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ESCOLA DE COMUNICAÇÃO, ARQUITETURA, ARTES E TECNOLOGIA DA
INFORMAÇÃO

MESTRADO EM DESIGN DE JOGOS E MÉDIAS JOGÁVEIS

AN ILLUSTRATED APPROACH TO GAME DESIGN WITH AN ASTRONOMICAL TWIST

Dissertação apresentada a provas públicas para a obtenção do grau de Mestre em Design de Jogos
e Médias Jogáveis, orientada por Professor Doutor Micael Sousa

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An Illustrated Approach to Game Design with an Astronomical Twist

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Resumo

[PT] A astronomia é um aspecto vital na sociedade moderna, com várias tecnologias utilizadas diariamente terem sido inicialmente desenvolvidas para avançar o campo da astronomia. A astronomia pode ser encontrada como tema em diversos jogos de tabuleiro, mas parece que essa é a extensão em que a astronomia é aplicada nesses jogos. Existem apenas alguns exemplos em que a astronomia é implementada nas mecânicas de jogo e influencia a forma de como o jogo é jogado. Durante a pesquisa sobre vários métodos de design de jogos, foi possível descobrir que o design de jogos tende a métodos com estruturas rígidas, o que acaba por gerar debates sobre a sua aplicabilidade no design de jogos de tabuleiro ou se tais métodos deveriam sequer existir, e que a arte deve ser deixada como a última fase de desenvolvimento. Isto acontece devido às despesas associadas à contratação de ilustradores e à produção de arte, o que leva à questão sobre o que acontece se o designer quiser iniciar o seu processo de design a partir da ilustração e incorporá-la posteriormente no processo de design. Esta dissertação apresenta um método alternativo de design de jogos, em que a ilustração serve como ponto de partida e ajuda a ancorar vários elementos do jogo, como a narrativa, a arte e as mecânicas, para criar uma experiência mais imersiva para os jogadores. Esta abordagem será validado através do desenvolvimento de dois jogos de tabuleiro distintos, onde o método será implementado.

Abstract

[ENG] Astronomy is a vital aspect in modern society, various technologies which are utilised daily were initially developed to advance the astronomical field. Astronomy can be found as a theme for various board games, but it appears that is the extent in which astronomy is applied in these games. There are only a few examples where astronomy is implemented in the game's mechanics and has an impact on how the game is played, this leads to the decision of creating a new board game where astronomy concepts are implemented in the game's mechanics and has an impact on how the game is played. While doing research in various methods to game design it was possible to discover that game design tends to follow certain strict frameworks which end up generating debates about their applicability while designing a board game or if such frameworks should exist, and that the art should be left as a last stage of development. This happens due to the expenses associated with hiring illustrators and producing art, which leads to the question of what happens if the designer wants to start their design process from the illustration and further incorporate it in the design process. This dissertation reports on an alternative method to game design where the illustration serves as the starting point and helps anchor the various elements of the game, such as narrative, art and gameplay, to create a more immersive experience for the players, this will be validated with the development of two distinct board games where this method is implemented.

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Chapter 1 | Introduction

This chapter is organised into four sections. The first section presents the problem that this dissertation is centred around, the second section introduces the objectives for the dissertation, the third section describes the motivation behind the chosen theme, and the fourth and final section explains the structure of the remainder of the dissertation.

1.1 | Problem

Many existing board games that approach astronomy explore it as a theme, narrative or setting for the game itself rather than integrating astronomy into its mechanics. One example of this issue is reflected in a study conducted by Inchingolo et al (2024) where they analysed the top 2000 games in BoardGameGeek¹ (BGG) and came back with a sample of 116 games but only 32 games passed their selection criteria of the science and technology being real. The game mechanics approach astronomy at some level, this being only 1,6% of the total sample.

Only by focusing on the data presented it is possible to conclude that there is a lack of board games that integrate astronomy into the mechanics, meaning that there is a gap that can be filled with new and relevant games that can help promote the learning of science. Games can offer a different approach to learning or even help promote the learning of various scientific topics by offering “a more immersive and interactive learning experience, fostering a sense of playfulness, healthy competition, and achievement” (Othman and Ching, 2024). Even if the games are not designed to be a learning tool, they can still spark further interest in learning more about the specific topic that the game approaches.

From the research of astronomy board games and the proposition of creating an astronomy board game, there was a pivot to researching game design methodologies where the main conclusion was that influential frameworks such as the MDA (Hunicke et al, 2004), the recommendation is always to start from the mechanics and develop the game from there, leaving the art as the final step. These frameworks are originally thought for video games and not for board games. According to Duarte et al. (2015), it is defended that frameworks like this fall apart because board games don't have an automatic feedback system like video games which tells the players if they are playing correctly or not and enforces the rules of the game, “in a [+digital] game, the rule are implemented and enforced by software, which is often umpire and player. In a [-digital] game, the players themselves

¹ BoardGameGeek is a global reference for board games, since it is a comprehensive database where board games can be sorted by designer, theme, mechanics, and among other parameters. This allowed BGG to become a source of information for both scholars and game designers.

must implement the rules and mechanics” (Duart and Battaiola, 2017). In board games at least one of the players needs to read, understand and later teach the rules to the rest of the players but then all the players are tasked with actively implementing the rules during a play session. Besides the issues with the applicability to board games, there are also debates about whether rigid frameworks like the MDA should exist or be utilised (Walk et al., 2017). These various issues lead to attempting to understand what other alternatives exist to designing a game.

Looking at a study conducted by Paul Booth from April to May of 2019 to better understand why people play board games, in the results it is possible to observe that the highest categories were learning the game’s strategy and the table presence, winning the game “is actually relatively unimportant to many games players; but completing the game is important” (Booth, 2021, p.142). Having the table presence rated so highly in a survey and being aware that the visual aspect of the game tends to be the last step in the development stages, raises the question of “What happens if the design process starts from the illustration?”. Starting from illustration isn’t common because “time spent in art on your prototype is most likely wasted, particularly if you don’t plan on self-publishing” (Englestein, 2021, p.43), but there are proven examples that this approach works and the games can have some success. Games like *Sleeping Gods* (Laukat, 2021) or *Scythe* (Stegmaier, 2016) started from the illustration and are currently in the Top 100 board games on BGG, being in the 55th and 17th place respectively.

1.2 | Objectives

The initial objective with the development of this master’s dissertation is to design a board game where astronomy is applied in the gameplay, instead of being only used as a theme, and utilising astronomy concepts in the creation of game mechanics. The game itself doesn’t aim to substitute other learning tools but to serve as an incentive for players to learn more about astronomy.

While researching game design methodologies, a common issue between all of them is the fact that the most well known tend to be strict and rigid. This leads to the second objective of doing further research on game design methods that don’t follow a rigid set of rules or that tend to focus heavily on the mechanic part of the game, leaving the visual aspect as an afterthought. To better understand how the design process of a board game can originate from an illustration or having the illustration play a relevant part in the process, it is necessary to research the topic, by analysing if there are designers that have taken a similar approach, and if the answer is positive attempting to gather their feedback, but also

experimenting with designing a board game starting from the illustration while taking notes throughout the development to later systemise this approach to game design.

The development of a new game also brings a subset of objectives which can be utilised to narrow down what the project is and why it is being created. In this case, a game is being developed to explore astronomy as part of the game's mechanics, but also to test a different approach to game design, starting from the illustration and allowing it to aid the creation of the game system, mechanics and narrative. This board game, to be easily accessible to the players, is designed to be in a Print-and-Play (PnP) format, with the potential of eventually expanding it or creating a physical version. Although the original idea was to design one game, during the development of this dissertation two distinct board games were designed. The first one with the objectives mentioned before and a second game as a coping mechanism for the stress of designing the initial game and conducting research.

1.3 | Motivation

The motivation behind this dissertation and the game to be developed comes from the author's love for astronomy and the feeling that people have a severe lack of interest in astronomy and tend to overlook its practical implications on daily aspects of life.

With the creation of a board game that is readily available to the masses, and that has a low initial investment from the player's side, it can have an impact of wanting to learn more about astronomy rather than succumbing to a superficial fascination with the “pretty lights in the sky”. The motivation for the development of the board game can also be seen as a continuation of the author's work done during the internship at Instituto de Astrofísica e Ciências do Espaço (IA) during the bachelor's degree in digital animation, where a short animation² about constellations was developed with a younger audience in mind.

1.4 | Document Structure

This document is organised into nine different chapters. After this introductory chapter (Chapter 1), each of the following chapters focuses on key elements to continue the development of the dissertation and the project associated with it.

Chapter 2 explores the problem by exposing it and identifying the investigation focus for the dissertation.

² The animation is available through the Instituto de Astrofísica e Ciências do Espaço Youtube channel, or through this link (<https://youtu.be/v87AUs2vEbE?si=iAK87hEZ0v7HtgAR>). The audio in the animation is in Portuguese and subtitles aren't available.

Chapter 3 presents an in-depth state of the art with topics relevant to the dissertation, such as astronomy in board games, game design frameworks, and print-and-play games.

Chapter 4 is focused on the research of board games which the design has started from the illustration or has been heavily influenced by it. Explaining how the interviews were conducted, the main observations and an analysis of the board games.

Chapter 5 focuses on the development of Hydra's Voyage by identifying the project, explaining the origins of the game, and the design approach, exposing the development of the game and reflecting on the design process.

Chapter 6 focuses on the development of Stitch the Stars by identifying the project, explaining the origins of the game, and exposing the development of the game as well as a reflection of the design process.

Chapter 7 is focused on presenting an alternative method to game design where the illustration is the starting point and has an influence on the design process, also providing an analysis of the method.

Chapter 8 is focused on additional work derived from this dissertation, such as presentations about the research, articles or possible workshops to develop a game design approach that has started from the illustration.

Chapter 9 provides a conclusion to the dissertation and exposes possible future work.

Chapter 2 | What is the Problem?

This second chapter is divided into two sections. In the first section, the problem presented in the introduction is exposed in more depth and the second section focuses on identifying the investigation focus for the development of this master's dissertation.

2.1 | A Basic Concept of the Problem

When researching board games that approach astronomy it becomes clear that it is simply utilised as a theme or a setting for the game rather than exploring the potential of implementing various concepts in the gameplay. This conclusion can be reached after researching the BoardGameGeek (BGG) website by families and game categories, it was important to search the BGG database since it “has become a source of information used also by scholars and game designers” (Kritz, Mangeli and Xexéo, 2017). After analysing the listed board games it is also possible to conclude that there is a lack of board games that utilise astronomy in the mechanics.

BGG is a website where users can obtain information about various board games, and has an active community of designers and players. The various games in the website's database are grouped by four different parameters, the first one being “Type”, which refers to what type of game is, for example, if it is a strategy game. The second parameter is “Category”, which situates the game in terms of the general theme, for example, *Sleeping Gods* (Laukat, 2021) is classified as adventure, exploration, fantasy, fighting and nautical. The third one is referent to “Mechanisms”, this classification utilises the various mechanisms present by Geoffrey Engelstein and Isaac Shalev (2020) in the book *Building Blocks of Tabletop Game Design: An Encyclopedia of Mechanisms*, that provides a list and explanation of various elements that help to build the game system. The last parameter that classifies games in the BGG is “Family”, which can group games by something that is common to them, be it the setting, series, publishers, expansions or components. In some games there is an additional parameter “Reimplemented By”, this groups board games that take the same mechanics and implement them again in a new game, an example of this is *Sleeping Gods: Distant Skies* (Laukat, 2023) which has the same gameplay loop and mechanics present in *Sleeping Gods* (Laukat, 2021).

The use of word mechanism has become more prevalent in board games and substituting the word mechanics, even if Englestein and Shalev (2020) mention that those words are interchangeable, “but their preference to adopt game mechanisms as the building blocks that help construct the mechanical game systems is evident” (Sousa et al., 2021). This preference also passed to the board game community after BoardGameGeek (BGG)

abandoned the term mechanics and adopted the concept of mechanisms, which started a shift in the vocabulary to adopt the term mechanisms when talking about board games. There still isn't a unification of the meaning and difference of these terms because "despite the definitions that scholars provided for mechanics or mechanisms, analogue game designers and players created their own vocabulary" (Sousa et al., 2021).

Alongside having an extensive database of board games, it also provides a space to form a community of players and designers with a forum section with various sections dedicated to different topics ranging from "Games in the Classroom" to discussing design theory and sharing various works in progress.

The topic of astronomy in board games is expanded below in this chapter when creating a state of the art and analysing what exists to propose a solution to this problem. The solution ends up being the creation of a board game that approaches astronomy not in a thematic way but in a mechanical aspect of the game.

One of the well-known approaches to game design is the MDA framework (Hunicke et al., 2004). But can a framework like the MDA still hold up when designing a board game? This approach has a debate around its applicability and whether a rigid framework should be utilised at all (Walk et al. 2017) according to a study written by Duarte et al. (2017) the MDA falls apart when applied to board games since the players themselves need to be actively implementing the rules and mechanics when playing a board game. Digital games provide the players with feedback on the actions taken by the players and automatically implement the rules and mechanics, while on the other hand board games do not provide feedback on whether the game is being played currently or not, to understand how to play it the players need to read and interpret the rules.

In a recommended game design process the visual aspect is always left for the end and sometimes can be seen as an afterthought. With this another question arises, is it possible and valid to start the development of a game with the illustration? The proposed board game to be developed aims to take this approach, starting with the illustration and allowing it to shape mechanics and how the game feels to the players while doing documentation on the process.

Further investigation needs to be done in games in which the development started with the illustration, trying to contact game designers who took a similar approach and trying to understand their process might prove useful to see if it is possible to systemize this approach to game design.

2.2 | Investigation Focus

This master's dissertation has two main focuses, first the development of a board game where the mechanics are inspired by astronomical concepts, and secondly the investigation of game design processes that started from the illustration or that have been heavily influenced by it.

With those two main objectives, it is possible to create some questions that allow us to shape the investigation.

1. How can the mechanics present in a board game help explore astronomy while continuing to create an engaging game for the players?
2. Is it possible for the game design process of a board game to start with the illustration, and if so what are the impacts of the illustration on the final game?
3. In a technical aspect, do the roles of designer and illustrator need to be filled by the same person or is there room for collaboration, and in the case of collaboration how would that partnership work?
4. With proven cases of board games where their development has started from the illustration or been heavily influenced by it, is there a way to systemise this approach to game design for other designers being able to implement it in their games?

Chapter 3 | State of the Art

In this chapter, the topics of astronomy, board games approaching astronomy, print-and-play games and various game design frameworks are analysed. This analysis has the objective to obtain a deeper knowledge of these subjects and serve as the groundwork for the remainder of the dissertation and execution of the project.

3.1 | Astronomy

Astronomy sometimes is confused with astrology, since both of their subjects are related to stars, constellations, and planets but that's where the similarities start and end. These two have a history of being confused until modern times when there was a vague distinction between both of them.

In modern times astronomy and astrology have a clear difference between both of them, the main one being astronomy is a science while astrology is not. Astronomy is a science that studies celestial objects, space, and the physical universe as a whole. Astrology makes predictions of future events using the position of various celestial objects, various studies have been conducted that disprove the accuracy of its predictions.

Astronomy has various uses in everyday life, multiple things were originally developed to advance astronomy studies and then later have been adapted to helpful technology. One of the most notorious and commonly utilised astronomy-derived inventions is the wireless local area network (WLAN), which was originally developed in 1977 by John O'Sullivan as a method to sharpen images from a radio telescope. Posteriorly the same method was implemented on radio signals, specifically to those dedicated to strengthening computer networks, which became an integral part of all WLAN implementations (Hamaker et al., 1977). Another notorious and daily used technology that was possible to develop due to astronomy is the GPS (Global Positioning System), in which the satellites rely on various celestial objects such as quasars and distant galaxies to determine accurate positions.

This all shows that astronomy is something important and that it has more implications and uses than just observing the night sky. There is a document written by multiple scientists that proposed a definition of astronomy literacy, which explores the following question "What should citizens of planet Earth know about astronomy?" (Retrê et al., 2019).

Big Ideas in Astronomy: A Proposed Definition of Astronomy Literacy (Retrê et al., 2019), presents eleven big ideas and then further expanded through sub-ideas and additional information. These called big ideas pass by various topics such as how astronomy is one of the oldest sciences in human history, which explores the movements of multiple

celestial bodies to attempt to understand the natural world, how patterns in the stars originated the name of constellations and how they are connected to a cultural aspect and mythology of different civilizations, how these celestial bodies were important for timekeeping, how astronomy proved important for navigation and what exactly is the shape of the Earth since it has been represented in multiple ways throughout the years.

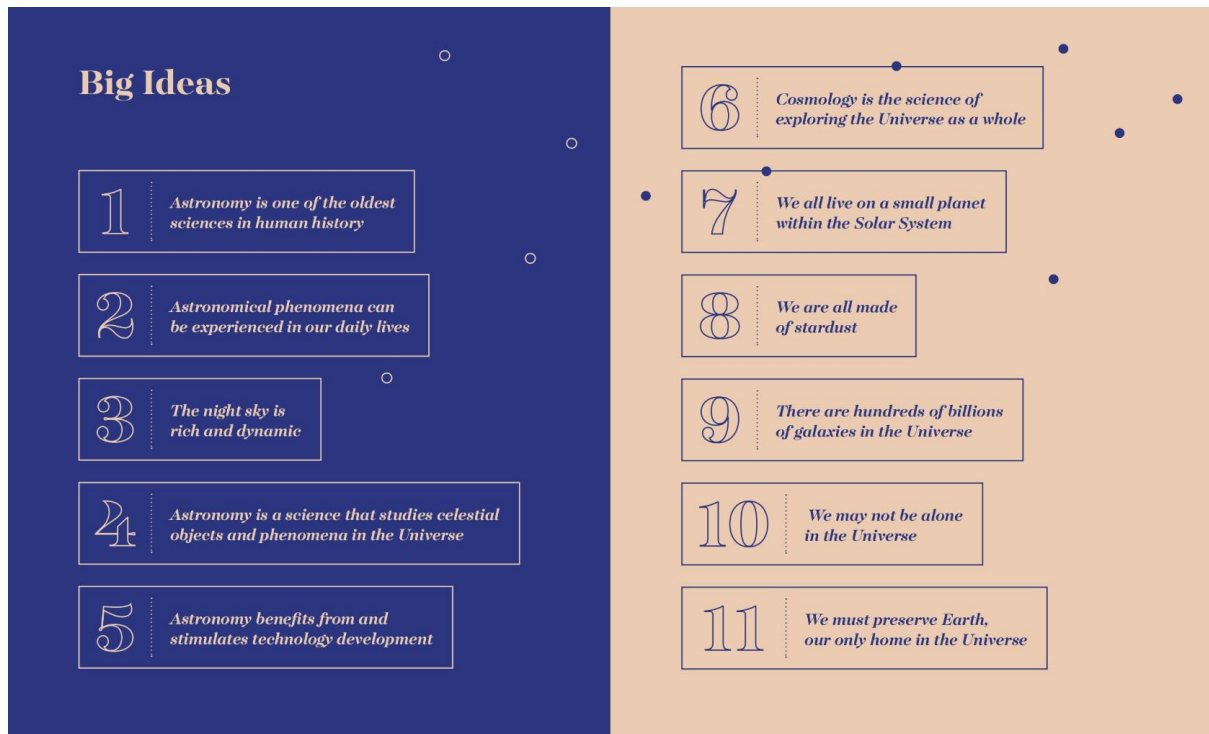


Figure 3.1 - Big Ideas presented in the Big Ideas in Astronomy, A Proposed Definition of Astronomy Literacy (Retrê et al., 2019). Image retrieved from the Big Ideas website.

