända.

I think I expected more alternatives that would be addressed towards the choices I made. Because if I interpreted correctly then it was always only one choice that was based on the choices I made in the beginning, and two or three other choices were addressed towards other choices you made in the beginning. But I thought that because I was a sage and forest, then maybe I would have gotten to pick between the two at some point. I mean that there would have been more based on my choices at the same time. I think I figured that would happen.

F, H - Jag är helt osäker på hur de påverkar.

I am completely uncertain on how they affect.

F, H - Jag hade inga direkta förväntningar. Jag tänkte att det var mer vilket flavor av text man fick och då valde jag- jag försökte göra ett vikinga kungadöme.

I had no direct expectations. I thought that they were more what flavor of text you got and then I picked- I tried to make a Viking kingdom.

G, S - Nej, inte specifikt. Det var inga direkta kopplingar till det här kanske är lättare att försvara, det var inget sånt var det. Det var bara rent vad jag kände just då så att säga. Tyckte det lät fränt med en scheming winter mercenary område liksom.

No, not specifically. There was no direct connections to this might be easier to defend, it was nothing like that. It was only purely what I felt like right then and there so to say. I thought that it sounded cool with a scheming winter mercenary area.

H, H - Jag tror att jag trodde att de skulle ha mer inverkan.

I think that I thought that they would have more of an affect.

H, H - På det sättet så ser man ju skillnad, men jag trodde det skulle vara mer skillnad. Så jag ser ju att det förmodligen var olika val i spelet eftersom jag tog det, men det märkes inte så stort eftersom jag inte kört de andra versionerna.

In that way you do see a difference, but I thought that it would be more a difference. So I see that there probably was different choices in the game since I picked that, but it wasn't noticeable enough since I hadn't played the other versions.

I, S - Jag tyckte även att de valen som kom upp i spelet som hade inom brackets, att dem var den featen så att säga som gjorde det, tyckte jag att jag oftast valde det valet. Kände att det valet fungerade bäst för mig helt enkelt. På det sättet så känner jag att det var ett bra val. Det kändes ju även som att det påverkade mycket. Jag kände bara, ah, men aja, bara för att jag är en schemer så kan jag göra det här och det här istället vilket är nice.

I thought that even if the choices that came up in the game that had within brackets, that they were- that feat so to say that made it, I thought I often picked that choice. I basically felt like that choice worked best for me. In that way I feel like it was a good choice. It felt even if it affected a lot. I felt like, ah, oh well, I can make this and that choice only because I'm a schemer instead which is nice.

J, H - Jag känner att det inte hade gjort så mycket in-game. Det enda som var skillnad var väl valet i slutet där de trupper som du inte valde kommer och hjälper kanske? I don't know. Kanske att de kommer ändå.

I feel that it hadn't done much in-game. The only difference was the choice at the end when the troops that you didn't pick come and help, maybe? I don't know. Maybe they come either way.

J, H - Om jag hade valt han barbarian killen, så hade en del av dialogvalen varit mycket mer aggressiva. Alla val som jag fick var väldigt thought out, och regular. Så I guess, det kan ha med mitt ruler val att göra. Men asså, jag hade ju en nice range of choices. Om jag hade valt barbaren så kanske jag hade fått mindre choice, han kanske bara ville slåss, slåss och slåss liksom.

If I had chosen him the barbarian dude, then maybe a part of the dialog choices would have been much more aggressive. All the choices I got were very thought-out, and regular. So I guess, it could have had to do with my ruler choice. But I mean, I had a nice range of choices. If I had picked the barbarian then maybe I would have gotten less choice, maybe he just wanted to fight, fight, and fight.

On Prerequisites

A, S - Men jag gick mest bara efter vad som stod i valet och vad man fick av det. Men sen så var jag ju inte mer sugen på att ta det valet bara på grund av att det var sage, men ah, som sagt, gick mest efter vad det var som stod och vad det gav för något.

But I mostly just went after what said in the choices and what you got out of it. But then I wasn't more interested in taking the choices just because of it being sage, but ah, as I said before, I went mostly after what it said and what it gave.

B, H - Men, nej, jag tycker fortfarande att det inte är information som behöver sägas. Det borde förmedlas via berättelsen istället.

But, no, I still think that it's not information that's needed to be said. It should be conveyed though the story instead.

C, S - Det hade nog inte tagit ifrån nånting, om dem inte hade markerat det.

It probably wouldn't have taken anything from it, if they hadn't marked it.

C, S - Det här valen som var specifikt utmarkerade som att de kom från att jag var en mercenary, eller av att jag var i desert var väldigt passande till det och gav inlevelse till och trovärdighet till de här sakerna som hände. Och fick dig att tro att det är saker som händer här istället för att det är text som relaterar till till exempel en gräsplätt någon annanstans.

These choices that were specifically marked as if they came from that I was a mercenary, or that I was in desert was very fitting to that and gave immersion to and believability to these things that happened. And made you think that there are things that are happening here instead of that it is text that relates to for example a grass field somewhere else.

D, H - Tror inte jag bryr mig om det, ärligt talat. Tror inte att det hade gjort någon skillnad. Eller kanske? Jag vet inte. Det kanske hade fått mig att tänka lite mer, att känna mig mer glad att jag gjorde vissa val i början. Asså, så som det är nu så känner jag att de val jag gjorde i början inte gjorde någon skillnad alls. Jag hade nästan glömt bort att jag gjorde dem innan du nämnde dem igen. Medans, om det hade var där, att det stod det här valet, liksom, du valde det här! Skulle jag kanske känt att jag hade mer kontrol över vad som händer. Kanske hade känt att jag velat spela igen med andra val. I början.

I don't think I care about it, honestly speaking. I don't think it would have made any difference. Or maybe? I don't know. It might have made me think a bit more, to feel more happy that I made certain choices in the beginning. I mean, as it is now I feel like the choices I made in the beginning didn't make any difference at all. I had almost forgotten that I made them before you mentioned them again. All the while, if it had been there, that it said this choice, like, you picked this! It would maybe made me feel like I was in more control over what's happening. Maybe made me feel like I wanted to play it again with different choices. In the beginning.

E, S - Jag vet inte om jag hade föredragit det ena eller det andra. Men jag tror det hade påverkat mig. Jag vet att första gången jag såg det valet att jag tänkte att det kanske bara dyker upp lite då och då, och att jag borde ta det när det väl dyker upp då. Det var den avgörande faktorn till varför jag tog just den. Sen märkte jag att det dök upp varje gång, och då fokuserade jag mer och mer på den mekaniska, det som jag fick ut av varje alternativ, och lite mindre på vilket som var unikt för mig.

I don't know if I had preferred one or the other. But I do think that it would have affected me. I know that the first time I saw the choice that I thought that it might just appear every now and then, and that I should take it when it does appear. It was the deciding factor to why I picked that one. Then I noticed that they appear every time, and then I focused more and more on the mechanical, what I got out of each alternative, and a bit less on which was unique for me.

F, H - Jag antog att det skulle påverka valen på nån del. Sen, jag vet inte till vilket utsträckning. Sen kanske hade jag uppskattat att ha en beskrivning i början på vilka val de grejer man väljer fokuserar på. Om du väljer att vara en blunt and powerful warlord så får du mer guld men mindre någonting annat. Att man får en liksom generell idé över vad man väljer.

I assumed that it would affect the choices on some part. Then, I don't know to what extent. Then maybe I would have appreciated having a description in the beginning on which choice the thing you picked focuses on. If you choose to be a blunt and powerful warlord you get more gold but less something else. And you get like a general idea over what you pick.