3.2 | Astronomy in Board Games

An essential part of the topic of this dissertation is to determine if there are existing board games where astronomy is approached and if there are current examples, analyse how astronomy is being applied to the board games.

In order to determine existing board games in which astronomy is approached, thorough research was made on the Board Game Geek (BGG). The research on the website was firstly done by looking for the family of astronomy board games, then going deeper into the website by researching the space exploration category as well as searching for a space family.

The board games found during this research were analysed on various layers. Firstly by reading the synopsis of the game, analysing the mechanisms listed on each of the games pages, followed by reading the rules and when it was possible to play the games.

Not every board game is published on BGG, to have a better grasp on other existing board games that approach board games other platforms have been utilised, such as

Google. When researching existing board games that approach the subject of astronomy, immediately appeared 35 results on the BGG website. A vast majority of these games approach astronomy merely as the theme or setting of the game, astronomy does not necessarily make part of the gameplay aspect.

A common way to approach astronomy is creating a board game where the players are tasked to populate the night sky with stars and constellations. In *The Stars* (Wu, T., 2023), *Starlink* (Slawitscheck, M. & Steinwender, A., 2020) and *Look at the Stars* (Caterdjian, R., 2022).

With a topic as vast as astronomy only finding 35 results it feels too little, upon further research it is possible to find additional results by researching the “Space Exploration” category, which has 1801 board games listed. When searching for the “Space” family in BGG it is possible to discover that the family is subdivided into 13 different topics those being asteroids, comets, Earth’s moon, Earth’s solar system, Jupiter, Mars, Mercury, Neptune, Orion, Pluto, Saturn, Uranus, and Venus, which gives a total of 663 results. This brings the total of 2608 board games listed on BGG that approach astronomy, upon further inspection the result comes down to 524 unique board games except the “Space Exploration” category.

3.3 | Print and Play Games

It is important to explore what are Print and Play (PnP) games in this dissertation, by defining what they are and what are the key differences between “traditional” board games, exploring some examples of PnP games and trying to understand if there are examples where the illustration played an important role in the development.

Print and Play games are, as the name describes, games “where the resources - the board, the counters and other materials - can be downloaded and printed off and the rules are either read online or if preferred, also printed off” (Franklin, n.d), they are also games that are not published in a physical form and these games can, sometimes, require additional non-printable components.

When researching PnP games on BGG it is possible to find a category dedicated to this type of game with a total of 8780 distinct games, and provides a small description of what these games are as explained above. There is a vast array of themes that these games approach, from wargames to running a bakery, to spy games where the players are educated about fascism, to the production of cork, to a vast amount of tabletop role-playing games (TTRPG), and with this amount of themes, there are also multiple mechanisms utilised in this game format. PnP can be easily played by multiple players due to most of the

cost being associated with printing the game, which tends to be cheaper than acquiring a physical board game.

PnP games usually tend to utilise some external components that cannot be printed which can depend on the type of mechanisms utilised in the game, for example, in games where the main mechanism is roll-and-write the external components that are going to be required are a die or a standard deck of playing cards and some writing utensil, for worker placement or resource management might require the players to have a certain number of wooden cubes, meeples or some other small household items.

To better understand PnP games it is necessary to research what currently exists in the market to gain a better understanding of what is currently being designed, learn from them, gain some inspiration for future projects and overall have more knowledge on the subject. The rest of the section is dedicated to exploring and analysing existing PnP games, these games range from simpler to more complex assembly for the players, different mechanisms utilised and the amount of external components required from the players. The games presented in this section come from a personal collection of PnP games, having these games been tested by the author. The selection was made to showcase a selection of different games that require different amounts of preparation work to play the game and different amounts of components, these range from printing a player sheet for each player, to rethemes of popular games where all the elements need to be printed and assembled by the players.

The first two games to be analysed are designed by Isaac Williams during the Covid-19 pandemic, *A Year In...* (2020) and *Kingdom Dice* (2020) which both require minimal printing and other prep work from the players, in addition to the player sheets it is also need a writing utensil and a standard deck of playing cards or a two six-sided dice (D6), respectively.

Both of these games are in essence a roll-and-write game where the players roll dice, look at the result and make their actions based on the result, in *A Year In...* (Williams, 2020) instead of rolling dice a card is drawn from a deck, and both of the games are solo games that can be played with multiple players.

The first game presented in this section is *A Year In...* (Williams, 2020), where the goal is to have the most villagers placed on the map by the time the decks run out of cards. This is a pattern recognition game since to welcome the villagers it is necessary to fulfil a certain pattern based on the placement of the various features in the village, to place these elements is where the drawing of cards enters into action since it is what's going to determine which element is going to be placed and where in the map, the card suit determines the element and the number determines where in the map it can be placed.

In this game there is also a set collection component that allows players to place stores in their villages, for this to happen the players need to collect a set of predefined cards before being able to place the store on the map, for example in order to place the crocodile shop (a C-shaped block) the players need to collect a set of 2, 5, 8 and J.

The game itself is fairly simple to play and the playtime is around 15 minutes, despite being simple it becomes challenging by wanting to have as many villagers as possible. To make each playthrough slightly different, at the beginning of the game the top 10 cards are discarded without looking at them, having this set creates another layer of challenge due to the players not knowing each card has been removed from the deck so there needs to be an adjustment of strategy throughout the game.

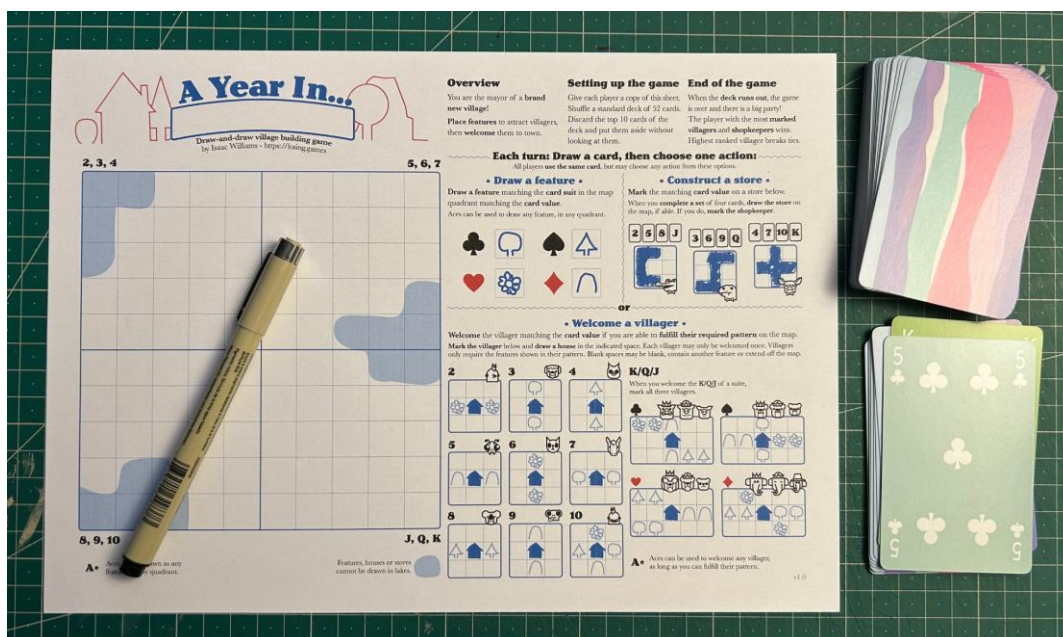


Figure 3.2 - Set up of *A Year in...* (Williams, 2020). Photograph taken by the author.

The second game presented in this section is *Kingdom Dice* (Williams, 2020), the goal is to gain the most victory points before the game ends which is when all the icons in a single border are crossed off. During the game, the players are tasked with managing their two resources, Farms and Mines, with their respective produce, Food and Gems, which players can have up to six of each of these resources. The players start the game with a single farm in a production track, which is the face value of a D6, so a number between one and six, and with two foods which are catalysts to obtain the remainder of the available resources.

As mentioned before, the objective of the game is to gain the most number of victory points, but how do the players do that? Players will roll two D6 to mark attacks in their borders and mark their farm and mine production, after that players are free to take up to two actions from the following, building farms, mines or defences, researching technology or

hiring adventures all of these elements have a different number of points associated with them. The main catch with the attacks is that if a border of the game, there are four different boards with different numbers associated with them, 8, 2 and 10, 6, and finally the fourth with 4 and 12, if at any point of the game one of them have three undefended attacked the player loses one production track and all of the points associated with it.

The game is more challenging than *A Year In...* (Williams, 2020) and offers replayability due to the random nature of the dice and the possibility of trying new strategies to attempt to gain the most points.

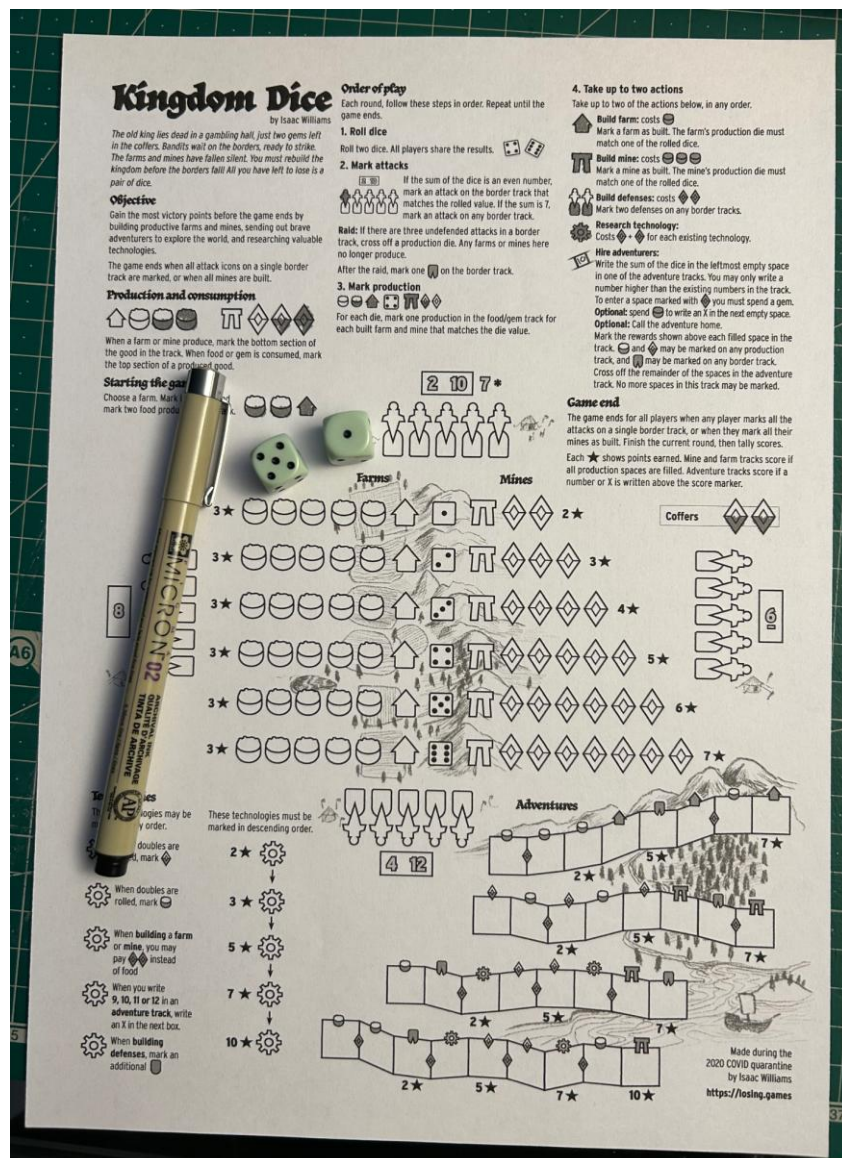


Figure 3.3 - Setup of *Kingdom Dice* (Williams, 2020). Photograph taken by the author.

From a cost perspective, these two games are the cheapest ones from the player's perspective, it takes elements that players already have at home, such as a deck of cards and a couple of dice, and the only printing necessary is a player sheet per player. The two

games, despite being simple, have a layer of strategy, either to think about the placement of the various elements or to think what's the best use of their resources.

From a minimal component perspective role-playing games, either with multiple players in a campaign format or in a solo variant, could also be analysed, by browsing through itch.io, a platform where users can publish their games (both digital or physical), game assets, comics, zines and music but also participate in various game jams, it is possible to find multiple PnP in the TTRPG or Solo RPG genre.

Most of these solo and journaling RPGs require players to have a selection of dice with multiple faces, such as a twenty sided die (D20) for example, or a standard deck of cards, some instead of those more “normal” elements require the players to use a tarot deck or flipping coins. One of the more unique elements found for one of these games was using a rock collection as a core element of the game experience, and tasking the players that don't have a rock collection to go on a walk and bring some rocks to the table. In *A Perfect Rock* (Gralewicz, 2024), these rocks later became planets which the players could explore and random events would happen, causing the players to create a narrative to survive those events.



Figure 3.4 - Various solo and journaling roleplaying games from multiple designers.
Photograph taken by the author.

Another type of PnP games are the ones where all the necessary components to play the game can be printed and assembled by the players, in this genre these are usually card games. An example of this type of game is *Tape Jam* (Fischer, 2024), a puzzle game

where the creation of certain patterns helps the players score higher, the components for the game consist of 36 cards which the players need to print out and cut.

The goal of the game is to be the player with the most points after placing ten cards, or if playing alone the goal is to reach eighteen points. The game is scored by the number of songs that the players have in their ten card display, a song is a set of three cards with the same number or a sequence of three consecutive numbers. Each of these songs has a scoring value of three points, another aspect that can affect the scoring are the pauses which are any unfinished sequence of cards or a single card, in this case, the value in the cards is subtracted from the score. The way of how to place the cards adds a layer of strategy to the game, since new cards can be only placed to the right or to the left of existing cards in the display.



Figure 3.5 - Middle of a game of *Tape Jam* (Fischer, 2024). Photograph taken by the author.

From a cost perspective these games can be more expensive to print up front due to the cost associated with the materials, but have the benefit that once printed these components don't have to be printed again. The bigger the game the more costly is printing it and more time is spent on assembly, this also leads to a brief discussion about re-themes of popular games to fit certain niche themes. An example of this type of PnP is a *Super Mario Bros 3* (Nintendo, 1988) retheme of *Carcassonne* (Wrede, 2000), where the rules of the board game remain the same and the number of components as well, the only change made is on the artwork instead of being set in mediaeval southern France it's set in the Mushroom Kingdom.

Re-themes can be done for multiple reasons, by people who enjoy the gameplay aspect of a certain game but don't appreciate the chosen art, by artists and graphic designers wanting to broaden their portfolio or simply by collectors who want to have as many versions of a certain game as possible.



Figure 3.6 - *Carcassonne* (Wrede, 2000) with a *Super Mario Bros 3* (Nintendo, 1988) re-theme designed by Ricardo Gonzalez. Image retrieved from BGG from Martin Gonzalez "Martin Has Fallen Down the Print-and-Play Rabbit Hole" thread .

After exploring more about PnP games it is possible to draw some interesting conclusions and reflect on the advantages and disadvantages of this game format. The main advantage to this format is the price, since they come at a fraction of the price of traditional board games since the biggest expense to the players is associated with the printing of the game, with this advantage it can allow players to explore different genres with a low cost. The main disadvantage is that it requires the players themselves to assemble the game and depending on the materials utilised for printing can cause it to be less durable, meaning that to keep the game in pristine condition can require additional printing or utilising more expensive materials.

3.4 | Game Design Frameworks

Games are artefacts created by designers to be enjoyed by players, even though in this dissertation the main topic is specifically board games there is a necessity to study

widely known game design frameworks before exploring or attempting to propose an alternative approach to game design.

One of the most well-known game design frameworks, and the first one that students learn while studying game design, is the Mechanics-Dynamics-Aesthetics (MDA) Framework created by Hunicke, LeBlanc and Zubek in 2004. This framework transcribes the player's perception of the game to equivalents for the designer, meaning that rules, systems and "fun" are equivalent to mechanics, dynamics and aesthetics (Hunicke et al., 2004). To better understand it is essential to have a grasp on what each of those terms means.

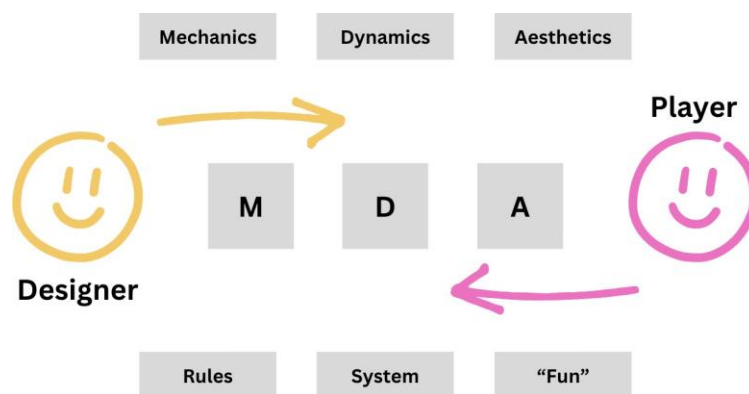


Figure 3.7 - Visual explanation of the MDA Framework (Hunicke et al., 2004). Graph created by the author.

Mechanics, for example, is something that various people have tried to define and come to a consensus. The original article where the MDA framework was presented, describes mechanics as the various components of the game in a level of data representation and algorithms, meaning that the mechanics are dictating how the game is going to be played. Later in 2008 Järvinen expanded on the definition provided by Hunicke et al. and described mechanics as verbs, meaning that they serve the purpose of guiding the players to have certain behaviours to accomplish their goals. Dynamics are in essence how the players interact with the mechanics, putting it simply, the game system with the various gameplay loops, and finally the aesthetics refer to an emotional response in the players while interacting with the game system.

Even though the MDA framework is a well-known framework, it provides an extremely rigid structure, which raises the question if game design processes should be so strict, and restraining and if it is applicable when designing board games.

This doubt raises the question of how a framework like the MDA holds up when designing a board game, since it was originally thought for video games. The debate started in 2015 on a website formerly known as Gamasutra, currently known as Game Developer, with an article written by Luiz Claudio Silveira Duarte called "Revisiting the MDA framework",

where he mentions that board games are dependent on at least one player learning the rules making that player tasked with the additional responsibility of teaching the rules. Despite needing to learn and interpret the rules of the game to truly understand them, players are also tasked to actively implement them throughout the play session, this is something that does not happen in video games, since on the latter “players can learn to play on the fly; but boardgames do not have this leisure” (Duarte, 2015). This doesn’t mean that board games are inferior to their digital counterparts, but that when designing them there needs to be an adaptation to popular frameworks to properly work without harsh restrictions.

Duarte ends the article by saying that the MDA framework can still be utilised when designing board games, but not in the way that it was originally presented which leads to a new proposal for understanding the MDA framework. This proposal puts the player or designer in the middle, meaning that it becomes a user-centred approach where all the elements are related to each other, creating a more dynamic model which has room to allow user participation in the design process.

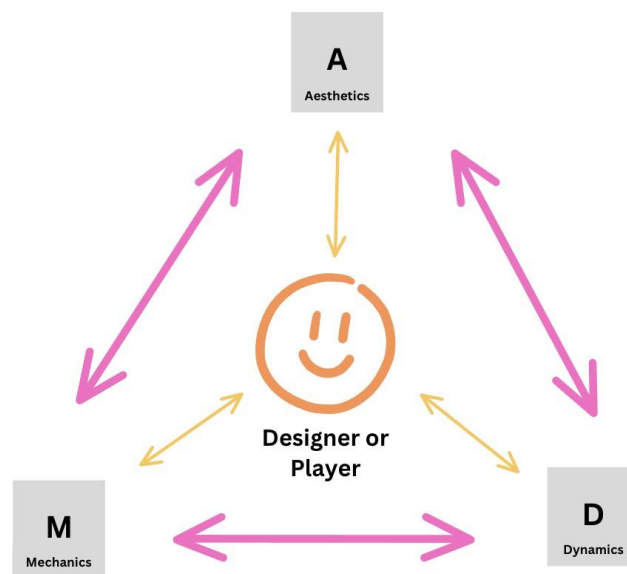


Figure 3.8 - Visual explanation of the revised MDA framework (Duarte, 2015). Graph created by the author.

Four years after the presentation of the MDA framework Jesse Schell presented a game design framework, the Elemental Tetrad (Schell, 2008). In this framework games are described as an experience, to create an experience some elements are more visible to the player than the others, but are still connected and influence each other. The four elements that Schell declared necessary to create an experience are Technology, Mechanics, Story and Aesthetics. In terms of hierarchy, the most visible is the aesthetics while the technology

is the less visible, and the mechanics and story share the same level of visibility in the middle.

In this framework, aesthetics holds the same meaning as the definition presented in the MDA meaning that it is referent to the emotional response that the players have when interacting with the game but with the addition of the appearance of the game. Ideally, the aesthetics influence the rest of the elements but also receive influence from the other elements. Mechanics remain the same as previously discussed, they are what makes the game a game, story is referent to the whole narrative setting of the experience. Technology, despite being less visible to the players, holds importance in the described framework, it is what makes the game work, and it limits what can be done in the other elements.

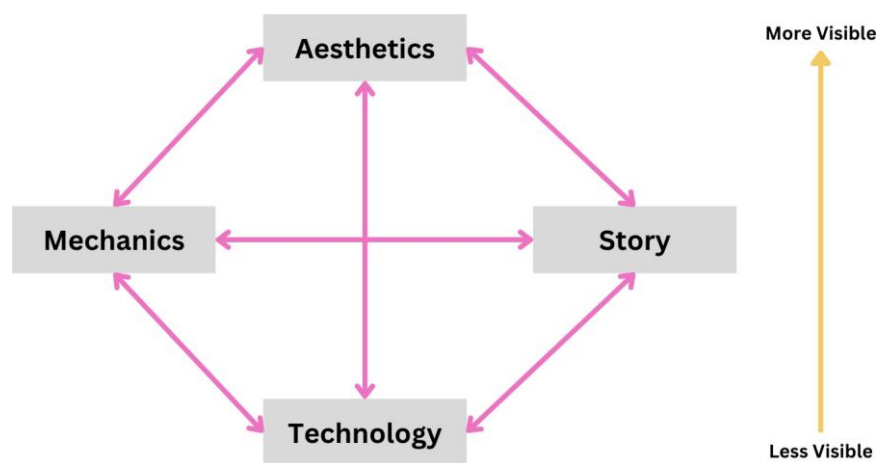


Figure 3.9 - Visual representation of the Elemental Tetrad (Schell, 2008). Graph created by the author.

Although these game design frameworks are widely known and applied, do they still properly work when applied to designing board games? Do the designers benefit from having such rigid frameworks? These questions leave room to explore, analyse and start a discussion on different game design approaches and how valid they are.

The way to design a game sometimes starts to become something personal to each designer, some prefer to start from the mechanics and build the game from there, and some prefer to start thinking about mechanisms that are going to be present in the game and build the rest from there, others prefer to explore the theme first, and there are designers that prefer starting with the narrative and then create a game that enhances that narrative.

Talking about mechanisms and mechanics, there are a few differences in the definition of those terms, even if Englestein and Shalev stated that those terms can be used interchangeably (Englestein and Shalev, 2020), when the topic is board games there is a preference for the use of mechanisms. This preference comes from mechanisms being something exclusive to analogue games, mechanisms can be compared to building blocks

(Englestein and Shalev, 2020), this concept has been presented in their book “Building Blocks of Tabletop Design: An Encyclopedia of Mechanism”, these building blocks then later help with the creation of various mechanics and game systems. Having these various mechanisms helps to group various board games into various families that all utilise the same ones, this division based on mechanisms can be observed on the BGG database, due to one of their categories being based on the mechanisms utilised in the games. This also provides a different layer of analysis on how different games are utilising those same mechanisms in distinct games.

This dissertation will focus on game design processes that started from illustration or that have been heavily influenced by the illustration and how that process originated a board game.

Chapter 4 | Starting to Design a Game by Illustration

This chapter focuses on one of the main topics of this dissertation, the investigation of board games that have started from the illustration or have been heavily influenced by it. To maintain this chapter more readable it has been divided into four different sections.

The first section is dedicated to exploring the subject that is going to be researched, and explaining how the research is going to be conducted.

The second section is dedicated to presenting and reflecting upon conducted interviews with selected designers.

The third section analyses some existing board game that have been designed starting with the illustration, following a range of games where the designer and the illustrator are the same person to ones in which those two roles are fulfilled by distinct people.

The fourth section exposes the results of the investigation, accounting for both the analysis of the various board games and the conducted interviews, and to answer the question on what comes next in regards to the investigation but also what to do with the obtained results.

4.1 | What is being researched?

There are multiple ways to approach game design, some approaches are more viable than others thus being more known and accepted by the gaming community. One of the game design processes that has been on the lesser side regarding exploration but has massive potential is starting the design with the illustration.

When thinking about starting to design a game, for this investigation we are talking about board games since video games have vastly different pipelines and the number of teams responsible for the games is completely different, the main questions that arise are the following:

1. Do board games where their design process has started from the illustration or that has been heavily influenced by it exist?
2. Does the designer also need to be an illustrator for this approach to work?
3. How valid is this design approach when it comes to board games?
4. How does starting from the illustration impact the final product?

Having these questions it became easier to formulate a plan to conduct the investigation since one of the plans for this dissertation is to create a board game that has started from the illustration, which natural first step is to research what has already been done to better understand how the designs were achieved.

The first step in this research is trying to understand if there are board games where the design process started from the illustration or that have been heavily influenced by it. This influence can be for example, the creation of the game narrative, a drastic theme change due the illustration, or coming to a solution for the mechanics utilising the illustration. To find these designers, the first step was to look at the BGG website and identify which board games had the designer and illustrator listed as the same person and attempt to contact them, initially via BGG messaging or through an alternative method of contact, such as email. Some game designers were identified by creating a discussion in the BGG forums with the objective of asking the community of players and designers if they were aware of other board games that might have started from the illustration or where the illustration had an important role during the development, some of the designers were contacted after being suggested by a participant of the research, and others were contacted after reading post mortems of their games where their design method was described.

In the early stages of the research, there were already two designers in mind who already have utilised this approach to game design. Ryan Laukat, due to be listed as both designer and illustrator of his published games, and Jamey Stegmaier, due to being very vocal about the development of *Scythe* (Stegmaier, 2016), which confirmed the hypothesis that there are board games where the development has started from the illustration or where the design has been influenced by the illustration.

With this confirmation, it becomes obvious that this is a topic worth doing further research on, leaving with the necessity to create a method for the remainder of the research. Firstly, it is necessary to do further research on how board games have been designed to find other examples of this phenomenon, and secondly, attempt to get in contact with the various designers that have designed games by starting from the illustration.

The analysis of the board games is fundamental to pinpoint the differences between games that the design either started or has been influenced by the illustration and games that the design follows a traditional framework, as well as analysing the game from a player's perspective. The analysis of the board games was done in two stages. The first analysis was done from a player's perspective without the knowledge how the illustration might have impacted the design of the game, this was done while waiting for the reply of the contacted designers. The second analysis happened after interviewing the designers about their opinions and how the illustration is incorporated in their design process, this allowed the observation of how the illustration changed or enhanced the game.

The interaction with the various designers provides valuable insight into their design processes and their opinions of various practical aspects of starting the design process from the illustration and how its influence can aid the creation of the game. Interviews are the most effective way to obtain that information. The designers were contacted and asked to

participate in this study, it is important to maintain structure across all the interviews, which means it is necessary to create a methodology for these contacts and analysis of the various games.

The main resource to collect information throughout this investigation are interviews with various designers that have designed at least one board game starting from the illustration. Interviewing as a data collection allows the participants to “try to express their feelings, opinions, and ideas” (Lune & Berg, 2017, p.105). After having decided on the data collection method it was essential to define a methodology to conduct these contacts and further understand how illustration can influence game design method. This methodology can be divided into the following steps.

1. Assess existing designers’ design processes which have started from the illustration or have been influenced by the illustration. One of the best ways to obtain information about various board games, is to utilise the BoardGameGeek (BGG) website due to the possibility of connecting with a community of both designers and players, the information obtained through this method has to be checked that the information is correct.
2. Create a questionnaire/interview script to maintain structure between all the replies and be objective throughout this process. The questions such as what is their design process or their opinion on starting the game design from the illustration, are relevant to ask the designers.
3. Have a designated space to gather the information in a central place which can be easily organised and accessed. With all of the gathered information, it is necessary to reflect to better grasp the similarities and differences between the design processes of the various designers.
4. When possible analyse the physical versions of the board games from the designers, who were contacted, to draw pertinent conclusions for the research.

Collecting data is one of the steps while conducting research, but this data will eventually need to be analysed to conclude the research topic. It is pertinent to define the method used for analysing the collected data, due to the nature of the research, one method that would fit best is following the logic of grounded theory. Grounded theory is in essence the generation of a theory based on data that has been systematically collected and analysed (Strauss, 1994), the main features of this method are that the data and the analysis are happening at the same time, and the data can be grouped, in this case similar replies from the various designers are grouped to create a foundation for the theory.

In this case, the data gathered from the contact of the designers was initially divided by interview in a Google Doc, meaning that each interview had its section where the entirety

could be read. While analysing the various replies there was a change in the organisation of the data to make it easier to draw conclusions on the various topics, at this stage the replies were sorted by questions and grouped based on their content, meaning that similar content was sorted together. This allowed us to create an analysis of the data and posteriorly a method based on the replies from the designers.

4.2 | Interview with Designers

Getting in contact with various designers was an essential step in this research to collect their thoughts, and opinions about starting designing a game from the illustration and allowing it to influence its development.

To maintain consistency between all the inquiries between all contacted designers it was essential to define which topics should be discussed, why they would be relevant to the research, formulate various questions that would allow to reach those objectives and then reflect upon the various replies.

Ideally from these various contacts, it would be possible to determine the design process of various game designers and how the illustration is being utilised during said process, gather various opinions about the advantages and disadvantages of incorporating illustration in the game design, understand the uses of artificial intelligence (AI) to generate images to be used, if this approach to game design could be used by someone that isn't an illustrator, also asking these designers if they have the knowledge of others that might have a similar approach to design, and allowing them to make comments to the research being developed.

With these objectives in mind, it became easier to create a set of six questions to better understand if the process of starting the design from the illustration is intentional, if it is something that they always follow or if it is something occasional, and if there are more game designers that follow the same approach. Each of the questions was thought to help obtain desired information for this research, the set of questions is as follows.

1. Could you describe your game design process in a summarised way?
2. When designing a board game, is the illustration only the starting point to inspire the narrative or does it also play an active role when coming up with mechanics and defining certain gameplay aspects?
3. Do you see any flaws in starting the design from an illustration and further incorporating it into the design process?
4. What is your opinion on the validity of starting the design from the illustration? Does the designer need to be an illustrator, or is it enough to have an illustrator who is equally excited by the project for it to work? This then leads

to a follow-up question, if the designer doesn't have the funds to hire an illustrator, can this approach still be valid if the designer utilises stick figure drawings or AI to generate certain images to serve as the starting point?

5. Do you know more designers that have a similar creative process, where the design might have started from illustration?
6. Do you wish to comment or share more information regarding the purposes of our research?

Having the question determined was an initial step to advance the research, now the task at hand was to find the designers to contact. As mentioned before there were already two designers in mind who could, possibly, provide valuable feedback to this research, these two designers are Ryan Laukat and Jamey Stegmaier, both of them have proved that it is possible to develop a board game starting from the illustration. From there it was possible to dedicate more time to researching other designers who might have taken this approach, to further research the topic BoardGameGeek (BGG) forums served as a place that allows players, board game enthusiasts and designers to connect. Taking advantage of this platform, it was possible to create a forum entry to ask the BGG community if they knew other board games that might have originated from the illustration or that had been influenced by it, which led to some results that later were confirmed and if the information has proven to be true, the designers responsible for the games were contacted.

Using these methods along with further researching about the origins of various board games and then analysing board games where the designer and illustrator were listed as the same person, allowed to gather the replies of five willing participants out of the various contacts made, but only four of the obtained replies added value to the research.

Before starting to look at the various replies and start formulating conclusions about the research it is necessary to define what methodology is going to be utilised for the data analysis. Due to the typology of the research, it was better to take a grounded theory approach to the analysis of the data to then later formulate a theory with a foundation on the collected data. The collected data from the interviews is going to be presented by creating a discussion based on one of the questions with some citations of the obtained replies from the designers, the integral version of the obtained replies can be read in Appendix 1 to 4 of this master's dissertation.

The first question asked to the designers was for them to briefly explain their design process, with or without the inclusion of illustration, this allowed to understand how game design processes can become something personal to each individual while still maintaining some similarities with others. Manny Vega mentioned that he likes to "write down some wacky ideas, with very brief descriptions (...) then I usually forget about it for a long time" and that those ideas serve as an archive of ideas that he can later pick something from and start

designing. Something similar happens with Ryan Laukat's process where he admits that he "often find myself thinking about games and game mechanics. When I have an idea I write down a few notes in my phone or notebook. If I have more time, sometimes I sketch out what the game might look like set up on a table", here it is possible to start seeing that the illustration can start having an impact on the early stages of the design process. One interesting aspect of Laukat's design process is that he often takes a "moment to paint the cover (game box art) (...) because it acts as an anchor for the whole project. I know what I'm shooting for and having that box illustration guides me when creating the story of the game, the general look, the mechanics, and the graphic design".

Just from these two designers, it is clear that illustration plays different roles in the design process, but still serves as an anchor for the theme of the board game. One interesting approach to designing a game was one shared by Frederik Jensen, "when I looked at the map of Gotland divided into settings and regions, I immediately recognised that this would be playable as a boardgame", the action of observing an illustrated map allowed him to centre the design Gotlandia (Jensen, 2024) and create a game with deck building, worker placement and area control while maintaining the historical context of Gotland in the 1100-1400 period. Jamey Stegmaier tends to add an illustrator a bit further in the design process, only after having a functional and fun game, which normally results after "brainstorm the idea (mixing theme and mechanisms), create the initial prototype, playtest it locally and/or solo, then process the results, iterate, and repeat. If the game shows promise, repeat the playtest/process/iterate steps".

Wanting to better understand the synergy between illustration and board game development, it was essential to better understand how the illustration is being used while designing a board game, if it is just being used as the starting point to inspire the narrative or if it also plays an active role when coming up with mechanics and defining certain gameplay aspects of the game. Here the replies were almost unanimous amongst all, the illustration served as a starting point narrative-wise and also influenced a gameplay aspect of the game. Stegmaier shared some insight on how the illustration affected some of his published games "For Scythe, the art led me to making the game more about the threat of combat than actual combat. For Charterstone, the worldbuilding led to several significant mechanisms that otherwise would not have been in the game. And for an upcoming game, the artists had a lot of freedom in creating an entire planet, and aspects of their illustrations became fundamental elements of the design". With this question it was possible to notice the illustrator roots that Laukat has stated that "I rarely design games around mechanics. I almost always start with a narrative situation and a piece of art. When I'm designing, I'm usually shooting for a certain feel. The feel of the game helps me decide which mechanics to use", the only record that was possible to find of a game he started from the mechanics is

Klondike Rush (Laukat, 2017) which he talked about during the 2018 Tabletop Network, in a keynote presentation entitled “Designing with a Story Focus”. This ended up being his least favourite game to design, he also mentions that he regrets starting the design process with the mechanics rather than with the narrative. Laukat leaving the theme and narrative for the end leaves the question of who the player gets to be during the game, which leads to what he considers an issue of having a game with mechanics that can be applied to any theme but has the trade-off of always having a poor narrative in the game. Vega for this question commented that his design style leans heavily into theme and narrative due to being what he enjoys creating but also playing, “sometimes I have an idea and the illustrations come from a style guide I write up for the artist, and other times I am working to make the gameplay fit the narrative as much as possible”. Jensen replied to the questions with a heavy focus on his latest game Gotlandia (Jensen, 2024), where in this case the illustration served only as the starting point for the game, “the map of divisions of Gotland into administrative regions was a starting point”, although that these divisions changed overtime with the development of the game, “even if the game is historically inspired, it must be playable. I’m taking liberties with the source material to get a better gaming experience”.