G, S - Jag gillade att man såg varför det var specialevents. Jag gillade det på grund av att jag hade inte reagerat annars på att det var ett environmental- variabeleffekt. Jag hade nog inte registrerat det ens. Så jag uppskattar att det säger att detta är ett specialevent. Om inget annat så ger det replayability när man kör. Då hade man ju undrat vad de andra variablerna ger för effekter.

I liked that you see why there were special events. I liked it because of the fact that I would not have reacted otherwise on that it was a environmental- variable effect. I would have probably not even registered it. So I appreciate that it tells you that this is a special event. If nothing else then it gives replayability when you run it. Then you could have wondered what effect the other variables give.

H, H - Jag antar att det är nice, men samtidigt så är det ju att när jag är i spelet sen så är jag ju i spelet. Så då ska jag ju inte heller veta att de valen ska vara där. Jag vet inte riktigt om det är viktigt eller inte.

I guess that it's nice, but at the same time it's also so that when I'm in the game I'm in the game. Then I shouldn't be able to know that those choices should be there. I don't know exactly if it's important or not.

J, H - Jag tänkte inte på att det skulle finnas några förkrav.

I didn't think about that there were supposed to be prerequisites.

J, H - Det var inget jag saknade.

It wasn't something I missed.

Appendix C - Transcription of interviews

In appendix C the interviews are presented in their entirety. The italicized text represents the questions and follow-up questions, while the remaining text represents the participants' various answers. Text in bold represents the parts quoted in appendix B. The participants' identities are kept anonymous by giving each of them by a letter from A to J. The artifact's two versions are called H, for hiding prerequisites, and S, for showing prerequisites. The interviews were held in Swedish, as is shown by these transcripts. Relevant quotes from these transcripts are translated into English in appendix B. In some cases the participant chose to answer partially or fully in English, in which case only the Swedish parts were translated.

Participant A – Version S

Kan du berätta för mig vad spelet handlar om, och vad ditt mål i spelet var?

Målet var att skydda sitt torn eller slott, och ah, från waves av fiender, och då skulle man ställa upp defense torn, för o döda dem innan de kommer fram.

Hur trovärdigt som ett riktigt towers defense spel tycker du att det här spelet är, baserat på din tidigare erfarenhet av genren?

Jag tyckte det var väldigt trovärdigt. För, vad heter det, jag tror inte jag kört något innan där det är så här tidsbaserat mellan waves, utan antingen är det så att man kan sätta på eller stänga av om de ska komma hela tiden. Så det är det enda jag har kört, så det var lite stressigt. **Men, annars så tyckte jag att det stämde bra överens med genren, förutom att det var lite mer story då. Det brukar ju vara bara sätta upp torn och döda saker, utan någon specifik anledning.**

Kände du att du hade tillräckligt kunskap om spelets system för att göra informerade val?

Ja, när man kunde fråga dig samtidigt så var det fine. Men det hade varit jobbigt, ifall man hade spelat helt utan hjälp. Men det gick ju bra ändå, men det var ganska svårt.

Kände du att det hade mycket med tidskravet, eller känner du att ifall du hade kunnat göra mer informerade val ifall du hade haft mer tid?

Ja, om jag hade kommit ihåg att man kunde sälja torn från början så hade jag gjort det oftare, och sen, det hade varit bra ifall jag hade läst uppgraderingarna innan, men det hann jag inte riktigt.

Kände du att de val du hade tillgängliga i event-rutorna tillät dig göra strategiska val?

Ja, det tyckte jag. Man fick ju tänka på vad man behövde för, ah, resurser heter det, vad man behövde för resurser och hur mycket HP man hade och så. Men så ville man ju inte heller, eller jag ville i alla fall inte ta de som kändes jätte elaka mot byborna, eller de som kändes, som lät dumma bara. När man som ledare sa, fuck it vi struntar i att satsa på magi vi kör bara på det vi har – det lät inte så jättestrategiskt till exempel.

Du sa under testning att du ville köra en karaktär som var snäll eller god.

Ja, det var det som, vad heter det, som matchar mig mest. Eller vad man ska säga. Då tog jag ju skogen för den lät mysigast och minst svår. Det brukar vara att ju jobbigare miljö är det desto svårare är det. Men sen kanske inte det gör någon skillnad. Tänkte mest att det var visuellt kanske. Men ändå.

Var det något tillfälle där du kände, okej, jag kör en karaktär som är god, och därför väljer jag inte ett val som är ont, även om det kanske är bättre?

Ja, några gånger. Sen fick man ju kompromissa lite grann beroende på vad man behövde för saker. Men oftast så ville jag ju inte ta den som var mest elak.

Var det som att du ville balansera vad som är bäst, men samtidigt inte gå emot den karaktär som du valde i början?

Ja, precis.

Skulle du nu i efterhand velat välja något annat val vid något tillfälle?

Nej, jag tycker det var bra. Förutom själva sätta ut torn biten, då. Men story-messigt så tyckte jag det var bra. Men sen så, beroende på hur det gått i, ah, tower defense biten så varierade ju det också. Det påverkade vilka val man tar eftersom, eh, till exempel, de här snabba kaninerna kom ju igenom lite grann i början. Och då kände man ju verkligen inte för att ta vissa, då ville man ju kompensera för att det gick dåligt genom att ta det lite snällare valet just då, och skydda byborna mer. Kände jag i alla fall. Att om de hade invaderat några stycken så ville man göra något snällt efteråt om man kunde.

Jag märkte att du vid ett tillfälle ville välja ett val, men valde ett annat för att få mer HP.

Ja, det var ju för att jag inte ville förlora av några snabba jäklar efteråt. **Var ju tvungen att välja det som lät mig leva, även om, ah, det kanske inte var det jag ville.**

De val som du fick göra i början, landscape, kingdom och ruler, kände du att dessa val gav dig den upplevelse som du förväntade dig? Och vad förväntade du dig?

Du menar bara upplevelse genom hela spelet, liksom?

Absolut.

Jag vet inte riktigt vad jag förväntade mig. Du sa ju innan att det skulle påverka spelet, men i alla fall inte på vilken bana det var, för att det kändes som att det skulle vara mest visuellt. **Men vilken ruler man var trodde jag skulle påverka mest, sen kingdom lite kanske. Men i alla fall, vilken sorts ruler man var tyckte jag påverkade mest, eller det hade jag lite förväntningar på att det skulle variera vilka val man hade att välja mellan.**

När du valde i spelets events, var en del val bara tillgängliga på grund av tidigare val. Hade du velat haft möjligheten att inte se vilka val som hade de förkraven? Eller tänkte du ens på att det fanns förkrav?

Det var väl bara den där southern tribe kom i slutet och gav massa pengar.

De valen som hade en liten parantes innan sig där det stod forest, eller empire, tänkte du på att det stod så i början av valen?

Ah! Om jag tänkte på att det skulle- ja lite grann. Det fanns ju ett val där man kunde bränna ner skogen, och det kändes taskigt. Eller tråkigt. Det stod ju att det var desperate times, så jag var inte så sugen på att ta den då. Sen kommer jag inte ihåg ifall den var bättre än de andra. **Men jag gick mest bara efter vad som stod i valet och vad man fick av det. Men sen så var jag ju inte mer sugen på att ta det valet bara på grund av att det var sage, men ah, som sagt, gick mest efter vad det var som stod och vad det gav för något.**

Participant B – Version H

Kan du berätta för mig vad spelet handlar om, och vad ditt mål i spelet var?