So far there are various positives about starting the design process from the illustration, but what can be the disadvantages of this approach to game design? That was the main reason for asking the designers what they perceived as flaws of starting from an illustration and further incorporating it into the design process. From a designer and illustrator's point of view, Laukat provided a well-rounded reply, “one of the biggest issues with designing this way is that it can be easy to get emotionally attached to something that isn’t working. In game design (and many other crafted art forms), it’s a vital skill to be able to cut things that aren’t working (...) sometimes I hold onto illustrations or illustration styles for too long”, the main takeaway from here is that it is easy to get attached to work that has been done and trying to hold onto to it, so it isn’t perceived as a waste of time. This is a perspective that was also shared by Stegmaier, “the biggest risk in letting illustrations impact the design is that it can loop back around the other way: the design may then require a lot of revisions to the art, which can be expensive, time-consuming, and frustrating for the artist”, which was also something that Vega mentioned when he says that “the artist has to be 100% on board and willing to participate. If it becomes too personal and there isn’t room to shift the theme or design, then things can fall apart”.

Having this amount of negative can be discouraging to gathering more intel on an alternative game design method or continuing the research due to there already being a preconceived amount of flaws that already exist. An essential step to research is understanding what are the identified flaws, allowing us to understand what could possibly be improved.

After identifying how designers utilise illustration in their design process and identifying possible flaws, it was time to understand if this approach could work when the designer and illustrator are different people and discuss the use of artificial intelligence (AI) to generate images.

Regarding the usage of AI, there was a consensus in the sample, that this is distasteful and disrespectful for artists and that there are better human-made alternatives that can serve as a starting point for the designs and that can eventually lead to a collaboration between designer and illustrator. Stegmaier said “for a designer who wants to build their design based on some visual elements, I recommend looking at places like ArtStation for inspiration from the many amazing human-created illustrations there”, Vega suggests talking with an artist beforehand to see if they are interested in a collaboration with shared royalties, “if it’s just a job for them, you probably won’t get the kind of commitment and collaboration that I feel makes a thematic game shine. You can of course still get AMAZING artwork this way, but there is a noticeable difference”. He also expands more on the topic of AI by saying “I just find the technology to be distasteful and disrespectful to creators. Until it becomes something that does not need to steal in order to function, I wouldn’t touch it”. With this it remains the question of the designer and illustrator need to be the same person for this approach to be successful, with the data until now it becomes clear that it is not a necessity but being the same person might lead to some issues that were discussed above, such as Vega said “if the designer is also the illustrator, they run the risk of being too close to their “baby” and not seeing that some things you think are the main focus, are just a distraction for observers”. Stegmaier provided valuable feedback in this matter by also providing a publisher point of view by affirming that “game design and illustrative art are two completely separate skill sets - it’s very rare for the same person to be equally talented in both”, and from a publishers point of view, “if a game designer is self-publishing or submitting to a publisher (for the later, it is the publisher who is responsible for the art, not the designer)”.

The knowledge gained from these answers from the various designers was fundamental to better understanding an alternative method to game design, in this case, one that has started from the illustration or where the illustration has a role during the development of a board game. Designers were asked if they were aware of more designers that have a similar creative process, and although most replied negatively Laukat provided an interesting comparison “so many tabletop designers work like book authors; they work alone and without lots of funding or a team of people to collaborate with”, while Vega provided some additional names, such as Henry Audubon, the designer of Parks (Audubon, 2019) and Trails (Adubon, 2021) and “share a similar idea that having something visually

stunning can lead to wonderful game designs”, who was contacted but never replied to the contact.

At the end they were also invited to share additional information or share any thoughts about the conducted research, Laukat said that “this is a valuable subject to research and that many game designers could benefit from it” and Vega commented on the success of *Flamecraft* (Vega, 2022) and that “this kind of collaboration is how I like to work, especially with talented people who are as invested as me”.

Analysing all the obtained data it is possible to understand that there is an alternative method to game design where illustration is incorporated and that it can achieve games that have success, where the finished product feels connected between all the elements (narrative, gameplay and visuals). Even with this feedback, analysing existing board games could be beneficial to the research.

4.3 | Analysis of Existing Games

Looking at the various board games that have started from the illustration and that have been influenced by it can provide valuable insight to this research, by pinpointing differences between games that started from the illustration and others that follow a traditional design approach, and having a brief analysis of the board game from a player’s perspective.

When possible, the observation of the physical version of the game can be essential to better understand the influences that the illustration had on the board games, but also to analyse how that influence passed to the design of the various components. Most of the games analysed were available to the author, either by personal collection or by having access to the collection of other board gamers, when that wasn’t available BGG was utilised to gather images from the games.

The first games to be analysed were designed by Ryan Laukat, in specific the *Sleeping Gods* series, constituted by *Sleeping Gods* (Laukat, 2021), *Sleeping Gods: Primeval Peril* (Laukat, 2023) and *Sleeping Gods: Distant Skies* (Laukat, 2023). The three boxes have stunning illustrations that transport the players immediately into the universe of the game, and set the narrative of the game, for example, just by looking at the boxes it is clear that *Sleeping Gods* (Laukat, 2021) the narrative takes place in a steamboat where the players need to explore an island and defeat monsters, or in this case, gods, *Sleeping Gods: Primeval Peril* (Laukat, 2023) the narrative is set in a jungle, and finally, *Sleeping Gods: Distant Skies* (Laukat, 2023) the narrative is set in a plane where players can explore a mountainous world and eventually battle with a winged creature.



Figure 4.1 - Box art of the various games in the *Sleeping Gods* series. From left to right: *Sleeping Gods* (Laukat, 2021), *Sleeping Gods: Primeval Peril* (Laukat, 2023), and *Sleeping Gods: Distant Skies* (Laukat, 2023). Images retrieved from BGG.

Upon opening the box, it is possible to observe that the inside of the box is also illustrated with the scenery of each world. Observing the insides of the boxes then raises the question of whether other games that have started from the illustration also have the inside of the box illustrated as well, or if this is a unique case. This prompted to observe the other games from the research participants, unfortunately, none had an illustration inside, the closest that a board game came was *Flamecraft* (Vega, 2022) where the insert to organise the various components had character illustrations.



Figure 4.2 - Inside the box of various boardgames. From left to right: *Sleeping Gods: Distant Skies* (Laukat, 2023) and *Flamecraft* (Vega, 2022). Photograph taken by the author.

The curiosity of wanting to know if that was something common in board games, to also have the inside of the box illustrated, or if the case with Laukat's games was the exception, this also sparked a discussion that it might not be as common due being an added production cost that might not be justified. To uncover more about this hypothesis, various games were opened and analysed with the hopes of finding another illustrated box. It was possible to find another example, which was *Pax Pamir: Second Edition* (Wehrle, 2019), where the inside of the box was illustrated, the illustrations helps to further immerse the players in the narrative of the game. In this game, the players take the role of Afghan leaders in the nineteenth century attempting to create a new state after the collapse of the Durrani Empire, and the illustration inside the box helps to set the mood for the game and anchor the players to the theme due the representation of various soldiers in a mountainous path.



Figure 4.3 - Inside of the box of *Pax Pamir: Second Edition* (Wehrle, 2019). Image retrieved from Board Game Geek website in the game page, photograph taken by the user Doctor Meeple (@SergiNS).

In both of these circumstances the designer and artist are the same person, this leads to the conviction that in board games where the designer is also the artist there is a tendency of having more thought on the presentation, either that being the exterior box art but also having the possibility of having the inside also illustrated.

On the topic of setting the players in the narrative and world of the game, *Scythe* (Stegmaier, 2016) and its following expansions, also does a great job with the art in the box and with the rest of the unboxing experience. From the beginning it is clear that the game has a setting that is both familiar and unfamiliar, a sense of familiarity due the scene

represented with various people working in wheat fields in eastern europe but unfamiliar because of the armoured mechs and various armies in the background. The theme becomes more solidified with the use of minifigure for each faction, each one with distinct features to their area and skills, and with the rest of the game components. Everything is working to immerse the players in the game.

What became *Flamecraft* (Vega, 2022) started as being an engine builder set in a ship, since for it to properly work there is a need of a team, but Vega after seeing the dragon illustrations by Sandara Tang, changed the concept of the game to be revolve around dragons work in various stores to better the village. This information can be found in an interview conducted by Alex Meehan for the Dicebreaker website in December of 2022. The art is one of the main elements that draws the players to the game, quoting the designer “The idea was to kill players with cuteness” (Meehan, 2022). The art in the game plays a major role on hooking the players in the game, provides a distraction for players to analyse the various illustrations in-between turns, and also provides further immersion in the world with the intricate illustrations.

An interesting element from *Sleeping Gods: Distant Skies* (Laukat, 2023) is the short comic book that allows the players to start playing the game without having to read the entire rulebook. The comic teaches the basics of the game while also grounding the players in the game world and the narrative.

4.4 | Research Results

Reading the various replies from the designer, it was clear that the design of a board game could start from the illustration and the illustration could be further incorporated in the design process. Designing this way can have an impact on the finished product by having a game where all the elements (narrative, art and gameplay) are more connected to each other since it gives the same foundation for all of those elements.

While analysing the replies and how each of the contacted designers apply illustration in their design process, it is possible to create a schematic of a method to game design which can be followed when designing a new board game to validate the method. Laukat starts by creating the illustration for the box and then thinks about a narrative for the game based on it before thinking about the mechanics for the game, for Stegmaier, the illustrations help define the type of game that he is designing. Taking those answers into consideration to start systemising the incorporation of illustration in the design process, it is possible to create a method that starts by getting an illustration to serve as the anchor for the project and serve as the foundation for the narrative, type of game and try to understand if it can have an impact on the mechanics.

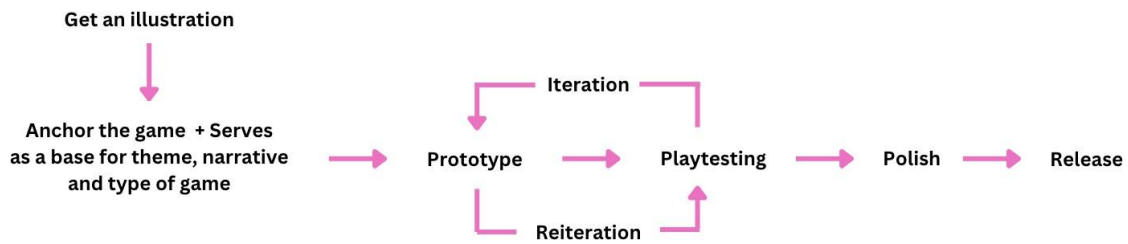


Figure 4.4 - Initial flow of a method where the design starts from the illustration. Graph created by the author.

This method is going to be implemented while designing *Hydra's Voyage*, a PnP where the players need to rely on constellations to navigate the unknown seas. The development of the game will be documented and reflected upon, both to validate this alternative method to game design and evolve it. The following chapters are dedicated to the development of *Hydra's Voyage* and an analysis of the discussed method.

Chapter 5 | Hydra's Voyage

This chapter is divided into five sections. The first section identifies the project that's being developed, this is divided into four subsections, each exploring a different relevant topic. Starting with the integration with the masters' objectives, how it differentiates from the currently available games, and how the design is going to be accomplished.

The second section explores the early stages of development of the project, this section has three subdivisions. These subdivisions explore in-depth how the illustration originated a board game, which astronomy concepts are being implemented in the game, and what is the design foundation for the development of the game.

The third section exposes the development process of *Hydra's Voyage*, this is divided into five different subsections where each one explores relevant topics such as the game design method implemented throughout the development, the narrative setting, the creation of the first and subsequent prototypes until reaching a final product.

The fourth section is dedicated to exposing the playtesting of the game and the reaction of the players.

The fifth, and final section, presents a conclusion to the development of *Hydra's Voyage*, accompanied by reflections on the experience of starting the game design process from the illustration, the obtained results and relating a personal experience with the replies received from the multiple contacted designers.

5.1 | Identifying the Project

The project to be developed alongside this dissertation is a Print-and-Play (PnP) game where the mechanics incorporate key aspects from various astronomy concepts. Another particularity of how the game is designed is that the design process starts from the illustration, and has an active part while designing the game.

The decision to create a game in a PnP format comes from wanting the game to be more easily accessible to players by cutting their initial monetary investment to try out the game, which can be a point that stops players from acquiring new board games. The components present in the game can either be printed and assembled or simple objects that players might already have at home or can be "borrowed" from other board games.

Hydra's Voyage is set in a world that is familiar to Earth but with a small difference, the sea levels have risen dramatically and too fast for humanity to find an effective way to adapt to this new reality. The available technology either has been destroyed or become obsolete, making people dependent on the night sky while moving around. On board a small

vessel, Hydra, the goal is clear: find dry land before the year ends and create a settlement to attempt to live on land once again.

5.1.1 | Integration With the Master's Program

The masters' in Game Design and Playful Media has a strong practical component and encourages the students to develop multiple games and explore various approaches to game design.

The presented project meets the objectives of the masters' since it combines a strong theoretical component with the research of board game design that has started from the illustration or that has been strongly influenced by it, with a practical component where the knowledge is applied to the development of a board game that goes against the conventional way to approach game design.

5.1.2 | Objectives With the Creation of the Game

The main objectives with the creation of this game are to have a game where astronomy is applied to the mechanics and explore an alternative way to approach game design, in this case, starting the design process from the illustration.

Applying astronomy to the mechanics and having an impact on the gameplay, is a strategy to encourage people to learn more about astronomy and to understand that astronomy has various useful applications in their daily life.

To make the game more accessible to multiple people the game will be in a print-and-play format, due to the initial investment in the game being lower for the players. This does not eliminate the possibility that in the future a physical version of the game can be created with higher quality and various physical components.

5.1.3 | How is different

This board game distinguishes itself from the existing games that approach astronomy by being a PnP game with minimal physical components and by incorporating astronomy concepts in the gameplay instead of utilising astronomy solely as a theme. Another distinguishing factor of it is how the game was designed, in this case starting with the illustration and allowing it to have a relevant role throughout the design process.

5.1.4 | How to Accomplish the Design

As previously mentioned there are two main design challenges for designing *Hydra's Voyage* are to incorporate astronomy concepts in the game's mechanics and start the design process from the illustration as well as allowing it to have an impact during the rest of the

development process. To accomplish these two requirements, it is necessary to have a vision of how to tackle this different approach to game design, how problems that arise throughout the production are going to be solved, and remember to not lose focus on what the final product is supposed to be.

A rough plan to accomplish this mission was sketched out to help keep on track throughout the project. Firstly it is necessary to get an illustration that serves as the starting point of the design process, and write down all the ideas that the illustration brings, both narrative and mechanical wise. Based on the illustration and notes taken, choose astronomy concepts that can fit and enhance the narrative of the game. With all of that information creating a prototype, test and reiteration until the game starts to feel interesting, fun, polished which, hopefully, sparks some interest in astronomy. From that stage, it is time to start prepping the game for release by polishing the art and having final rounds of playtest.

The following sections are dedicated to exploring the development of the project, along with all the lessons and challenges that were faced during the development of the game.

5.2 | The Beginning of *Hydra's Voyage*

This section is dedicated to exploring the beginning stages of the development of *Hydra's Voyage*, with all of its challenges and solutions utilised. This serves to report on the various development stages in a technical way but also provides some personal reflection on those challenges.

5.2.1 | Getting the Illustration and its impact

The first step to kick off the development of *Hydra's Voyage* was to source an illustration to base the remainder of the game. The chosen illustration was one created by the author after visiting downtown Lisbon during a rainy day in early February.



Figure 5.1 - "Overwatered" illustrated by the author in February 2024

The inspiration for the illustration came after seeing the rain pour down the city of Lisbon and imagining how the landscape would change if the city became overflowing with water, even with the illustration representing a surrealistic scenery it still managed to raise some concern about what could happen if the water levels keep rising.

That concern is what led to the addition of a small sailboat in the illustration, which led to thinking about "What if... one day we have to live confined in boats?". This aspect of the illustration was essential for the narrative development and creation of the game world for *Hydra Voyage*.

Sourcing the illustration was the initial step in the game design process. The second step was to write some notes on the various aspects that the illustration reminded and what could eventually be utilised in the game. This helped narrow down what astronomy concepts would fit the illustration and which could create an engaging gameplay, all of that work allowed to focus exclusively on creating the game.

This illustration defined the visual style for the released version of *Hydra's Voyage*, saving some time in the visual iteration at the end of the design process. Narrative-wise there is a small crew, with one to three members, living in a small sailboat attempting to survive through the year while looking for dryland.

5.2.2 | So... How is Astronomy being applied?

The main astronomy concepts applied in this game are celestial navigation focused on how to find north in the northern hemisphere with the aid of various constellations, how the night sky changes throughout the year with the Earth's translation around the sun, and how to recognise various constellations.

These astronomy topics were chosen with the aid of the illustration, due to what would enhance the narrative and what would provide a more engaging experience for the players. Having these concepts chosen were essential to start narrowing down what mechanics might look like and the various mechanisms that a game is going to need to have an interesting gameplay experience.

It is important to mention that the goal with incorporating astronomy in the game is not to reach an educational game in which the players are taught astronomy, but to have a game in which the players are enticed to learn more after playing the game.

As mentioned in the beginning of this subsection, one of the main astronomy topics approached is celestial navigation, but what exactly is this and how does it work? Before the existence of Global Positioning System (GPS) people navigated around the globe but instead of relying on technology they relayed on various celestial objects. This type of navigation later inspired the development of the technology used in the current days.

With the various constellations visible in the night sky it is possible to determine where the north is in the Northern Hemisphere and the south in the Southern Hemisphere. For this game the focus was on the Northern Hemisphere. During the day it is also possible to determine certain cardinal directions based on the movement of the sun, it always rises in the east and sets in the west. The moon also has a similar movement, but unlike the sun it has a more noticeable positional change due the rate that the moon moves around the Earth. During the night there is a star in the Northern Hemisphere that points to north, this star is called Polaris and is also known as the Northern Star. It is easy to locate this star with the aid of two constellations, Ursa Minor and Ursa Major.