Målet i spelet är att du som äger det här slottet ska bygga upp ett försvar och hålla liksom hålla slottets livspoäng över noll tills du besegrat alla waves av monster, upp till en boss på slutet. Du kan göra detta genom att köpa olika torn som har olika effekter och olika typer av damage och andra attributer. Samtidigt som att du måste hålla koll på din mat, guld och liv som resurser. Som också påverkas av val du kan göra mellan rundorna.

Hur trovärdigt som ett riktigt towers defense spel tycker du att det här spelet är, baserat på din tidigare erfarenhet av genren?

Ja, vafan, det här är väl ett TD, som man nästan kan tro att det är taget från valfritt Warcraft 3 mod. Du har olika torn, uppgraderingar på torn, olika damage types och typer av fiender av olika slag. Du har mat, du har guld, du har liv. Alla byggstenarna av ett TD finns där. Om inte mer avancerat över basic. Och så har du också det här med choose your own ruling style systemet som utökar det ännu mer.

Kände du att du hade tillräckligt kunskap om spelets system för att göra informerade val?

Om vi bortser där information inte syntes på grund av syntaxfel, så ja. Då känns det som jag kan göra informerade val om hur det jag gör, och det fanns gott med tid för att kunna göra det.

Du kände inte att timern var stressande?

Nej, det är hundra sekunder, så. Visst om jag kanske var mindre erfaren, men jag kan också säga att liksom, hade jag liksom haft mer tid om jag hade varit nybörjare så hade jag kunnat tänka ut bättre val. Det ligger i den enda kritiken kanske är att man just inte kan se området ett torn kan täcka, utan man måste räkna ut det själv.

Är det då svårt att göra ett informerat val där?

Det kan bli svårare. Man kan ju fortfarande räkna och säga att, ah, cirkeln ser ut ungefär så här stor ut. Men om en ny spelare förväntas göra det och ha en timer kan det vara svårt, men det kan lösas genom att implementera dem funktionaliteten.

Kände du att de val du hade tillgängliga i event-rutorna tillät dig göra strategiska val?

Av det de omfattade, ja. För det lät mig att liksom, gå på den strategin att mitt liv, mina livspoäng blir en resurs, som tillåter mig att bygga en bättre vägg. Men leakar jag så blir jag körd. Sen kan man ju utveckla utöver de tre attributerna. Säg att det fanns nån där man

kunde ha guard eller mercenaries som byggde barrikader och de får du, och de droppas på vägen. Det hade varit varit något som tornen inte direkt interagerar med, men de hade kunnat stoppa fienderna. **Men utav de val man kan göra så kan man ju välja beroende på spelstil. Att vill man ha guld för att bygga större torn, vill man ha mat för att bygga fler torn, eller vill man ha health för att kunna ta risker.**

Skulle du nu i efterhand velat välja något annat val vid något tillfälle?

Personligen, nej. Om jag kör det här igen, så tror jag att jag kommer köra samma val igen, att jag kör plus guld. Enda valet jag kanske skulle tänka på är att jag inte skulle satsa på de här uppgraderingarna för de är dåliga. För att, ah, det känns som att vissa av valen inte är fullt balanserade. Och har man spelat en till tre gånger skulle man kunna se vilka som är värdelösa. Typ farmen skulle jag säga är värdelös eftersom du kan inte ändra om den, den kostar väldigt mycket, och det är billigare att bara köpa fler hus som du kan uppgradera till witches' huts. Eller om du vill satsa och ta masonen, för jag antar att den kan skjuta på saker.

Den kan buffa saker runt sig.

Ah, buffa saker, right.

De val som du fick göra i början, landscape, kingdom och ruler, kände du att dessa val gav dig den upplevelse som du förväntade dig? Och i så fall, vad förväntade du dig?

Eh, inte så mycket. Det var mer liksom, att det- kanske om man kommer in i en annan- för jag tänkte ju först att de hade några form av attributer. Typ att det är unika torn eller nått sånt. Men när man väl har märkt att de inte spelar någon direkt roll så förlorar det lite av sin mening. Det är ju lite svårt att säga nu facit i hand nu, men jag förväntade mig att okej, jag vill ha en skog, bra då väljer vi en skog. Vi väljer det här slottet, och jag vet inte om det ändrar sig visuellt. Jag valde en skog och en borg och jag är en vis man som styr. Men det känns inte riktigt som andra gången jag spelar att det skulle spela allt för stor roll över vad jag skulle välja.

Förväntade du dig att det skulle påverka på något sätt?`

Jag förväntade mig någonting, i alla fall i flavortext, att tornen man har är speciella, eller att fienderna man möter är annorlunda. Så istället för en slime så möter man en desert worm eller nått sånt. Även om de har exakt samma stats att de liksom heter andra saker beroende på vart du är.

Visuell flavor.

Ja.

När du valde i spelets events, var en del val bara tillgängliga på grund av tidigare val. Hade du velat haft möjligheten att se vilka val som hade de förkraven? Eller tänkte du ens på att det fanns förkrav?

Jag märkte inte av att det fanns något förkrav, och jag tycker att det skulle vara liksom, jag tror att om man hade balanserat det runt till exempel det första valet leder till att man bygger på tre olika sätt, då skulle jag nog tycka att då är det bättre att hålla liksom vad de här låser upp ifrån spelarens ögon. Så att det blir mer naturligt att, okej, jag vill ha guldfokuserat.

Då kommer det dyka upp andra events, beroende på det. Det tycker inte jag att man behöver visa. Då tycker jag att det skulle förstöra den narrative upplevelsen och istället gå emot att man ska hitta en optimala pathen.

Du nämnde vid ett tillfälle att du inte ville välja ett val på grund av att du inte ville bränna ner skogen. Tänkta du på att det valet bara fanns för att du valde skogen i början?

Det tänkte jag inte på! För då antar jag att det här valet inte finns ifall jag hade valt öknen.

Helt rätt.

Men, nej, jag tycker fortfarande att det inte är information som behöver sägas. Det borde förmedlas via berättelsen istället.

Participant C – Version S

Kan du berätta för mig vad spelet handlar om, och vad ditt mål i spelet var?

I was defending a mercenary camp in the desert. My goal was to make sure that nothing bad happened to the mercenary camp I suppose.

Och hur gjorde du det?

By placing defenses in front of things that were coming to the mercenary camp. Apparently there were people living there as well.

Hur trovärdigt som ett riktigt towers defense spel tycker du att det här spelet är, baserat på din tidigare erfarenhet av genren?

I mean, this was more well-made than games I've made previously. It wasn't perfect, but it was believable as this is a video game that somebody is trying to pawn off as a tower defense game, yes. **I would believe you if you told me this was something somebody was just, handing out as a tower defense game.**

Kände du att du hade tillräckligt kunskap om spelets system för att göra informerade val?

Other than the fact that I would have loved to have circles over the towers that indicated range, this game did very well on telling me what my choices were.

Så du kände att du förstod resource systemet och hur man spelar?

Yeah. Other than some small errors, like the farm claiming they took food to build, yeah. I mean, there are still points that were objectively wrong from a design standpoint, but yeah.

Kände du att de val du hade tillgängliga i event-rutorna tillät dig göra strategiska val?