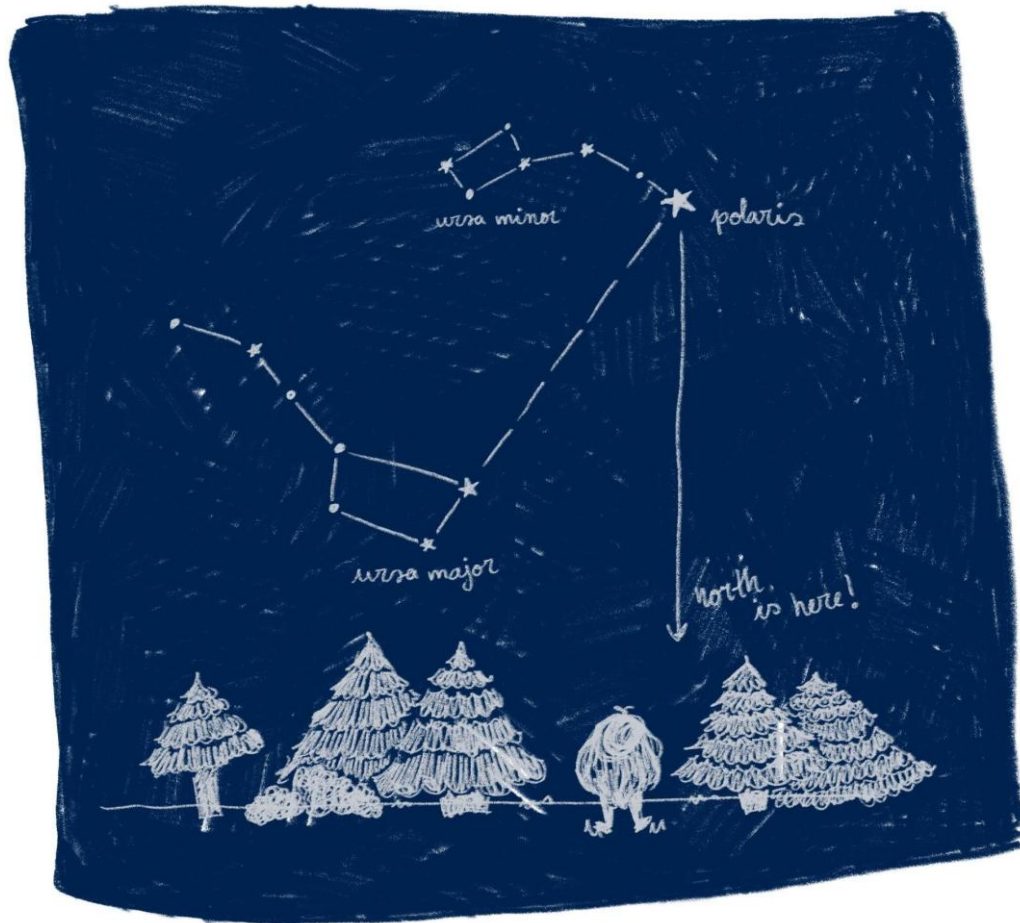


Figure 5.2 - Visual representation on how to find Polaris with the aid of the constellations Ursa Minor and Ursa Major. Illustration by the author.

In the game this astronomy concept is being utilised as the core for movement, it creates the rules on how they move through the various maps present in their player sheet, but also becomes essential in certain events where the players are forced to move in a determined direction.

Alongside the implementation of the celestial navigation it was also essential to add to the game the changes that the night sky has throughout the year due the Earth's translation around the sun and a component of constellation recognition, which compliments the initial topic. Throughout the year the night sky changes, some constellations become visible while others appear to disappear from the sky. This happens due the Earth's movement around the sun, translation, which gives us the various seasons, and the rotation around its own axis, which gives us the day and night cycle. With all this change there are some constellations that remain visible throughout the whole year such as Ursa Major, Ursa Minor, and Cassiopeia, to name a few, these are called circumpolar constellations, meaning that they rotate around the northern star, Polaris.

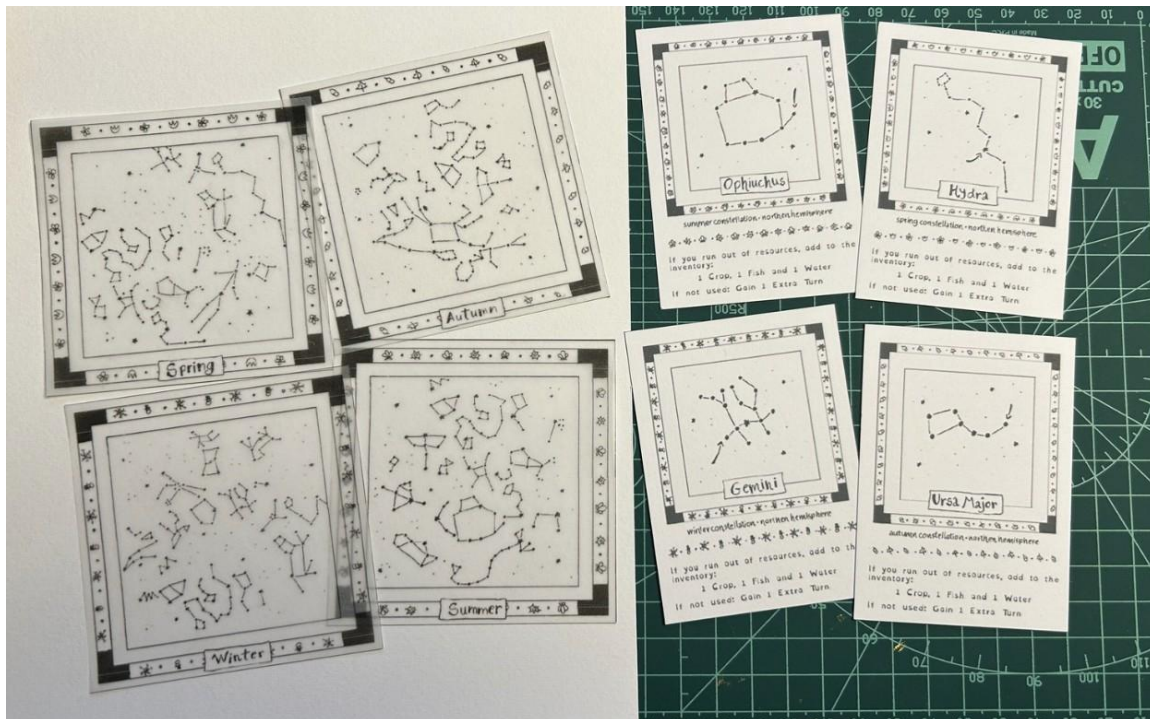


Figure 5.3 - Implementation of the above mentioned astronomy concepts in the game. Changes on the night sky throughout the year in the “Sky Cards” and constellation identification on the “Season Objective Cards”. Photograph taken by the author.

In *Hydra's Voyage* these astronomy elements are implemented in division of the player sheet, by creating four divisions to explore the four different seasons of the year, which all have an additional representation of the night sky with the various constellations, and on the objective cards utilised through the game, which were designed to help with the recognition of various constellations.

5.2.3 | Foundation for the Design

After having sourced the illustration, chosen the various astronomy elements that were going to be present in the game, and having both the narrative and setting for the game, it is finally time to start designing the game. An essential step for the development of *Hydra's Voyage* was to create a list of general guidelines that can answer the question “What is the game?”, these guidelines can also be called design pillars and act as a foundation for all the design decisions of the game.

For this game the list was as follows.

1. The illustration is not an afterthought but is involved in the design process.
2. Astronomy as a mechanic and/or relevant to the gameplay
3. Keep the game accessible to the masses
4. Generate an interest in learning more about astronomy

These pillars can be further explained to provide further clarification on each topic. The first one is referent to the illustration being involved in the design process even if it goes against the recommended way of developing a game, since the norm is to first design the game and then produce all the visual material, the idea of starting with the visual side is for it to influence the design and help achieving different solutions to the problems that might appear throughout the design process. The second one “Astronomy as a mechanic and/or relevant to the gameplay” is a reminder to keep the majority of the mechanics present in the game based on various astronomy concepts, to keep it relevant in the gameplay and not to be just treated as a thematic setting for the game. The third pillar is referent to the format of the game, that ideally would be one that allows multiple players to try it out without having a big monetary investment, which means that all the components for the game can either be printed or are simple objects that the majority of players might already have or that can be borrowed by already owned board games, such as dice, pawns and small cubes. The last pillar, “Generate an interest in learning more about astronomy”, is a reminder of the goal of *Hydra’s Voyage*, where the objective is not to teach astronomy but to be a tool that helps generate interest in learning more about astronomy.

5.3 | The Development of Hydra’s Voyage

This section is dedicated to exposing all the development stages of *Hydra’s Voyage*, as well exposing the various challenges and solutions that were utilised. This serves to create a report on the development of the project, while maintaining a formal approach to the writing.

This section itself is subdivided into various relevant thematic subsections, such as the first one where the narrative and game world is exposed, the second subsection where the development of the first prototype is explained and all the flaws are analysed. The third subsection is dedicated to exposing and reflecting on the development of the following prototypes, while the fourth and final subsection is dedicated to analysing the current version of the project.

5.3.1 | Design Methodology

To document and design *Hydra’s Voyage* it was important to maintain a method so the information is collected the same way, following a structure of research, implement, playtest and then finally listening to final feedback of the players.

The research step that was conducted earlier by contacting various game designers, who have created at least one game starting from the illustration or where the development has been heavily influenced by it, allowed the creation of a rough method based on the

collected data. The method being implemented is the one presented at the end of “Chapter 4 - Starting to Design a Game by Illustration”, the process starts from sourcing an illustration to serve as the starting point for the design process, followed by anchoring the game in terms of theme, narrative and type game. The third step is where the prototype creation starts and goes into a loop of playtesting and iteration until gameplay feels good to be polished and eventually released.

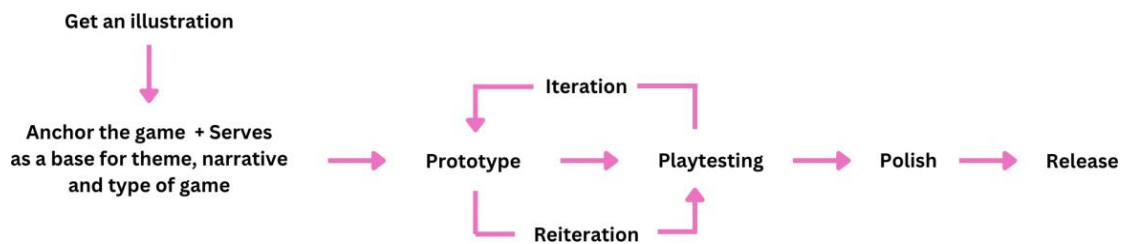


Figure 5.4 - Design method being used during the development of *Hydra's Voyage*. Graph created by the author.

Playtesting is an essential step while designing a game, it allows to observe which elements of the game are working as intended, identifying design issues, how the players are interacting with the various game elements and obtaining feedback from the players. During the development of the game it is necessary to conduct various playtesting sessions at each new prototype iteration, these sessions can range from self-testing, creating a dedicated group of playtesters that are present throughout the whole development of the game, until eventually leading the playtesting sessions with real players. During these various playtesting sessions it is imperative that notes are taken about the behaviour of the players while playing the game, after the game being played asking the players for direct feedback on the game and if there were any particular elements that are stopping the game from being enjoyable.

5.3.2 | Narrative World and Thematic Setting

While observing the illustration, *Overwatered*, a narrative is exposed which leads to the creation of the game narrative and game world. A world similar to Earth but with a key difference that the sea levels have risen so dramatically causing humans to find a new way to survive, some have made the decision to search for higher ground while others decided to set off and live on boats while trying to become self-sustainable.

Hydra is a small wooden sailboat that has the capacity to host a crew of three members, has a dedicated space to grow their own crops, filter the sea water and then save the water for later consumption. This system has worked for one year already, but with the passing of time the sailboat has become more unstable requiring multiple repairs which

haven't happened due to it being impossible to dock the boat in a safe location. With these conditions it is estimated that if there is a cut on the amount of supplies that are on board, the boat will last one additional year, which hopefully will be enough to find dryland that allows to repair the boat and leave the sailing life behind.

Life at sea isn't always smooth sailing, with the rising of the water levels it left many uncharted territories that only the bravest or desperate dare to adventure into since it is impossible to know what is their state without sailing through them. Throughout the year there are multiple challenges that torment the small crew, either it is strong winds that disrupt previous sailing plans, heatwaves that force the crew to utilise more water or cold seasons where the crew has to eat more to maintain a safe body temperature.

With all of the changes that happened the crew knows that they can always rely on the night sky to guide them in their adventures. There are some rumours running around that sailing in the direction of certain constellations will lead to the dryland that the crew onboard Hydra is looking for.

5.3.3 | Creation of the First Prototype

The first prototype serves as a proof of concept of the idea, it serves as a foundation for the rest of the design work. This first prototype served to validate ideas and have a better understanding on what needs to be reworked in order to make the best version of the game possible.

While analysing the illustration it became clear the game would have a navigation component to it, this became the theme of *Hydra's Voyage*, which was later reinforced with the introduction of celestial navigation and game objectives. While thinking about components and the limitations of the chosen game format, the main initial challenge was to think about how the movement is going to work, what are the necessary components to create this proof of concept and what are the win conditions of the game.

The initial idea was to contain the maximum amount of information in a single A4 piece of paper this way the players would have their own player sheet, which was divided into four different maps and a resource management section, with three different resources. Besides this player sheet there would also exist a physical turn tracker, a deck of direction cards and the "Sky Cards".

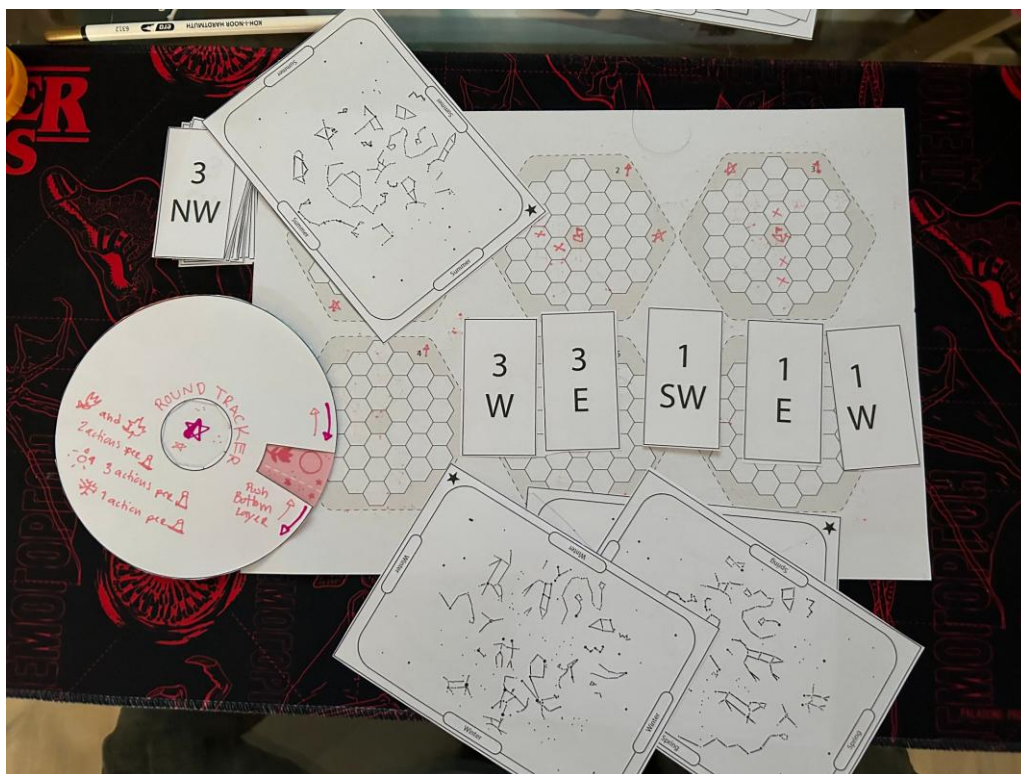


Figure 5.5 - Initial prototype of *Hydra's Voyage* after being playtested. Photograph taken by the author.

This prototype was focused on testing the movement and everything that goes into it, meaning the various seasonal maps, the amount of turns that the players have for each season, the use of the “Sky Cards” and how the path of the player is being determined.

The downfall of the prototype started with the creation of hexagonal maps and allowing movement in eight different directions, this turned the movement impossible and caused frustration in the player. Besides this major flaw on the design of the map, the way in which the path taken by the players was unsustainable since there was too much randomness and contradiction.

It was essential to give the players some variety and challenge throughout their playthrough, this was achieved by having four distinct maps and a corresponding “Sky Cards” for each of the seasons, spring, summer, autumn and winter. In order for the players to move in the individual maps they were initially tasked into finding north in the “Sky Cards”, match the symbol orientation on both the card and the map to have the correct orientation for that seasonal map. The players at the beginning of the game would draw 5 “Path Cards” from the deck to create their own path, these cards consisted in a number from 1 to 3 and a cardinal direction, an example of this is 3N, meaning that in order to complete that movement the players would need to move three spaces north.

Another element present in this prototype is a circular turn tracker that has movable parts, from an assembly perspective this was a disaster since it was giving players additional work in something that didn't add value to the game. The turn tracker served only one

purpose, telling the players how many turns are in the game and when to change maps and “Sky Card”, the number of turns was determined based on the main moon phases, new moon, first quarter, full moon and third quarter, one full moon cycle per season.

With all of these components and rules the players were able to start playing, which was a disastrous experience, there were various aspects that needed to be fixed but that the overall premise for the game seemed interesting enough to invest time into polishing. The key issues that would need to be fixed in following versions was fixing the map format, the tiles in the map need to be a different shape since having hexagons and movement in eight different directions is not possible, the tiles would need to change into square and then decide if diagonal movement is allowed or if it is necessary to limit the movement to only orthogonal. Still in regards the maps, in future versions they would need to have more tiles in their composition, even with short lengths the current maps turned to be small. The “Sky Cards” need to be simplified due to being too cluttered and need clear instructions on how to use them. The “Path Cards” as they are need to be redesigned, since the cards are randomly drawn from the deck it would cause problematic situations where one card would tell the players to go into a direction and the following card would tell the player to go in the opposite direction, making the whole movement feel redundant, since players would be backtracking their movement.

Determined to create a game that would be interesting, the long process of iteration and reiteration started, which will be exposed in the next subsection.

5.3.4 | Iteration and reiteration

Hydra’s Voyage went through eleven prototypes until reaching a product that could be published. The first section of prototyping was discussed in the subsection above, this is going to be dedicated to exposing and reflecting about how a disastrous prototype turned into an interesting and playable game. In order to make this subsection more readable, the various stages of development are discussed by prototype version, starting with the second version of the prototype.

With the second version of the prototype the main objective was to better define how the movement would work, this is also where the idea of giving players various resources to manage started but hasn’t been implemented yet.