Yeah. I got to focus on what kind of resource I valued. Then I guess you could also say I got to role-play a little, yeah. Jag gillade verkligen det här valet med häxorna. Även om det hade gett en inte så bra resurs så hade jag nog valt den ändå. Det här med att man behöver lite magi-skada och att man kommer ihåg att man hade några häxor lite omkringliggandes, du vet, som man har. Så tyckte att det riktigt trevligt sen att jag faktiskt hade en farm som jag kunde göra till en häxhydda.

Skulle du nu i efterhand velat välja något annat val vid något tillfälle?

Nej, jag känner inte någon större ånger för något val jag gjorde.

De val som du fick göra i början, landscape, kingdom och ruler, kände du att dessa val gav dig den upplevelse som du förväntade dig? Och i så fall, vad förväntade du dig?

Jag vet egentligen inte vad jag förväntade mig från dem. Jag tittade egentligen bara på dem och valde vad som föll mig i smaken. Och jag vet inte, jag tyckte att omgivningen var trevlig. Det här med att nomaderna kom för att försvara sina trade routes var ju också rätt så trevligt. Väldigt congruent med vad man hade förväntat sig. Så var det, ja.

Du hade någon bild i huvudet över vad det skulle kunnat varit.

Ja. Det här valen som var specifikt utmarkerade som att de kom från att jag var en mercenary, eller av att jag var i desert var väldigt passande till det och gav inlevelse till och trovärdighet till de här sakerna som hände. Och fick dig att tro att det är saker som händer här istället för att det är text som relaterar till till exempel en gräsplätt någon annanstans.

När du valde i spelets events, var en del val bara tillgängliga på grund av tidigare val. Hade du velat haft möjligheten att inte se vilka val som hade de förkraven? Eller tänkte du ens på att det fanns förkrav?

Det hade nog inte tagit ifrån nånting, om dem inte hade markerat det.

Tror du att det är på grund av att valen de själva visar tydligt varför de är där, eller är det på grund av någon annan anledning?

När nomaderna kommer och försvarar sina trade routes så är det ju rätt så självklart varför de är där. Men i de andra fallen så tror jag inte att det är någon- jag vet inte. Jag kanske valde mercenary valet för att det stod mercenary på det kanske. Men jag tror inte att det gjorde någon skillnad ifall man hade kunnat slippa det.

Så det viktiga för dig är att det var någon som du både mekaniskt och rollspelsmessigt-

Ah, att det passade in till vad jag ville göra i spelet, både i systemet men också enligt den här rollen som jag valde för mig själv.

Hur tror du att det är fördelat när det kommer till hur mycket du värdesätter att välja efter din karaktär, eller det som är mekaniskt bättre?

Jag menar, det rollspelsmessiga slutar ju spela någon roll om det mekaniska upphör. Så jag fokuserar på det mekaniska fram till jag inte behöver fokusera på det mer. Sen så spenderar jag resterande av min fokus på rollspelet. Jag måste ju välja mekaniska val fram till dess att spelet fortsätter. Men så länge jag har ett rollspelsmessigt val som fortsätter spelets gång så känner jag ju att jag måste välja det.

Participant D – Version H

Kan du berätta för mig vad spelet handlar om, och vad ditt mål i spelet var?

Spelet handlar om att en portal har kommit upp av någon anledning och monster kommer ut ur den och attackerar mitt slott och i med det försvarar jag mitt slott från monster.

Och hur gör du det?

Genom att bygga torn, uppgradera torn. Jag använder resurser som man kan få genom att göra val. För att bygga de tornen. Och genom att döda monster.

Hur trovärdigt som ett riktigt towers defense spel tycker du att det här spelet är, baserat på din tidigare erfarenhet av genren?

Det verkar, jag skulle säga, det verkar ganska trovärdigt. Jag tycker det kändes kul att spela, kändes som det hade någonlunda mängd djup på olika val och grejor man kunde göra.

Kände du igen det som ett tower defense spel?

Absolut.

Kände du att du hade tillräckligt kunskap om spelets system för att göra informerade val?

Kanske inte om du inte hade förklarat några grejor för mig. Det var några grejor, som att jag tycker att UI:n är lite udda på ställen. Men när du väl förklarade saker, då funkade det.

Kände du att de val du hade tillgängliga i event-rutorna tillät dig göra strategiska val?

Ärligt talat kändes det inte särskilt svårt att välja. Health känns inte särskilt värdefullt. Eftersom det nästan aldrig kom något fram till mitt slott. Food var inte särskilt – jag hade gott om food. Jag valde inte mycket val som gav mig food. Det var mest guld jag kände att jag ville ha. Jag tog nästan alltid valet som gav mig mest guld.

I slutet så valde du till exempel det valet som gav mest guld.

Ja. Det kändes som det mest värdefulla av de tre valen. **Jag tänkte inte så jättemycket på vad texten sade, utan jag fokuserade på vad jag fick från valen.**

Du fokuserade mer på utkomsten?

Ja. Det var väl egentligen- jag läste texten, men jag gav inte så mycket tanke på det.

Skulle du nu i efterhand velat välja något annat val vid något tillfälle?

Jo, jag skulle valt lite mindre food. Vid det första valen man fick tog jag food istället för guld om jag minns rätt. Kändes som att guld var mer värdefullt.

De val som du fick göra i början, landscape, kingdom och ruler, kände du att dessa val gav dig den upplevelse som du förväntade dig? Och i så fall, vad förväntade du dig?

Så vitt jag kan märka så gjorde de ingen skillnad alls. Men, nej, jag kände inte att de påverkade spelet på något märkbart sätt.

Trodde du att de skulle göra det?

Ja, det tror jag väl. Ja, det gjorde jag.

På vilket sätt tror du? Hade du någon tanke när du gjorde valet om vad de hade kunnat påverka?

Nu har jag inte satt de andra, men jag skulle väl tro att det skulle påverka olika sorters torn, speciellt rulern kände jag, kanske kunde ge olika sorters torn. Jag tror jag tog den som var typ, där man hade massa peasants, typ.

Det gjorde du.

Och den tänke jag skulle ge mig mer sätt att producera resurser, tänkte jag när jag tog det valet. Sen med valet om region, eller vad det nu var, första valet. Den kändes lite mer abstrakt. Vet inte vad det hade kunnat påverka, mer än liksom området. Det här ser ju lite desert liknande ut antar jag så, antar väl att det kan påverka.

När du valde i spelets events, var en del val bara tillgängliga på grund av tidigare val. Hade du velat haft möjligheten att se vilka val som hade de förkraven? Eller tänkte du ens på att det fanns förkrav?

Tror inte jag bryr mig om det, ärligt talat. Tror inte att det hade gjort någon skillnad. Eller kanske? Jag vet inte. Det kanske hade fått mig att tänka lite mer, att känna mig mer glad att jag gjorde vissa val i början. Asså, så som det är nu så känner jag att de val jag gjorde i början inte gjorde någon skillnad alls. Jag hade nästan glömt bort att jag gjorde dem innan du nämnde dem igen. Medans, om det hade var där, att det stod det här valet, liksom, du valde det här! Skulle jag kanske känt att jag hade mer kontroll över vad som händer. Kanske hade känt att jag velat spela igen med andra val. I början.

Participant E – Version S

Kan du berätta för mig vad spelet handlar om, och vad ditt mål i spelet var?

Jag var ju egentligen då magikern som styrde ett folk i ett kingdom ute i skogen. Där det hade spawnat en portal med monster ute i skogen. Och monster var på väg att invadera vårt slott vårt rike. Målet var väl att försvara oss från de här monsterna som försökte invadera helt enkelt. Så skulle jag sammanfattat i alla fall!