While talking about movement it is also necessary to determine how the objective of the game is presented to them, is it going to be a predetermined path in which the players change season after an amount of turns or each season is going to have an objective, those were relevant questions that needed to be answered rather sooner than later. The experiment of both types of objective/path cards was done with this prototype, this element

became something that removed all the agency that the player could have during the game, essentially the player was only following orders, this lack of agency needed to be fixed in the following iteration. Having the objective cards divided into four segments became easier at the end of the game for the players to confirm if the movements are correct, at least in terms of direction, and removes the need of a turn tracker but guarantees that all of the “Seasonal Maps” are going to be utilised. On the other hand, having all the necessary movements listed on a single card allows players to manage their movements throughout the game and being able to play through various seasons without the need to use them all since the change of season would happen every four turns.

At this phase it was decided to follow through with the complete list format to test with the integration of resource management and a useful turn tracker implemented in the “Player Sheets”. One thing that clearly needed to be changed were the “Sky Cards” since it wasn’t clear which direction north would be and there was too much visual clutter. The solution to this problem was to create divisions in the “Sky Cards” in order to be diagonally divided into four quadrants and remove unnecessary elements from the cards.

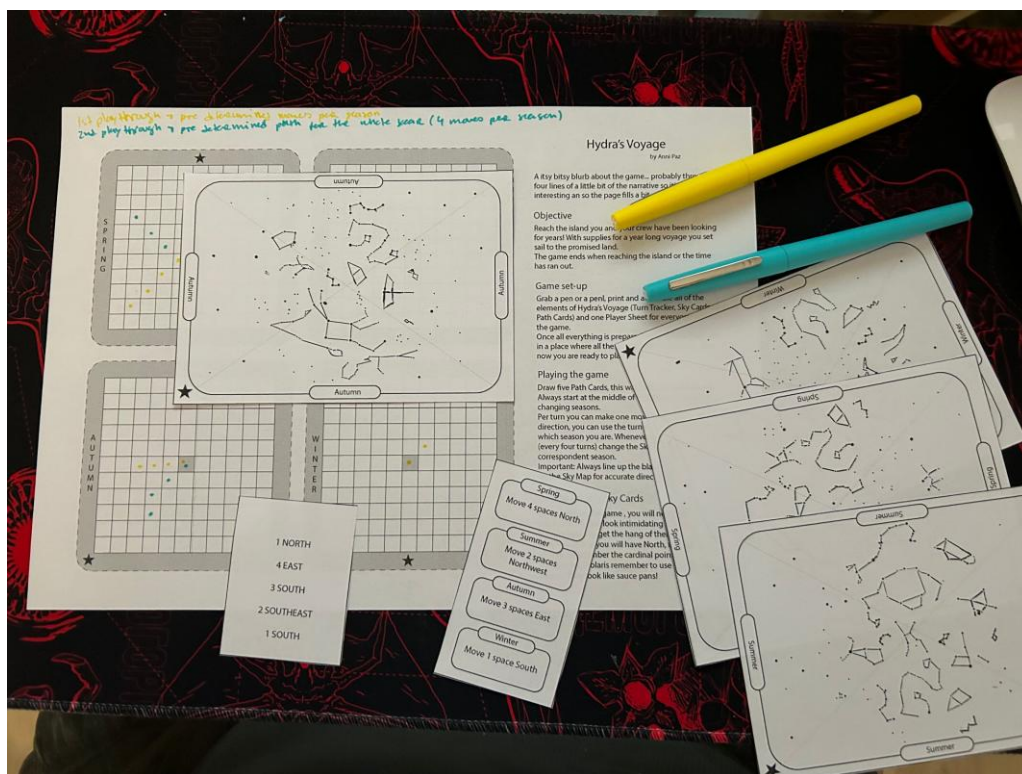


Figure 5.6 - Printed version of the second prototype of *Hydra's Voyage*. Photograph taken by the author.

Before advancing to the third prototype there were some attempts to have fully illustrated prototypes, but those were quickly scrapped due to not being practical and too time consuming for the current stage of the game. Having this small illustration step in the process help to come up with some interesting solutions for increasing the difficulty such as

adding obstacles to the various “Seasonal Maps” and discarding a busy visual style that would be too complex and not contribute positively to the game.



Figure 5.7 - Illustrated study of a possible prototype. Illustration created by the author.

The third prototype had noticeable changes, from the introduction of various resources for the players to manage to the implementation of the turn tracker in the actual “Player Sheet” instead of being an external component that required additional assembly.

The various “Seasonal Maps” had a key alteration as well, at this stage it was introduced various obstacles within each map which helped to create a gameplay experience that required more strategy, if the objective would fall in one obstacle they players would have to go into the next available spot in the same direction. Overall this turned out to be the best decision for the game, with the addition of the resources and an useful turn tracker it created interesting synergies within the game due the players having to choose what to do with each turn, either move or collect resources.

From this point forward it was cemented that the game would have a total of sixteen turns, four for each season in order for each one to have a full moon cycle. This became useful for the management of the various resources, now the players had to manage their water usage, fish and seasonal crops, spring, summer and autumn. The player would start with four waters and four spring crops in their inventory, at the beginning of each turn one water and food would be marked off their inventory.

These resources could be replenished by dedicating a turn to gathering resources, during their turn players could harvest, plant crops and fish, the amount gained of each resource would be determined by the roll of a D6. The key difference between fish and crops was that the fish are available immediately while the crops would be available in the next corresponding moon phase, meaning after four turns. The way to replenish water at this stage was too fiddly and would be a resource that players would forget about their existence, since every two turns the players would gain one water.

Each turn the players would have one action, this action could be utilised to move the ship in the maps or gather resources. For the movement the players could move a singular space, but could opt to utilise an additional food (crops or fish) to make an additional movement. In regards to movement, one thing became clear, the map didn't have enough tiles to complete certain movements described in the objectives.

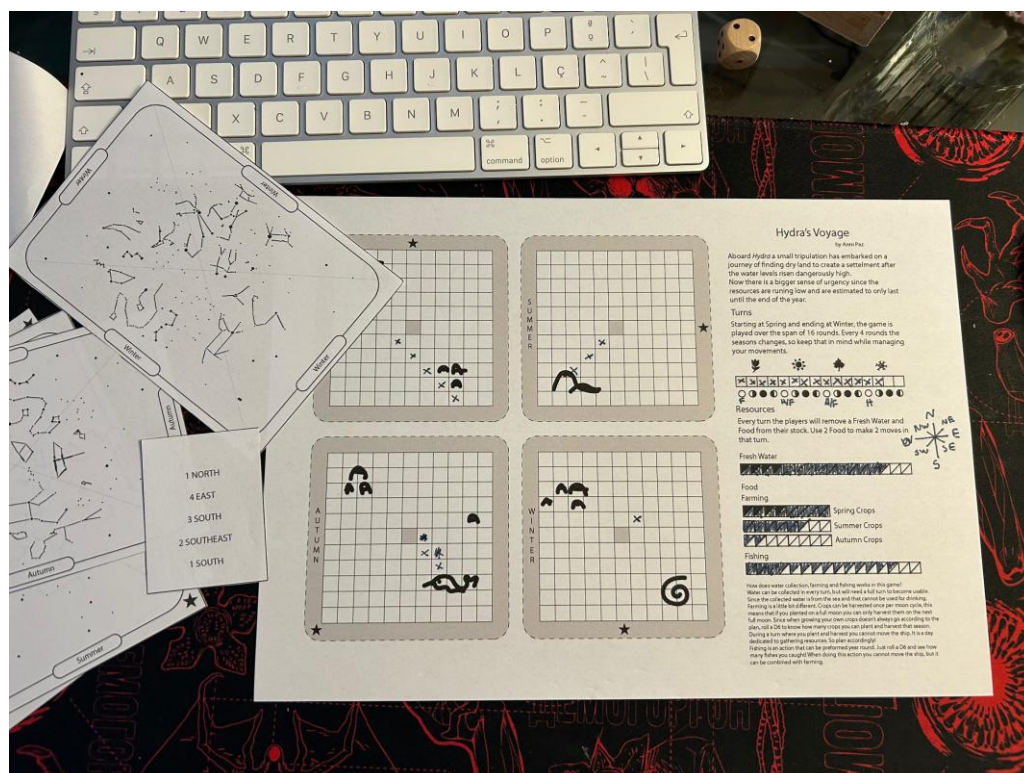


Figure 5.8 - Third prototype of *Hydra's Voyage*. Photograph taken by the author.

Prototype four was mainly to test different layouts and figure out the amount of tiles that the various "Seasonal Maps" would need for the players to complete the various objectives. At this stage it was also introduced various difficulties for the objectives, there were four levels of difficulty, easy which contained a total of 8 moves, medium that had something between 9 and 11 moves, hard that would be between 12 and 16 moves, and finally, impossible that would have more than 16 moves that the players would need to complete. This structure of objective was maintained until the sixth prototype version, where the game had a restructuring.

Another change that this prototype had was the alteration of the water tracker to include the sixteen necessary waters to complete the game, but this turned out to be pointless and annoying for the players since it was functioning as a secondary turn tracker that didn't serve any purpose during the game.

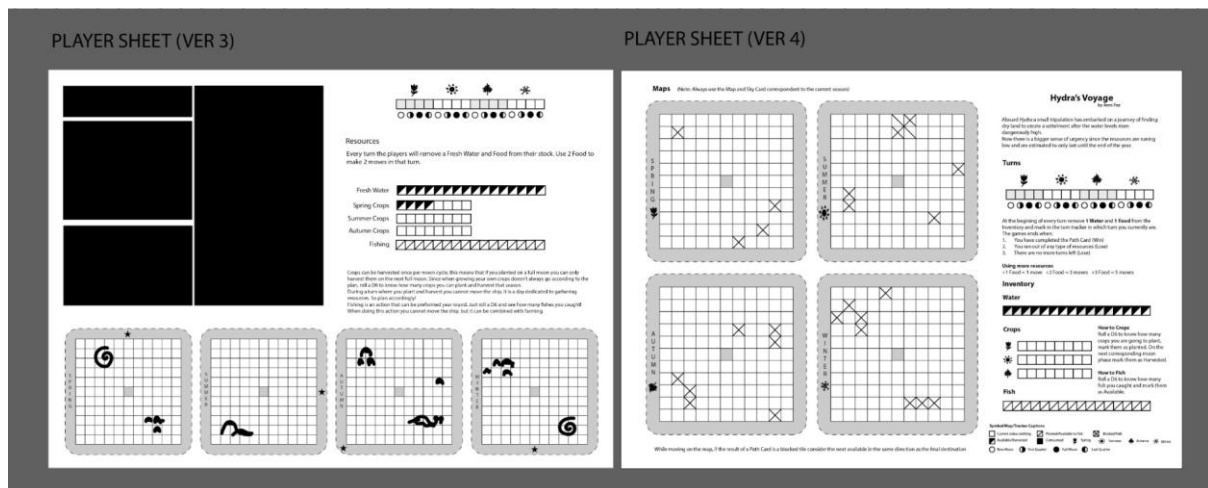


Figure 5.9 - Layout testing for *Hydra's Voyage*. To the left: An hypothesis to have all the necessary rules in the "Player Sheet". To the right: Previous layout with the addition of key rules in the "Player Sheet" to serve as a quick reference guide for the players. Screenshot taken from the illustrator file by the author.

During the process of creation of the fifth version of the prototype, the development of *Hydra's Voyage* started to become stagnant. The game didn't seem to be serving a purpose and the design was starting to become redundant, there was an overall dissatisfaction with how the product was becoming. The smaller changes made with this prototype was the creation of a "Player Sheet" without obstacles in the various "Seasonal Maps" to be an introductory level from players by removing the stress that having obstacles would cause, this was quickly removed due to changes done in future versions.

Another change that this version of *Hydra's Voyage* had was the way in which players would obtain the various resources. The players would start with the same 4 initial spring crops, and players could still in turns where crops were being planted they could harvest the available ones and attempt their luck in fishing, the way that the crops worked remained unchanged but the way fishing worked was changed. As mentioned before it is still an action that can be combined with farming and the amount of fish gained is still dependent on the roll of a D6, but since the previous solution the players were gaining too much fish that would become useless. Now the players can either gain one, two or zero fishes, this is determined by the value rolled on the die, if the players rolled a two or a three they would get one fish, if the number rolled was a four or five they players would get two fishes and if the result was either a one or a six the players would get zero fishes.

The sixth prototype is when the game starts to feel complete after all the changes done in this version, this is where it starts to look like the finished product but that still has some tweaks that needs to be done.

The main alteration in this version is turning the “Sky Cards”, that have been the same since the beginning of the development process, into an element that was transparent and that could be overlaid to the various “Seasonal Maps”. This process went from adding a grid to the “Sky Cards” with the corresponding number of tiles and adding the same identification to them and to the various maps, but this constituted into the problem of the players having to do various mental gymnastics to rotate the identifiers. This issue is what led to the cards being truly transparent, still with the grid to have some visual element that would allow the players to correctly line them up with the map, it was also at this prototype that the “Sky Cards” stopped being allowed to be placed diagonally.

Having the “Sky Cards” overlaid with the “Seasonal Maps” it stopped making sense on having predetermined paths as an objective, with this having a objective for each season became viable again by making the constellations also serve as objectives, it also made sense for the players start the game during spring in the middle tile of the map but on the sub consequent seasons start on the objective of the previous season. This decision made more sense with the narrative of the game, giving the players a better sense of progression by providing the sensation that they are moving towards a goal.

Another big change for this prototype was changing the singular action that the players could take in a turn and implementing an action point system where the players had three action points to perform any combination of the following actions, move the fish, plant crops or fish and collect water. At this point it felt unnecessary to limit each season to four turns, it was more interesting to give the players the option to manage their time however they see fit as long as the objectives are completed.

The resource collection suffered some changes. The crops now are a direct change of water for planting crops that will be ready within four turns, meaning after a full moon cycle but they are still divided into four different seasons. The fishing and water collection are the ones that suffered more changes, since every time a D6 is rolled the total of the face value and the bottom value is always going to be seven, it would be interesting to relate this two values and implement it in the game to solve the fish and water collection, one of the values would be for the fish and the other would be for water.

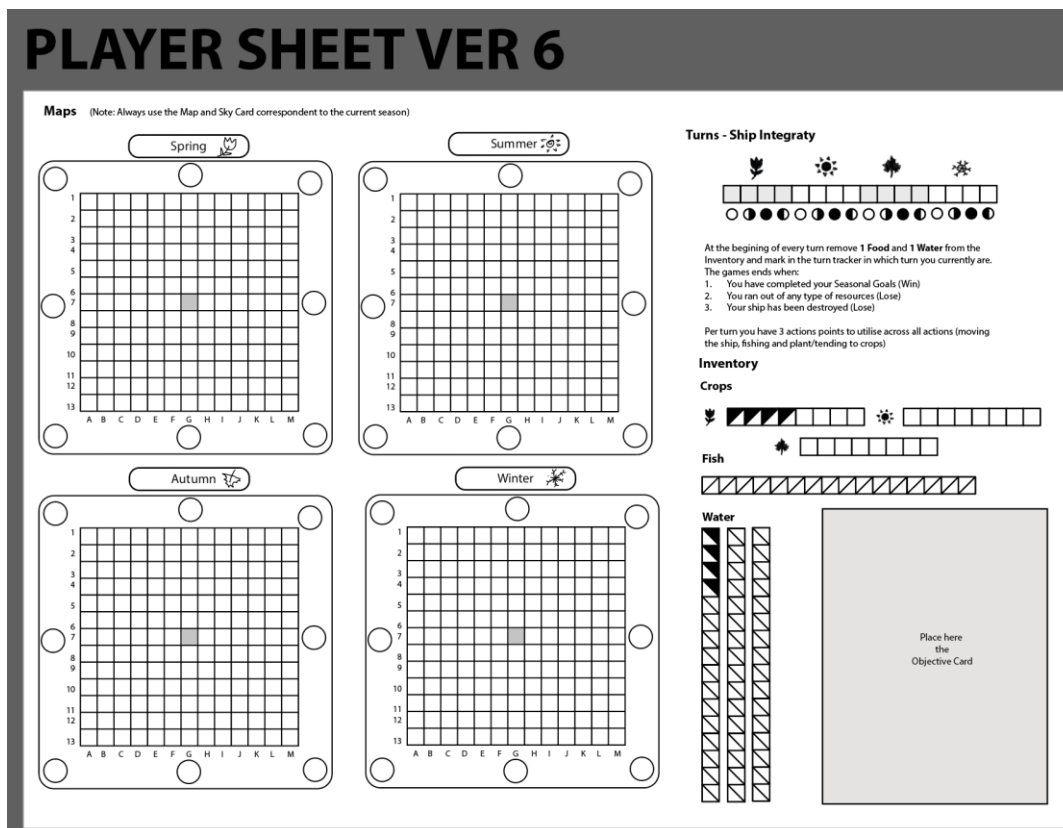


Figure 5.10 - Digital version of the sixth prototype of *Hydra's Voyage*. Screenshot taken from the illustrator file by the author.

The following iteration expanded on the changes done before, by bringing more of the narrative created from the illustration into the gameplay. If the water levels had risen dramatically and fast, there are zones where the landscape and environment would have changed in ways that wouldn't be possible to predict without adventuring into them. This if statement is what led to the addition of unknown tiles which had a variety of possible events, which could provide the players with additional resources or damage the ship causing the players to lose a turn.

To not cause unnecessary frustration on the players, each of the "Seasonal Objective Cards" would provide the players with resources needed for an additional turn in the case of running out of resources, but also rewarded players that had managed their resources by giving them an additional turn after the completion of the goal. Since there were additional trackers for the resources made the "Player Sheet" start to feel cluttered, this is why the idea of having a complementary sheet dedicated to the various resources with the respective rules. This later became redundant and an additional printing element for the players, especially since it would be an element that would have to be reprinted everytime the game was played, on a future iteration the space dedicated to placing the objective card in the "Player Sheet" was removed, which allowed to have space to have the resource trackers in the same sheet.