Hur försvarade du?

Genom att bygga upp olika torn. I princip. Jag antar att man också rekryterade folk, jag antar att det där witch-huset var att man rekryterade häxor, som från det där tältet attackera lite och så. Så man rekryterade folk och byggde byggnader.

Hur trovärdigt som ett riktigt towers defense spel tycker du att det här spelet är, baserat på din tidigare erfarenhet av genren?

Det kändes väldigt bra faktiskt. Jag är inte van vid att man kan sälja en byggnad för samma värde som man byggde den för. Utöver det så kändes det väldigt bra. Dock är jag inte heller så vanligt att det kommer upp bonusar på samma sätt som det gjorde i det här spelet, utan oftast så kommer det bara våg efter våg men en liten timer emellan.

Gick de här bonusarna emot vad tower defense är för dig, eller tyckte du det blandades bra?

Jag tycker det blandades bra. **Tower defense handlar ju mycket om micro management, att planera mycket i förväg och hitta en optimal strategi. Och de här valen man gjorde mellan varannan våg, kände jag bara gav det mer strategiska val du kan göra för att klara dig längre i princip.**

Kände du att du hade tillräckligt kunskap om spelets system för att göra informerade val?

Ja, det tycker jag definitivt. Till skillnad från de tower defense spel som jag spelat förr så var det väldigt informativt med tanke på att jag både kan ta reda på vilken typ av fiender jag kommer möta samt vilket typ av skada mina torn gör, och vilket typ av fiender som tar extra skada av vad och all sådan information. Mer än jag är van vid att få. Vanligtvis är det information som man får reda på genom att spela spelet och förmodligen då förlora till så man får spela igen för att då komma ihåg vad man måste göra för att göra rätt nästa gång liksom.

Kände du att de val du hade tillgängliga i event-rutorna tillät dig göra strategiska val?

Definitivt. Exempelvis, där när jag hade väldigt få hjärtan eller liv kvar, så valde jag det alternativ som gav mig flest liv. Och jag tror det räddade mig där, för jag tror jag förlorade fler liv rundan därefter jämfört med hur många hjärtan jag hade rundan innan liksom. Så att, definitivt.

Skulle du nu i efterhand velat välja något annat val vid något tillfälle?

Nja, det tror jag inte. Jag antog att vissa val jag hade där endast beroende på vad jag hade valt för rike och landskap i början. Så gick jag mest utefter rewarden var när jag gjorde ett val, snarare än vad texten föreslog att jag gjorde.

Var det något tillfälle där du kände att du ville välja något på grund av texten, men valde bort det på grund av utkomsten?

Ja. Ja, det var det. Nu är jag inte helt hundra på vilket val det var men det var något där jag nog hade velat ta mer, asså, jag hade velat ta ett alternativ för jag tyckte texten passade mer det valet jag hade velat göra om jag levde mig in i storyn. Men när jag kollade på vad jag fick ut ur texten så såg jag något annat alternativ som gav mig mer lockande reward, liksom.

De val som du fick göra i början, landscape, kingdom och ruler, kände du att dessa val gav dig den upplevelse som du förväntade dig? Och i så fall, vad förväntade du dig?

Jag tror jag förväntade mig att fler alternativ skulle vara riktade mot det val jag hade gjort. För om jag tolkade rätt så var det alltid bara ett val som var baserat på de val jag gjorde i början, och två eller tre andra val var riktade andra val man gjorde i början. Men jag tänkte att eftersom jag var en sage och forest, så kanske jag hade fått välja mellan de två någon gång. Alltså att det var fler som var baserade på mina val samtidigt. Det tror jag att jag tänkte skulle hända. Vad var det mer du frågade?

Bara vad annat du förväntade dig när du valde som du gjorde i början.

Nej, det var väl bara det jag nämnde. Jag kom egentligen utan några förtankar om det.

När du valde i spelets events, var en del val bara tillgängliga på grund av tidigare val. Hade du velat haft möjligheten att inte se vilka val som hade de förkraven? Eller tänkte du ens på att det fanns förkrav?

Jag vet inte om jag hade föredragit det ena eller det andra. Men jag tror det hade påverkat mig. Jag vet att första gången jag såg det valet att jag tänkte att det kanske bara dyker upp lite då och då, och att jag borde ta det när det väl dyker upp då. Det var den avgörande faktorn till varför jag tog just den. Sen märkte jag att det dök upp varje gång, och då fokuserade jag mer och mer på den mekaniska, det som jag fick ut av varje alternativ, och lite mindre på vilket som var unikt för mig.

Participant F – Version H

Kan du berätta för mig vad spelet handlar om, och vad ditt mål i spelet var?

Man spelar som en ledare för en grupp människor som försöker försvara sitt samhälle mot invaderade monster genom att bygga torn.

Hur trovärdigt som ett riktigt towers defense spel tycker du att det här spelet är, baserat på din tidigare erfarenhet av genren?

Det är väldigt grundläggande. Men det fungerar.

Ser du det som ett riktigt tower defense spel?

Frågar du ifall jag skulle kategorisera det som ett tower defense spel?

Ja.

Ja, det skulle jag.

Kände du att du hade tillräckligt kunskap om spelets system för att göra informerade val?

Ja, det skulle jag säga. Informationstillgängligheten var mycket hög om man tittar. Sen kanske jag inte utnyttjade det fullt, men all information finns tillgänglig.

Kände du att de val du hade tillgängliga i event-rutorna tillät dig göra strategiska val?

Ja, det skulle jag säga. Vissa mer än andra. Men definitivt påverkade hur jag spelade.

Är det något av valen som står ut för dig?

Till exempel den när det kommer ett magic val som första gången och man kan välja fyrtio guld, vilket är exakt vad det kostar att uppgradera ett house till ett witches' hut. Kändes ganska bra. Sen när jag hade ganska bra koll på läget och man kunde välja bara en hög med guld istället för allt annat kändes ganska bra också. Då kunde jag utnyttja det jag redan hade byggt upp så att säga. Sedan, första valet, att man kan skjuta på att bygga första farmen lite genom att välja food.

Skulle du nu i efterhand velat välja något annat val vid något tillfälle?

Nej, tror inte det. Jag är ganska nöjd med mina val.

Du är även nöjd med de valen du gjorde i början av spelet?

Jag är helt osäker på hur de påverkar.

På tal om det, när du fick göra de valen i början, landscape, kingdom och ruler, kände du att dessa val gav dig den upplevelse som du förväntade dig? Och i så fall, vad förväntade du dig?

Jag hade inga direkta förväntningar. Jag tänkte att det var mer vilket flavor av text man fick och då valde jag- jag försökte göra ett vikinga kungadöme. Och det lignade inte helt upp med min fantasi, men jag hade ju lagt på lite själv också.

Så du trodde att det hade kunnat påverka estetiskt på något sätt, men inte mekaniskt?

Utifrån valen så valde jag ju faktiskt inte riktiga vikingar utan jag gjorde något som lät ungefär som vikingar. Valen är ju separata grejer och kan kombineras med andra. Så det är klart att det inte ska bli- jag vet inte vad jag försöker säga.

Du hade en bild i huvudet över vad du försökte spela som.

Ja, det här tre kombination tänkte jag skulle bli, liksom, i mitt huvud var någonting- jag förstår ju själv att varje grej har sin egen separata grej som i sin tur fungerar, inte i kombination med de andra utan tillsammans så att säga. Man kan inte kombinera tre grejer för att få en unik grej, utan man har tre olika separata val som är unika på sin egna sätt så att säga.

När du valde i spelets events, var en del val bara tillgängliga på grund av tidigare val. Hade du velat haft möjligheten att se vilka val som hade de förkraven? Eller tänkte du ens på att det fanns förkrav?

Jag antog att det skulle påverka valen på nån del. Sen, jag vet inte till vilket utsträckning. Sen kanske hade jag uppskattat att ha en beskrivning i början på vilka val de grejer man väljer fokuserar på. Om du väljer att vara en blunt and powerful warlord så får du mer guld men mindre någonting annat. Att man får en liksom generell idé över vad man väljer.

Du hade velat ha mer information om-

Ja, alltså. En snabb summering över vilket fokus varje val ger. Om det är något som ger mer guld, eller food, eller health än något annat så kanske man hade kunnat, ha nått som beskriver det.

Hade du velat att denna beskrivning fokuserar specifikt på det mekaniska, eller det som påverkar narrativ och flavor?

Om man kan summera dem hade det ju varit optimalt, men man hade ju kunnat ha någon liten text under själva flavortexten med rent konkreta- these choices will give you- eller nått sånt. Om man kan skriva in det som ett narrative så hade det ju varit ännu bättre.

När du gjorde valen i spelet, kände du att du fokusera mer på det som du tyckte var rätt estetiskt, eller mekaniskt?

När jag inte fick ut något från det så valde jag estetiskt. Men varje gång jag kunde välja vad resultatet var så valde jag det som var mekaniskt bäst. Det som var optimalt i situationen.

Participant G – Version S

Kan du berätta för mig vad spelet handlar om, och vad ditt mål i spelet var?

Alltså, rent storymessigt eller mekaniskt?

Båda.

Spelet är ett tower defense spel. Och poängen var att överleva så länge som möjligt mot de femton vågorna som spawnade. Rent storymessigt så var du en härskare över ett land och du försvarar dig mot en invasion av demoner som kommer ut ur en portal.

Och hur försvarar du dig?

Man försvarar sig genom att bygga försvarsverk. För att stoppa invaderarna.

Hur trovärdigt som ett riktigt towers defense spel tycker du att det här spelet är, baserat på din tidigare erfarenhet av genren?

Alltså, det är ju ett tower defense spel i alla definitioner av ordet. Men om man ska jämföra med andra tower defense spel så är det för få torn helt enkelt. Och det är för simpla mekaniker skulle jag säga, men det är definitivt ett tower defense spel.

Kände du att du hade tillräckligt kunskap om spelets system för att göra informerade val?

Ja, det skulle jag säga. Man får rätt tydligt information just om damage, dps, och så liksom att man kan räkna sig fram rätt lätt till vad man vill göra så att säga. Det enda var att det saknades range indikatorer på en del saker, men annars var det bra.

Kände du att de val du hade tillgängliga i event-rutorna tillät dig göra strategiska val?

Ja, det var definitivt strategiska val, även om de är reaktionära. Det var mycket vad behöver jag just nu, inte så mycket vad behöver jag i framtiden. För det som du nog såg så tog jag nästan alltid det som gav mig mest guld. Nittio procent av fallen eller nått sånt. För då är det ju så att ah, jag saknar en tia, en tjuga, då är det ju det som jag behöver för att få det här tornet som jag är ute efter. Då tar jag ju det. Men jag tycker det fortfarande var ett väldigt meningsfullt val. Hade det varit till exempel att jag kände mer press på waven, att jag hade velat ha mer HP så hade det varit ett valid val.

Skulle du nu i efterhand velat välja något annat val vid något tillfälle?

Det var ingenting som jag klicka fel på, som jag hellre hade velat ha just då. För valen vi gjorde var ju som sagt reaktionära, och jag tar ju då det som passar bäst just då. Så jag ångrar då inget val.

Vad skulle du säga om valen du gjorde i början av spelet?

Jag såg ju att det var ett par options för variablerna du satte i början. Och det är ju intressant helt klart. Enda anledningen till varför jag inte valde de specifika valen är ju för att det fanns andra val jag hellre gjorde i det fallet.

Det är faktiskt min nästa fråga, för de val som du fick göra i början, landscape, kingdom och ruler, kände du att dessa val gav dig den upplevelse som du förväntade dig? Och i så fall, vad förväntade du dig?

Jag är inte helt säker på vad jag förväntade mig eftersom jag inte sett interfacen förut, men ja, jag tyckte de spelade bra in i det här valsystemet.

Hade du någon baktanke på just varför du valde som du gjorde i början?

Nej, inte specifikt. Det var inga direkta kopplingar till det här kanske är lättare att försvara, det var inget sånt var det. Det var bara rent vad jag kände just då så att säga. Tyckte det lät fränt med en scheming winter mercenary område liksom.

När du valde i spelets events, var en del val bara tillgängliga på grund av tidigare val. Hade du velat haft möjligheten att inte se vilka val som hade de förkraven? Eller tänkte du ens på att det fanns förkrav?

Jag gillade att man såg varför det var specialevents. Jag gillade det på grund av att jag hade inte reagerat annars på att det var ett environmental-variabeleffekt. Jag hade nog inte registrerat det ens. Så jag uppskattar att det säger att detta är ett specialevent. Om inget annat så ger det replayability när man kör. Då hade man ju undrat vad de andra variablerna ger för effekter.

Participant H – Version H

Kan du berätta för mig vad spelet handlar om, och vad ditt mål i spelet var?

Det handlar om en attackerande force till min stad och målet är att skydda min stad så gott jag kan.

Och hur gör du det?

Jag skyddar min stad genom att bygga defensiva torn, strukturer och uppgradera dem eftersom och göra dem starkare mot fiender som kommer.

Hur trovärdigt som ett riktigt towers defense spel tycker du att det här spelet är, baserat på din tidigare erfarenhet av genren?

Väldigt trovärdig. Det är gjort precis som ett vanligt tower defense spel så att säga. Jag har kört väldigt många, det är säkert en fråga sen, men jag tycker det var exakt vad tower defense brukar vara. Man har någon sorts resource management och torn som kan uppgraderas på något sätt och man brukar kunna se vad som kommer det var nice skillnad för med många olika defense typer för det brukar oftast bara vara två eller tre. Så det var bra.

Kände du att du hade tillräckligt kunskap om spelets system för att göra informerade val?

Ja, efter frågor. Men det hade varit nice om det var mer tydligt i spelet. Typ, här är x, x, här är y, någon sorts tutorial som säger exakt vad jag behövde fråga om. Typ. När jag frågade om saker så var det helt fine, men det hade varit nice att ha någon sorts text som förklarar saker.

Kände du att de val du hade tillgängliga i event-rutorna tillät dig göra strategiska val?

Ja. Det gjorde det, för jag valde ju, de valet jag tog var ju mestadels strategiska utifrån att vinna spelet, och det är ju samma som narrativ för jag vill ju rädda min by, min stad så att säga. Så det blir ju på något sätt samma sak, att försöka maximera och få så mycket resurser som man vill ha, och då väljer man det valet som mig mest resurser av den typen jag är ute efter. Om det makear sense.

Känner du vid något tillfälle att du valde val bara på grund av mekaniska eller narrativ?