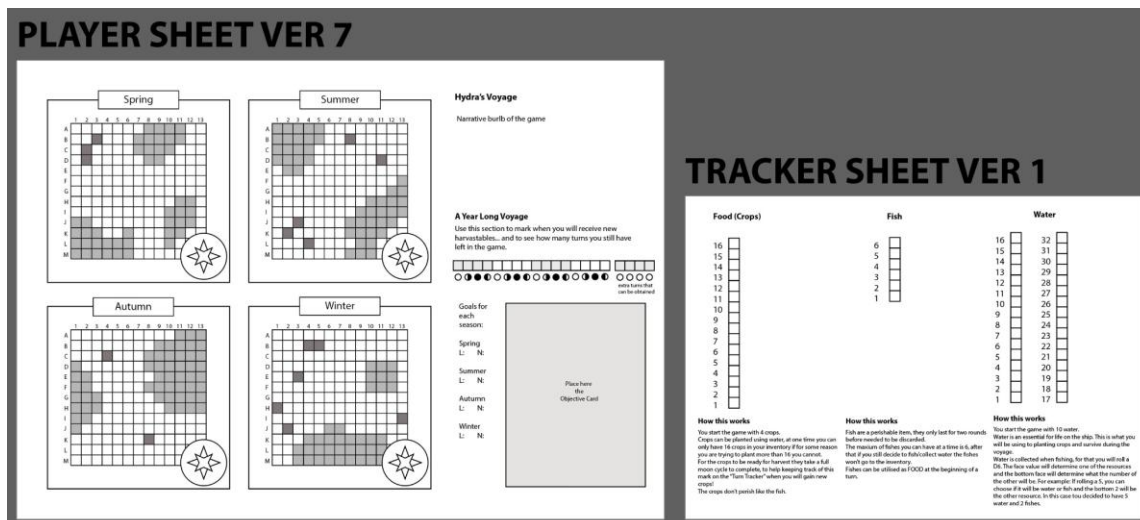


Figure 5.11 - Digital version of the seventh prototype of *Hydra's Voyage* with the dedicated page for resource management. Screenshot taken from the illustrator file by the author.

With the eight iteration of the game, a final layout of the "Player Sheet" was created, this was possible to be contained in a single A4 piece of paper by creating a maximum amount of resources that the players could keep and making clear rules on how they would be utilised. All of the resources received were limited to a maximum of six for each type of resource, and a rule was imposed for the duration of the fish, now the fish would only last two turns before perishing. The idea of having limited resources came from the players not dedicating actions throughout the game to collect them, most of the players would hoard resources in the beginning of the game and then finish the game within four turns.

The tiles marked as unknown now have a bigger probability of events happening, this creates more the experience of having a high risk and high reward actions.

Aesthetically the diagonal lines in the "Sky Cards" were removed and were added in the various "Seasonal Maps" in order to reduce clutter from the constellations, and the cards being transparent they would still be visible.

Spring

Summer

Autumn

Winter

Hydra's Voyage

After the water rose extremely fast there is the urgent need to get to dry land. You can still produce resources to survive, but your ship on the other hand... it's an old sail boat that probably should last around one year.

You have an idea where you need to go there are some parts you have no clues on how the drastic affected the landscapes.

So follow the constellations and find a safe place!

A Year Long Voyage: Turn Tracker

Use this section to mark when you will receive new harvestables... and to see how many turns you still have left in the game.

Bonus!
extra turns that can be obtained

Where to go?

letter / number

letter / number

letter / number

letter / number

Inventory

6
5
4
3
2
1
0

6
5
4
3
2
1
0

6
5
4
3
2
1
0

From this version the changes made in the game started to be fewer and were mostly contained to few rules adjustments or visual changes. This version has more unknown tiles to force the players to interact with them, since on the previous prototype players were avoiding them at all cost due to being afraid of having consequences.

Some tweaks were made in the “Sky Cards” to ensure that the various stars in the constellations would clearly hit within a defined tile.

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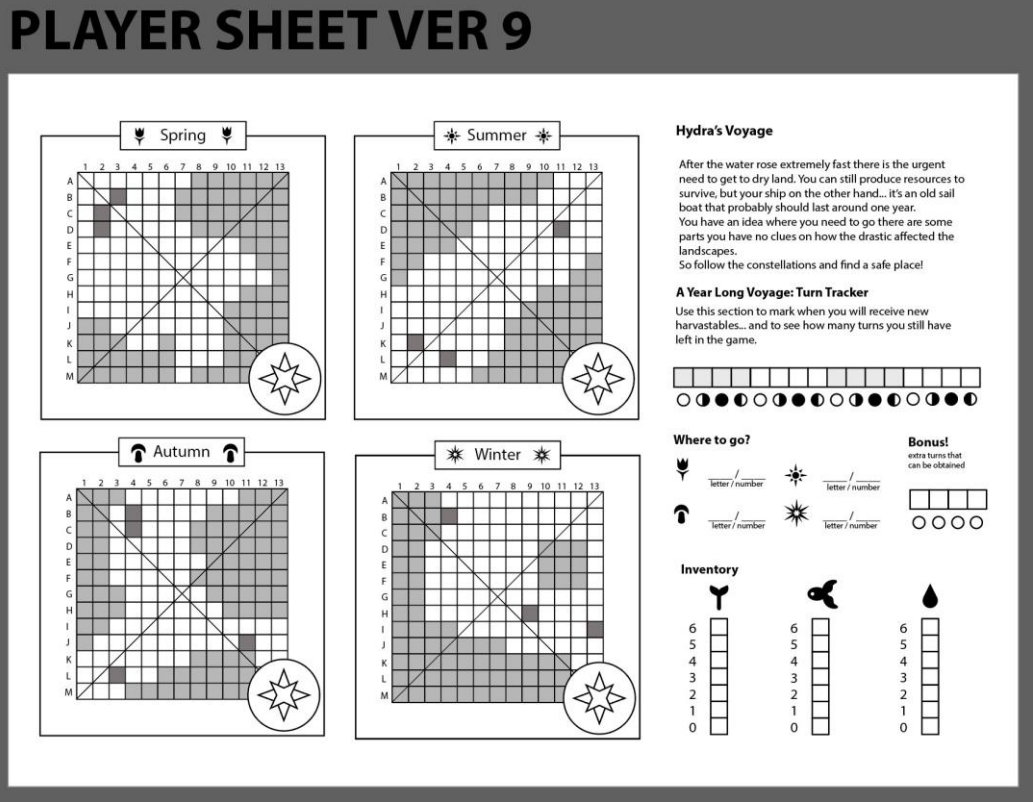


Figure 5.13 - Digital version of the ninth version of the prototype for *Hydra's Voyage* before the final art being implemented. Screenshot taken from the illustrator file by the author.

After having gone through intense changes in the game, the following versions of the game had minor tweaks that are still worth mentioning in this report.

On the tenth version of the game the changes were done to the writing of the rule booklet, which is an important element of the game since it teaches the players how to play the game and is there to support any questions that the players might have while playing the game. This is also the version where the final artwork has been implemented to all the game elements.

During the final version of the game there were some small adjustments on how the resources can be utilised, meaning water can be utilised to extend the duration of the fish by one turn in exchange of one water and if the players at any given point of the game have six of each resource they permanently lose one turn from the turn tracker. This decision of the possibility of losing turns came from a narrative perspective, if the player is aboard a small vessel the amount of cargo it can hold is not infinite, meaning that at a certain point it would start to have some structural issues. The rule booklet has also been updated to reflect these changes and to improve the explanation in certain elements.

At this stage of iteration the game felt that it was ready to be claimed as finished, go through final rounds of playtesting and that it could be published. In the following section an analysis of the finished product is going to be provided, and a proper explanation on how the game is played.

5.3.5 | The finished product

In the final version of the game³ the players have a defined goal, the rules on how to play are clear, all the printable game components are relevant and enhance the player experience while playing. The best way to present the final version of the game is describing how the game is played and looking at the various components.

The game features an A4 “Player Sheet”, four transparent seasonal “Sky Cards”, a deck of sixteen “Seasonal Objective Cards”, and two event booklets which can be printed. Additionally players need to source a D6, a pen or pencil and three small tokens to serve as inventory tokens.



Figure 5.14 - Overview of all the printed game elements and additional components for *Hydra's Voyage*. Photograph taken by the author.

Hydra's Voyage is a navigation game where the players complete seasonal objectives to reach dry land before the end of the year or before their ship is ruined. The game is played through sixteen distinct turns where the players have a total of three actions to utilise each turn. These actions need to be decided on how to be used beforehand and

³ The Print and Play version of the game has been published in BGG (<https://boardgamegeek.com/boardgame/437042/hydras-voyage>)

cannot be changed during the turn. These actions can be any combination of the following, planting crops, fishing and collecting water, or moving the ship in the map. One thing that is worth mentioning is that when reaching the destination on the “Seasonal Objective Card” and there are still unused action points they don’t pass to the following season, the turn ends as soon as the objective is completed.

The main element that the player interacts throughout the whole game is the “Player Sheet”, in which there are four seasonal maps which are where the players are going to mark their movement during the game. Each of these seasonal maps has a grid of 13 by 13 tiles, in which the rows are identified by letters and the columns are identified by numbers to make it easier to identify the objectives.

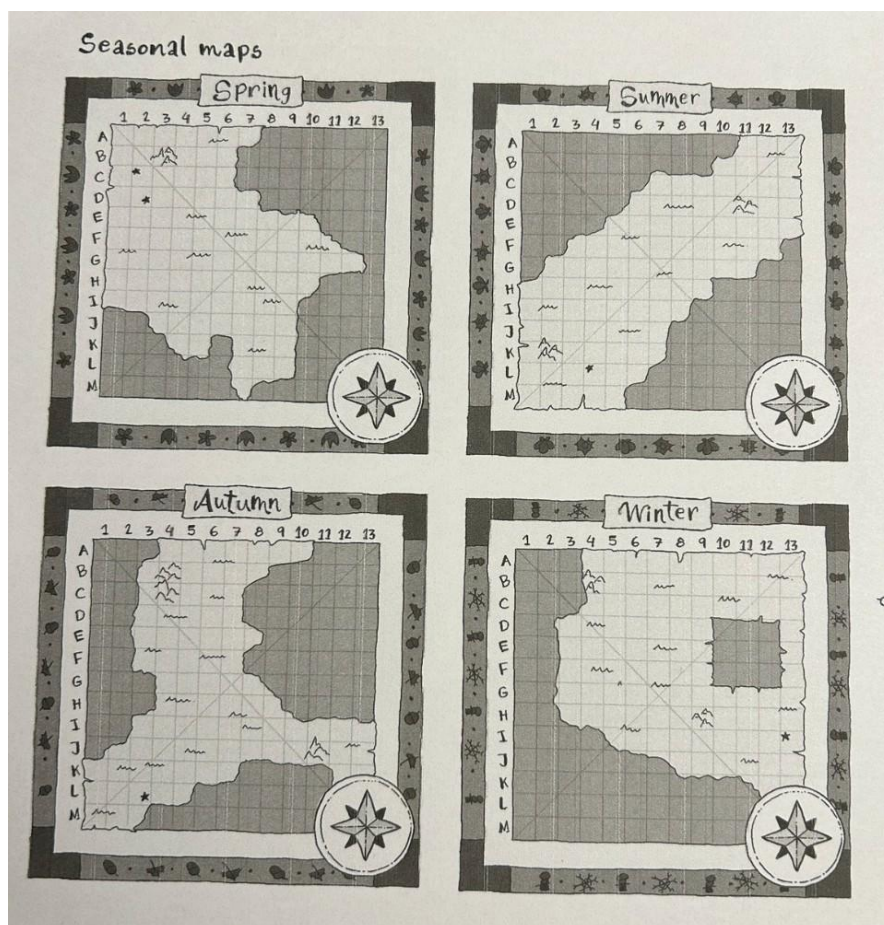


Figure 5.15 - Close-up in the seasonal maps in their final illustrated version. Photograph taken by the author.

In the game, various elements need to be accounted for, such as the objectives, the number of turns left to the players, when the new crops are ready to be harvested or the fish is going to go bad, and the cardinal directions unique to each seasonal map, the “Player Sheet” was designed to provide the player’s multiple places to write additional information without obstructing their playing experience. One of the situations where it appears that an element is just represented just for aesthetic purposes is the illustrated compass in each of

the seasonal maps, this element was added for the players to have a dedicated place for annotating the cardinal directions, but it will still make part of the visual language of the game.

The turn tracker evolved into an element that is not only to mark down how many turns are left in the game but also a useful resource to better help the players manage their crops and fish, by providing a place where they can annotate when to harvest or the fish is going to perish.

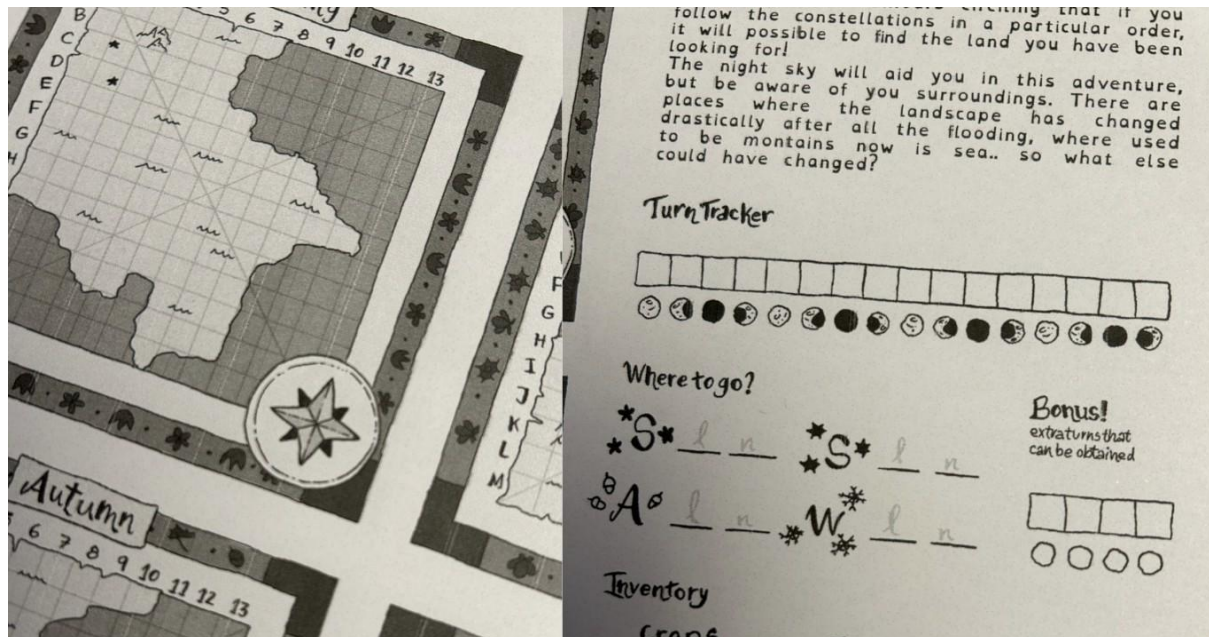


Figure 5.16 - Various locations dedicated to players write annotations. To the right: Illustrated compass in the seasonal maps. To the left: Turn tracker and “Where to go?” section of the player sheet. Photograph taken by the author.

The “Player Sheet” is used to play the game, this is element of the game that will need to be printed a new copy for each playthrough which can cause some waste but this component can be laminated and be written on with a dry erase marker, which excludes the need for additional objects to serve as inventory trackers.

During the game the players need to manage three distinct resources, crops, fish and water. If the players exhaust all the resources it results in a lost game, but if that happens players have a second chance of continuing the game by utilising the emergency resources available in the “Seasonal Objective Cards”, these resources offer the players the chance of doing an additional turn in the game. Having an excess of resources can be problematic since the players have a limit of 6 of each resource, but if at any given point in the game the players have 6 crops, 6 fishes and 6 waters it will cause damage to their ship, causing them to permanently lose one turn.

The “Player Sheet” has a section called Inventory that is dedicated to the three resources available in the game. At the start of the game players have three crops and three

waters, these can be replenished during the game and it will be possible to obtain fish. To obtain crops, players need to use the equivalent amount of water to plant crops which will be available to harvest in the next corresponding moon phase (4 turns), for example a player uses two waters to plant two crops during a new moon, these crops will be automatically added to their inventory in the following new moon. The Hydra crew has a specific way of fishing, they use a bucket which brings on board both fish and water. This bucket is represented by a D6, when rolling the D6 the players obtain two distinct values that add up to seven. The face value will be attributed to water or fish (player's choice) and the bottom value will be the amount of the other resource the players obtain, when it comes to water the number represented on the die is the amount the players will obtain but when it comes to fish the players need to divide the total by two and round it down, for example a player rolled a 5 and decided to use it to obtain fish and use the 2 in the bottom to gather water, the player will obtain a total of 2 fishes ($5/2=2, 5-2=3$) and 2 waters, but if the player decided to use the 2 to obtain fish they would add 1 fish to the inventory ($2/2=1$) and would add 5 waters to the inventory. Fish are the only resource that can expire, fishes need to be consumed within two turns or the players will lose them, but players can use one additional water per fish in the beginning of the turn to keep them in the inventory.

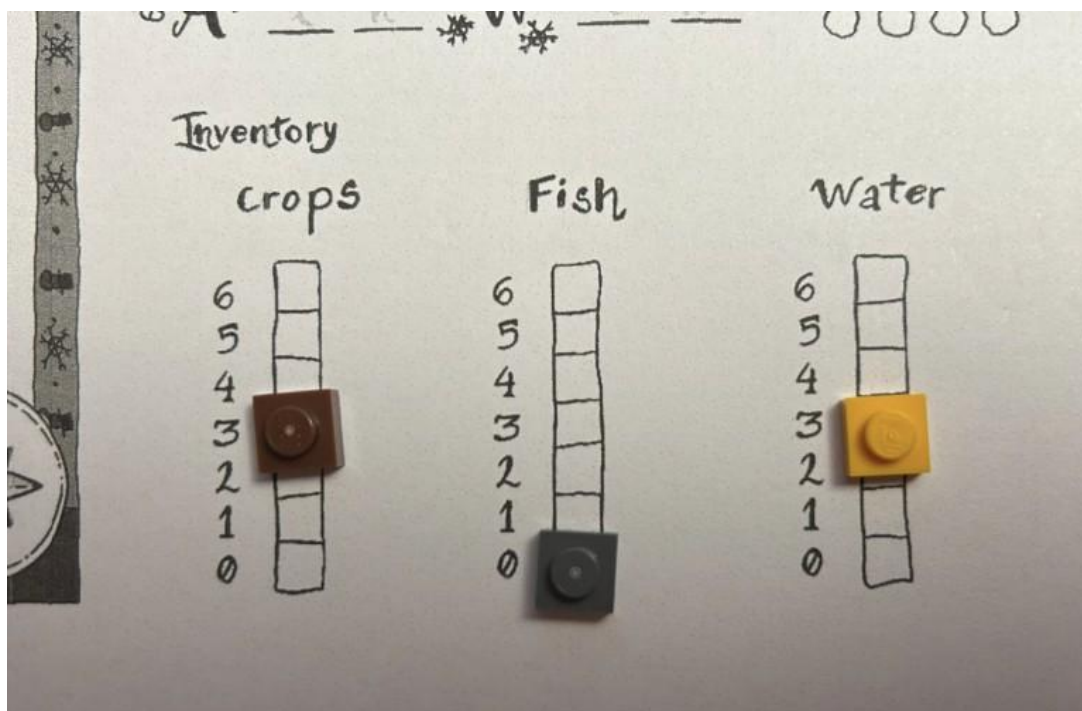


Figure 5.17 - Close up to the resource management section of the "Player Section". Photograph taken by the author.