Ja. Eller, druiden i slutet var ju lite båda och. Den var ju inte på något sätt, det var ju bara det bästa valet utifrån vad man fick av det, och det var ju inte som att det var nån negativ grej med den. Det är ju druider, så de är ju shjyssta, så det var ju inget negativt med det heller. Det verkade bara som ett positivt. Jag ser inte hur de andra kan vara equal. Annars så tog jag ju bara- om den elden i skogen hade gett mer strategiskt så kanske jag hade tagit den, men nu tog jag den inte på grund av att elda ner skogen kändes som det borde ha rätt stora negativa val senare i att man förlorar massa mat till exempel. Då tog jag scouten så han ändå kunde få information om det som kom, men jag kanske inte gjorde så mycket skada på dem. Men scouten, eller nej jag tog elitsoldaterna. Men han skulle ju ut och försöka döda, så då kanske det skulle komma mindre fiender senare, men de också hade fått information om dem kanske.

Skulle du nu i efterhand velat välja något annat val vid något tillfälle?

Jag tror inte det. Det enda jag trodde skulle ha mest påverkan var typ såhär att man valde det där i början vilken ledare man var och att man spelade efter det. Men det gav ju inget jättenegativt att man var en negativ så att säga. Jag tog ju liksom de taskiga grejorna så att säga. Men det gick ju bra, utan större problem, jag tror jag förlorade bara en fiende, och sen så tog jag den som kom igenom genom att skicka mina mercenaries, men de var bara mercenaries så de borde veta vad de gett sig in på.

De val som du fick göra i början, landscape, kingdom och ruler, kände du att dessa val gav dig den upplevelse som du förväntade dig? Och i så fall, vad förväntade du dig?

Jag tror att jag trodde att de skulle ha mer inverkan. Det kanske de har utan att jag vet det, men jag kände att jag tog the military leader guy, och det kändes inte som att det märkes så mycket. Kanske om jag hade mer aggressiva val där jag kunde skicka ut gubbar. Och jag antar att om man valde att inte ha mercenaries så får man inte det valet att kunna skicka ut senare, för man har ju inte några. **På det sättet så ser man ju skillnad, men jag trodde det skulle vara mer skillnad. Så jag ser ju att det förmodligen var olika val i spelet eftersom jag tog det, men det märkes inte så stort eftersom jag inte kört de andra versionerna.**

När du valde i spelets events, var en del val bara tillgängliga på grund av tidigare val. Hade du velat haft möjligheten att se vilka val som hade de förkraven? Eller tänkte du ens på att det fanns förkrav?

Det hade varit interesting, tror jag. För som du säger nu så är det ju precis så det gör i Divinity till exempel.

Divinity Original Sin?

Ja, precis. Där har man ju en tag till exempel, som du väljer i början av spelet, och sen när du i dialoger sen så har du ju inom parantes innan ett dialogval - mercenary.

Tycker du om att se då, och få lite feedback på, de valen du valde i början?

Jag antar att det är nice, men samtidigt så är det ju att när jag är i spelet sen så är jag ju i spelet. Så då ska jag ju inte heller veta att de valen ska vara där. Jag vet inte riktigt om det är viktigt eller inte. Men i det spelet så är det ju rätt nice, för där är det ju så att ah, jag har det här dialogvalet på grund av att jag valt det här, men jag vet inte om det är något man egentligen vill ha.

Det get väldigt tydligt feedback på att du har valt-

Ja, precis! Det ger väldigt tydligt feedback, men det är inte säkert att man vill ha det. Behövs det?

Dialogvalet kan ju vara skriver på ett sätt som får dig att fatta att det är baserat på ett tidigare val.

Ah, det var ju så lite nu, för jag vet ju liksom, några av de här valet vet jag ju att de har med att göra med att jag tog några val. Men det var ju några som var mindre tydliga som förmodligen var på grund av det men jag kan inte veta det. Och det kom jag att tänka på nu, men den med skogen till exempel den hade jag ju inte fått om jag tagit arctic-stället, antar jag. Skogsbranden och det. Men det var inte tydligt in-game, men man får ju feedback att man tagit saker, för att det finns andra val. Men jag är inte säker på vad jag föredrar to be honest.

Participant I – Version S

Kan du berätta för mig vad spelet handlar om, och vad ditt mål i spelet var?

Asså, jag valde i början att jag var en scheming, lord over the peasants! Så målet i spelet var ju mer att hålla i mitt kingdom genom att skydda det från alla monster. Jag ville ju skydda mitt kungadöme, och jag bad ju om hjälp från något annat ställa vid nått tillfälle som ledde mig i slutet. Jag hade varit fine utan dem, men ändå.

Hur skyddade du ditt kungadöme?

Olika sätt. Jag tog hand om folket genom att tvinga dem att göra saker, jag sa ju till dem att plocka upp stenar och pinnar för att slåss. Men jag såg också till att placera ut mina bästa krigare på rätt ställen. Jag la ju ut archers när det kom flygande saker, och så satte jag upp elemental när det skulle komma light saker.

Hur trovärdigt som ett riktigt towers defense spel tycker du att det här spelet är, baserat på din tidigare erfarenhet av genren?

Det är faktiskt ganska trovärdigt. Det underlättade rätt så rejält att man visste vilken nästa wave skulle ha för element. Bara att veta vad man behöver förbereda underlättar allt.

Men jag tyckte det var ett tower defense- man var ju tvungen att tänka ganska långt framåt för att förstå hur stark en uppgradering var.

Kände du att du hade tillräckligt kunskap om spelets system för att göra informerade val?

Det tyckte jag definitivt. Eftersom man visste vad nästa wave skulle ha, hur mycket HP de hade, vilken typ, och hur snabba de var, tyckte jag att man hade mycket val som- okej jag kan spendera ett extra torn här för den här typen bara för att fixa här, men jag vet ju att om två rundor så kommer magic typ som jag inte har nån defense för så jag måste spara upp pengar för det. Jag tycker definitivt att jag hade det.

Kände du att de val du hade tillgängliga i event-rutorna tillät dig göra strategiska val?

Ja, definitivt. Jag tyckte att vid flera tillfällen att jag behövde få in mer pengar på nått sätt, vilket skyddar mig från nästa runda och monster liksom. Och eftersom man hade den informationen som jag sa innan, så tillåter det dig att göra bättre val- amen nu får jag in extra guld vilket jag kan då antingen spara för att nästa runda vet jag ju att det kommer en typ av monster jag inte är bra förbered på att attackera. Eftersom jag visste att det två sista fighterna var heavy typ fiender så kommer jag ju satsa på att ha pengar till att ha smashing torn. Och så gjorde jag det. Och så kom det upp ett event där jag fick massa- eller jag fick valet att ta en massa guld. Vilket hjälpe hela min kampanj ganska mycket.

Skulle du nu i efterhand velat välja något annat val vid något tillfälle?

Det fanns nog ett tillfälle i början där jag skulle kunna satsa på att ta pengar istället för mat, för att jag kände att farmen var ganska billig att bygga upp, och man kunde få in mer penar tror jag. Jag känner att det nog hade varit ett bättre val i början. Jag kände att det var ganska lugnt i början och hade jag haft lite mer pengar så hade jag kunnat klara den rundan där jag tappade lite liv på.

Känner du att du hade valt något annat i början av spelet, när du väljer en karaktär?

Jag kan säga att jag valde ju nått som jag tycker om att spela i andra spel. Det som beskrivs som en spelstil som jag gillar att spela. Jag hade nog valt samma faktiskt. Om man inte spelar det igen bara för att se andra saker, då kanske jag hade valt annat bara för att se, I don't know. Men om det inte gör någon skillnad så lär jag inte göra det.

De val som du fick göra i början, landscape, kingdom och ruler, kände du att dessa val gav dig den upplevelse som du förväntade dig? Och i så fall, vad förväntade du dig?

Asså, jag valde ju den beskrivningen av person som jag tyckte var intressantast. Både på att kolla på och att spela. **Jag tyckte även att de valen som kom upp i spelet som hade inom brackets, att dem var- den featen så att säga som gjorde det, tyckte jag att jag oftasts valde det valet. Kände att det valet fungerade bäst för mig helt enkelt. På det sättet så känner jag att det var ett bra val. Det kändes ju även som att det påverkade mycket. Jag kände bara, ah, men aja, bara för att jag är en schemer så kan jag göra det här och det här istället vilket är nice.**

På tal om det, när du valde i spelets events, var en del val bara tillgängliga på grund av tidigare val. Hade du velat haft möjligheten att inte se vilka val som hade de förkraven? Eller tänkte du ens på att det fanns förkrav?

På så sätt så tycker jag- jag vet inte. Den gången jag inte fick reda på vad som hände var det ju definitivt svårare. Att bara veta resultatet av valet gjorde det ju lättare att spela igenom spelet. Det kan nog vara intressantare som ledare att inte veta exakt hur folket kommer reagerar på det. Dina befallningar eller vad man ska säga. Det är bra för gameplay, men storywise så försvinner lite av charmen om man gör så. Eller så är det så är det så bra att jag redan vet vad alla valen kommer göra, men alla kanske inte gör det.

Känner du samma sak om där det står, till exempel, inom parantes schemer?

Till viss del, ja. Orden i själva meningen gav ju faktiskt också ganska bra beskrivning på vad som händer. Och känner jag mig som en schemer så tar jag ju det valet som hjälper mig på det viset. Om jag säger typ befolkning gör det här, så kanske jag tänker att min befolkning tänker så här om mig istället. Det kanske har negativa orsaker senare. Då kanske jag förlorar guld om folket inte tycker om mig längre, och sånt. Så på så sätt hade det varit intressant.

Participant J – Version H

Kan du berätta för mig vad spelet handlar om, och vad ditt mål i spelet var?

Det handlar om att skydda mitt slott. Jag var en ruder över en befolkning. Jag var en wizard-typ av ruder över en desert. Målet med spelet var att skydda mig från creatures som jag tror suddenly appeared from a portal? I don't remember.

Det var precis så.

Ah, men va bra. Men jag byggde torn och sånt, för att skydda helt enkelt.

Hur trovärdigt som ett riktigt towers defense spel tycker du att det här spelet är, baserat på din tidigare erfarenhet av genren?

Trovärdigt? Du menar how it matches up mot andra tower defense?

Precis.

Jag tyckte det var bra. Jag gillade damage typerna och att man kunde se dem. För man får ju typ välja hur långt fram man vill göra sin strategi liksom. Du kan ju välja att gå hela vägen fram till våg femton och kolla på alla damage types och planera redan från början. Jag hoppade ju fram fem vågar och planerade efter det. I slutet hoppade jag fram och kollade på den sista. Det var standard uppgraderingsmekanik, inget konstigt där. Jag gillade att man inte fick mat tillbaka när man sålde saker, det var ju lite extra att tänka på. Jag vet inte hur mycket mat jag haft i andra spel, men jag har mest spelat Bloons, där man skjuter balonger.

Kände du att du hade tillräckligt kunskap om spelets system för att göra informerade val?

Ja då, det kände jag. Det enda jag kändes saknades var hur många finders som skulle komma. Men jag fick ju kunskap om hur många bossar som skulle komma där i slutet.

Hade du velat se den informationen?

Nja, inte direkt. Det är inget krav, det ger ju lite unpredictability. **Om du vet all information så kan man ju optimera det på en matematisk nivå. Så länge det finns någon variabel, som till exempel hur många fiender som kommer, då blir det ju unpredictability, och det är ju kul liksom. Plötsligt så slinker det igenom några och då bara shit, då måste man tänka om the fly. Och det är ju roliga spelmoment.**

Kände du att de val du hade tillgängliga i event-rutorna tillät dig göra strategiska val?

Ja, jag vet ju inte vad som hände i den eventen där man inte fick se utkomsten, liksom. Jag såg ju att den hade en effekt på senare val, men jag vet ju inte vad exakt. **Men ja, jag tyckte valen var bra. Det var några jag funderade på. Jag var lite rädd för bossarna. Tänkte, behöver jag verkligen extra HP för bossarna? Nej, jag har tio HP. Jag tror jag behöver guld. För ifall bossarna är för starka så kanske jag får ner en boss och då har jag nog med guld för en uppgradering och då sprängerna jag bossarna. Så ja, jag tyckte det var bra val.**

Skulle du nu i efterhand velat välja något annat val vid något tillfälle?

Jag vet inte. **Jag känner att det inte hade gjort så mycket in-game. Det enda som var skillnad var väl valet i slutet där de trupper som du inte valde kommer och hjälper kanske? I don't know. Kanske att de kommer ändå. Men alltså, eh. Det vet jag inte. I played it safe vid ett av valen med HP istället för guld. Jag hade kunnat välja guld där, för jag tror jag klarade mig igenom enough, så jag hade kunnat spela lite mer risky.** Men jag spelade det safe för jag var osäker på hur stark bossen skulle vara.

De val som du fick göra i början, landscape, kingdom och ruler, kände du att dessa val gav dig den upplevelse som du förväntade dig? Och i så fall, vad förväntade du dig?

Ja, jag ska inte säga att jag förväntade mig så mycket. Jag valde ju land, va? Och då förväntade jag mig probably en aesthetic ändring.

En öken.

Ah, precis. En öken, och det fick jag ju. Ett var ju vilken ruler jag var, och en var vilket people jag hade, followers. Det kände jag inte av, mina types of people. Och jag vet inte riktigt om jag kände igen min ruler heller. Nu valde jag en ganska, typ, standard ruler. **Om jag hade valt han barbarian killen, så hade en del av dialogvalen varit mycket mer aggressiva. Alla val som jag fick var väldigt thought out, och regular. Så I guess, det kan ha med mitt ruler val att göra. Men asså, jag hade ju en nice range of choices. Om jag hade valt barbaren så kanske jag hade fått mindre choice, han kanske bara ville slåss, slåss och slåss liksom.**

När du valde i spelets events, var en del val bara tillgängliga på grund av tidigare val. Hade du velat haft möjligheten att se vilka val som hade de förkraven? Eller tänkte du ens på att det fanns förkrav?

Nej, faktiskt inte. **Jag tänkte inte på att det skulle finnas några förkrav.**

Hade du velat ha det?

Du menar något som indikerar att du får det här valet på grund av att du är en viss sak?

Ja.

Nej, inte riktigt. Det var inget jag saknade.

Tror du att det hade påverkat dig på något sätt, om du faktiskt kunde se vilka val som hade förkrav?

Jag tror inte det? Nej. Jag vet inte, jag tog de valen i början som var ganska ytliga. Banan ser ut som en öken. Du är en magiker som kanske används i några dialog options. Men jag tänkte aldrig på vilken typ av impakt det skulle kunna ha, eller hade på mina val. Så nej, jag tror inte jag hade behöva någonting som sa till mig. Om jag ville spela igen och välja något annat då kanske jag hade legat märke på det. Nu får jag helt klart mer aggressiva val eftersom jag valde barbaren liksom.