The objectives are divided one per season, during each season the players need to move to the location to a specific star represented in the corresponding "Sky Card", this information is disclosed in the various "Seasonal Objective Cards" in which a constellation is

represented and has an arrow directing to a specific star, this constellation is also identified by name.

To provide replayability factor to the game, there are a total of 16 different objectives. This deck is composed by four cards for each season for spring the constellations chosen were Cassiopeia, Hydra, Corvus and Hercules, for summer were Ophiuchus, Scorpio, Bootes and Sagittarius, for autumn the constellation chosen were Auriga, Aquarius, Lyra and Ursa Major, and finally for winter the chosen ones were Gemini, Orion, Andromeda and Leo. The selection process for the constellations was that they needed to be specific to the season and that they would need to be spread across the “Sky Card” without coinciding with the placement of the previous season constellation, in some led to the choice of constellations that can be observed year round.

Completing these cards without running out of resources during that season rewards the players with an additional turn, which can become useful in certain occasions because of the possibility of losing turns while playing the game, but they also serve as a resource to prevent the players from not finishing the game due to exhausting resources.



Figure 5.18 - Various examples of the “Seasonal Objective Cards”. Photograph taken by the author.

To create a game which provides the players with risk in their actions, all of the seasonal maps have a section that is represented like a torn map meaning that what can happen in those spaces is unknown to the players. There are occasions in which the players

can lose resources, turns or be forced to move to another direction because of the winds or tides, but there are also circumstances in which the players can gain resources to replenish.

There are two distinct event lists that use the same layout of the maps, but the events that can happen in the unknown sections of said maps are placed in different tiles or have been slightly altered. Determining which list is going to be used through the game is fairly simple, the players roll the D6 before starting to play, if the roll is between 1 and 3 List A is used and if the roll is between 4 and 6 List B is used instead. The decision of adding this list was to provide the game more replayability.

One element that has been mentioned multiple times but that hasn't been properly explained are the "Sky Cards", these are vital for the completion of the "Seasonal Objective Cards" and to find the various cardinal points in each seasonal map. These are printed in a transparent material, for this version tracing paper, it isn't as transparent as acetate paper but has a nice paper texture to it, isn't completely transparent giving the cards more readability, and it is easier to print at home.

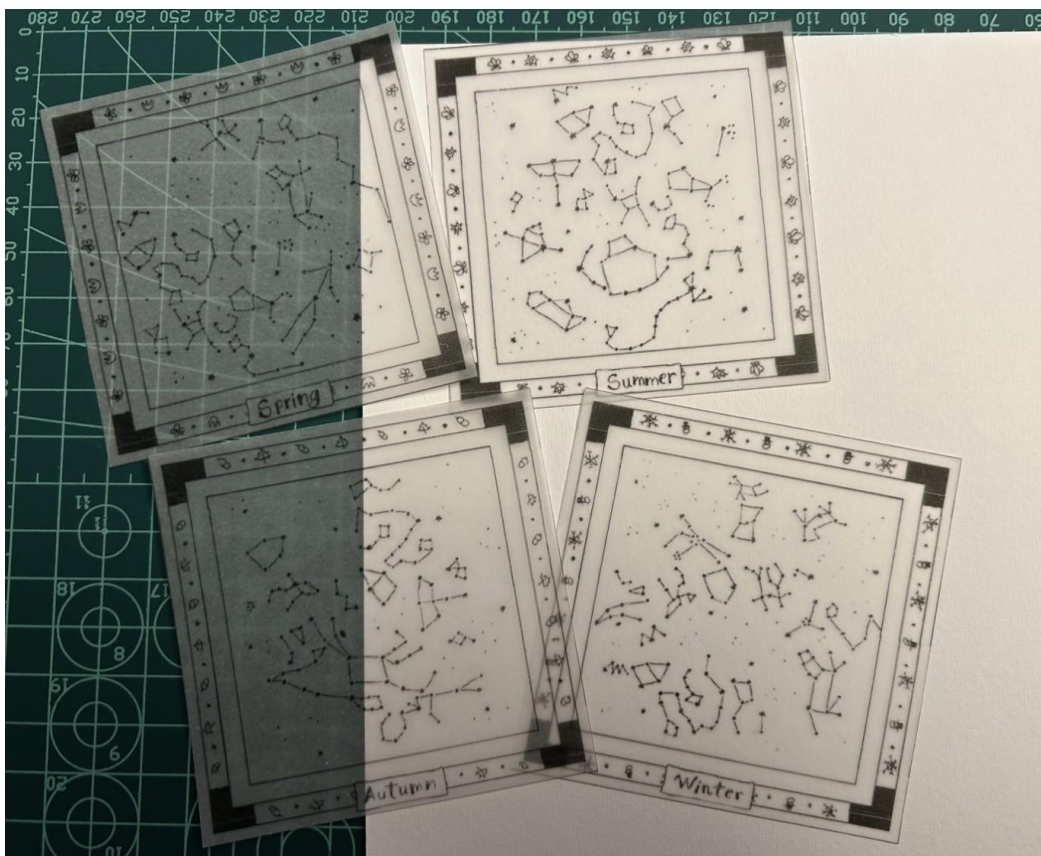


Figure 5.19 - "Sky Cards" of all seasons. Photograph taken by the author.

There are four "Sky Cards", one for each season, spring, summer, autumn and winter, which are overlaid with the corresponding seasonal map on the "Player Sheet". Having this overlay allows the players to know in which tile their seasonal objective is, the

various constellations in the “Sky Cards” are spaced out in a way that there is no doubt in which tile the players should be going.

The downside of having a transparent element in the game that later needs to be overlaid with other elements is ensuring that the size is the same when printing out the game.

5.4 | Player Reception

Playtesting was an essential step throughout the development of Hydra's Voyage, this made possible to analyse the player's feedback to the game and identify issues in the design of the game. It was necessary to create and follow an approach to keep the data collection consistent throughout the various sessions, for this it was adopted an observation approach to collect the data, meaning that for all the playtesting sessions the players would be observed while interacting with the game and taking pertinent notes about their behaviour, after the game being played the players were asked directly feedback on the game and if any particular elements weren't making the game enjoyable.

The playtesters came from various sources and backgrounds, Hydra's Voyage has been tested by friends and family, people met in board game cafes, people met during events related to board games, with a group of international students, and some participants in a game development conference. For each of the development stages of the game, the structure of the playtesting sessions remained the same, players were explained the premise of the game, the objective and how to play the game. During those sessions, annotations were made for later knowing which aspects of the game needed to be altered and which were working properly, as well as having notes on direct feedback from the various players.

In the early stages of development Hydra's Voyage was self-tested and with a few family members that are familiar with game development, removing the pressure of having negative feedback due to the lack of having an unfinished product. These tests were mostly focused on ensuring that the base of the game was solid before adding additional components, such as resource management, the focus was solely on how the movement works and how astronomy can be applied to this aspect. Even Though being in an early stage of development this initial contact with future players provided valuable feedback such as correcting the shape of the tiles from hexagons to squares so movement in eight directions would be possible, revising the size of each “Seasonal Map” to allow all the necessary movements, and fixing the way the objective of the game was being presented to the players.

Once the game started to be tested with players outside the previous closed circle it became evident that the game wasn't yet very enjoyable from the player's perspective and

that the astronomy could be applied in a more interactive way in the game, instead of just being contained in a single component that would be only once at the beginning of each season to discover the various cardinal directions. It was clear that changes needed to be made regarding those aforementioned issues, this is when there was a major shift in the design of the game by changing the “Sky Cards”, the component where the concept of celestial navigation was being applied, and directly connecting it with the various objectives of the game. This change turned the game more engaging for the players, by giving more purpose to the components of the game, and, paraphrasing a player, it made more fun at the beginning of each season to look where in the grid each constellation would fall and then thinking what the best course of action would be to complete those objectives.

One of the biggest opportunities to playtest Hydra’s Voyage was during the Aalto ARTS Summer School program in late August, where it was possible to test the game with over 30 international students with various backgrounds. The overall player reception was positive, but it became clear that the rules required some adjustments due to having some confusing language and contradictory rules, this issue also helped in creating a steep learning curve for new players. Another pointed issue was how the fish was being used and that it felt slightly redundant with the existence of crops, this was an issue that persisted throughout the development of the game, and it has been possible to find an elegant solution to this mentioned issue where it would both enhance the game and satisfy the players.

opportunity to play the game once again.

This round of testing provided positive feedback and the main comments were that they had learnt something about astronomy, in this case how to find north in the northern hemisphere by observing the night sky and how to recognise certain seasonal constellations. Amongst the positive feedback, there was a small fraction of negative feedback, which mostly came from frustrated players who didn’t understand the rules at the beginning of the game, or were too impatient to read the rules, there were a couple of players who mentioned that the player didn’t have any agency during the game and in their opinion in what they had played there wasn’t a game, meaning that they didn’t consider what they just had playtested was a game. When asked to expand on the subject to better understand where they were coming from, they replied that everything needed to be changed and that it was the designer’s job to understand what wasn’t working and not the player’s job.

Despite the negative feedback, it also became clear that the game has the potential to be expanded, by either attempting to redesign certain elements of the game to have a traditional board game with multiple components, but also by keeping in the PnP format by adding “Sky Cards” and “Seasonal Objective Cards” referent from the southern hemisphere.

The feedback from the players that had been involved since the beginning of the development process mentioned that it had an interesting and strong development since the

early stages, the game had become more engaging and interesting to play than the initial versions but the issue with the usage of fish remained.

5.5 | Lessons learned while designing *Hydra's Voyage*

When designing a game it is always possible to learn, being from the way it was designed, from the player interaction with the game or by the solutions reached to fix issues within the design.

This being the first game that was developed with a conscious start from the illustration it was essential to document the various steps of development to eventually propose a possible method that allows other designers to follow it. One of the main misconceptions in designing a game this way is that at any given stage of development, it is that the prototype is always going to have polished artwork, but that couldn't be further from the truth. The pace at which the game evolves and the pace at which art is produced is vastly different, so there is the need to adapt the strategy and make a decision on how the development journey can become more sustainable for both the designer and illustrator, even if they are the same person. A necessary decision while designing *Hydra's Voyage* was to create an “ugly” version of the game during most of the development when severe changes were recurrent, this version is deprived of any visual work and is just composed of geometric shapes and text which helped to create the prototypes faster and more efficiently.

The illustration can be a great place to start the design process, for *Hydra's Voyage*, it became essential to create a rich narrative and game world but also to add certain challenges in the gameplay such as the addition of unknown spaces in the maps, as well as to justify the maximum amount of available resources and how the ship getting more deteriorated can make the players lose turns. Overall, the illustration can be a great place to start the design process, it helps to set the narrative and to create game mechanics but also sets the theme for the game from the beginning, which then leads to unique solutions specific to that particular game. A bonus part of starting from the illustration is that the visual style for the game is defined from the beginning, and if the designer and illustrator are the same person, it stops being a stress point when the game is finished and needs the final artwork.

The thought that the game design process is something that can be something extremely personal to each designer and what works for one doesn't mean that it will work for another, the same goes for the various design frameworks that exist, what works for board games doesn't mean that will work for video games and vice versa. Even if this is a reality, it doesn't mean that alternative ways to do game design shouldn't be explored and shared, sharing these experiences is what allows to evolve different views on game design.

With the various rounds of iteration and playtesting of the game, it became clear that it had the potential to be expanded and further developed. In the future, it would be interesting to create “Sky Cards” referent to the Southern Hemisphere, as well as add flavour text to the “Objective Cards” with some fun and interesting facts about the constellations since the players had the curiosity to learn more about astronomy. An interesting idea that surged during some playtest sessions was the possibility of having the narrative have an impact on the gameplay and vice-versa, meaning that this would create a game with more replayability and where the decisions would have a bigger impact on the way the game is played.

Chapter 6 | Stitch the Stars

This chapter is divided into four sections. The first identifies the project, this section is also subdivided into three, and each of those subdivisions explores in depth the objective with the creation of this game, from where the idea came from and how to accomplish the design of Stitch the Stars.

The second subsection is dedicated to exposing the development process of the game. This section is subdivided into five, each one of them exploring different relevant topics for the development, starting with exposing the methods to be followed while designing the game, the second is dedicated to exploring the narrative world and how the illustration played a role in the design, the third subsection is dedicated to the creation process of the first playable prototype, followed by the consequent prototypes until reaching to the final product.

The third section is dedicated to exposing the playtesting of the game.

The fourth, and final section, presents a conclusion to the development of Stitch the Stars, accompanied by reflections on the design experience, the obtained results and an analysis of the role that the illustration had in the design process.

6.1 | Identifying the Project

This project wasn't originally planned to be developed alongside this dissertation, but while designing Hydra's Voyage the idea for an additional game started to form and due to the theme of the game, and the way the game was designed it was included in this document.

Stitch the Stars is a pattern recognition game that also follows a Print-and-Play format, to make the players work on their fine motor skills while playing the game. In comparison to the previously presented game, it requires the use of some unusual components, such as a needle and thread. Due to safety reasons and for it to be possible for more players to be able to experience the game, those elements can be substituted by a shoelace.

In this game the players take the role of a young astronomer that is trying to chart the constellations visible in the night sky, but not knowing their names or the patterns they are supposed to have, this young astronomer starts to create their own constellations and the catch is that they want to be the first one in the room to finish this task.

6.1.1 | Objectives with the creation of the game

The main objective while designing this game was to create something engaging that could also have some function, in this case working on the player's fine motor skills.

The main objectives of the creation of this game are to have a playful way to work on fine motor skills while being engaged with astronomy and to create a game that would generate an artefact that players could display after stopping playing.

To make the game more accessible to multiple people the game will be in a print-and-play format, due to the investment being lower for the players and to be an effective way of reproducing single-use components easily. This does not eliminate the possibility of a physical version of the game with higher-quality components to be developed and released.

6.1.2 | Where did the idea come from?

The idea for the concept of *Stitch the Stars* came during the development of *Hydra's Voyage*, specifically when designing the “Sky Cards” components. While working on these components the idea for a supplementary game which allowed the players to take the role of an astronomer charting the night sky, started to emerge.

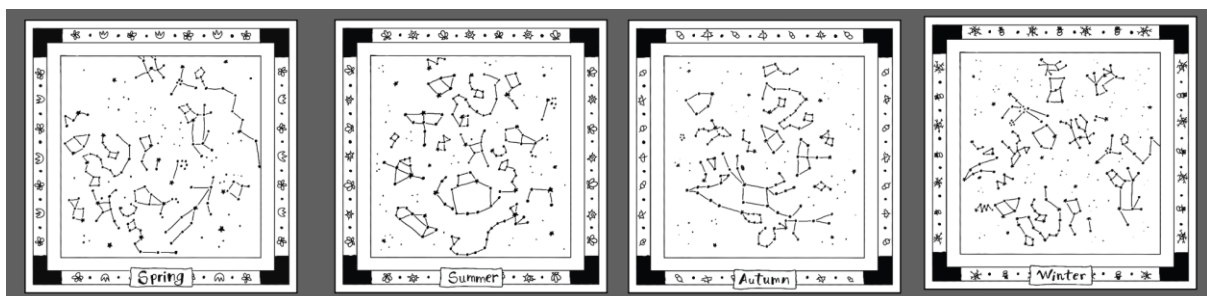


Figure 6.1 - Illustrated components that originated *Stitch the Stars*. Photograph taken by the author.

Initially this idea was going to be a simple prototype that would take a few days to develop and serve as a little break on the development of *Hydra's Voyage* in order to gain more ideas to solve some design issues the game had at the time.

6.1.3 | How to accomplish the design?

After having the source material for starting the design of the game, in this case the “Sky Card” component from *Hydra's Voyage*, the design process for this additional game can start. An essential step for the development of *Stitch the Stars* was to in the early stages of development create a list of guidelines or pillars that can answer the question “What is the game?”. For this game the list was as follows:

1. Be playful and have fun

2. Different levels of fine motor skills needs to be addressed
3. Astronomy as a mechanic and/or relevant to the gameplay
4. Illustration influence in the design process
5. Keep the game accessible to the masses

These pillars can be further explained to provide further clarification on each topic. The first one is a reminder that the game is not to be taken too seriously and that it can also function as a creative outlet for the players, this can be achieved by having a silly narrative or a ridiculous game premise. The second, “Different levels of fine motor skills needs to be addressed”, serves to acknowledge that people may have developed their fine motor skills which can result in different levels of development on those skills, and if the design objective is to create a game that addresses this it is essential to find a solution on the design of the game. The third pillar serves as a reminder to keep the majority of the mechanics present in the game based on different astronomy concepts to keep it relevant to the gameplay and not to just be treated as a theme. For the fourth pillar, “Illustration influences the design process”, it is essential to keep the theme of the dissertation and the origin of this game, The illustration should be involved in the design process even if it goes against the recommended way of developing a game, since the norm is to first design the game and then produce all the visual materials. The idea of starting with the visual side is for it to influence the design and help achieve different solutions to problems that might appear throughout the design process. The last pillar is a statement about the format of the game, which means all the components for the game can either be printed or are common household items, such as scissors, needles and thread.

6.2 | The Development of Stitch the Stars

This section is dedicated to exposing all the development stages of Stitch the Stars, as well as exposing the various challenges and solutions utilised. This serves to create a report on the development of the project while maintaining a formal approach to the writing.

This section itself is divided into various relevant thematic subsections, such as the first one where the narrative and game world are exposed, and the second subsection where the development of the initial prototype is explained and all the flaws are analysed. The third section is dedicated to the exposition and reflection on the development of the following prototypes, while the fourth and final subsection is dedicated to analysing the current version of the project.

6.3.1 | Design Methodology

To document and design *Stitch the Stars* it was important to maintain a method so the information is collected the same way, following a structure of research, implement, playtest and then finally listening to final feedback of the players.

The research step that was conducted earlier by contacting various game designers, who have created at least one game starting from the illustration or where the development has been heavily influenced by it, allowed the creation of a rough method based on the collected data. The method being implemented is the one presented at the end of “Chapter 4 - Starting to Design a Game by Illustration”, the process starts from sourcing an illustration to serve as the starting point for the design process, followed by anchoring the game in terms of theme, narrative and type game. The third step is where the prototype creation starts and goes into a loop of playtesting and iteration until gameplay feels good to be polished and eventually released.

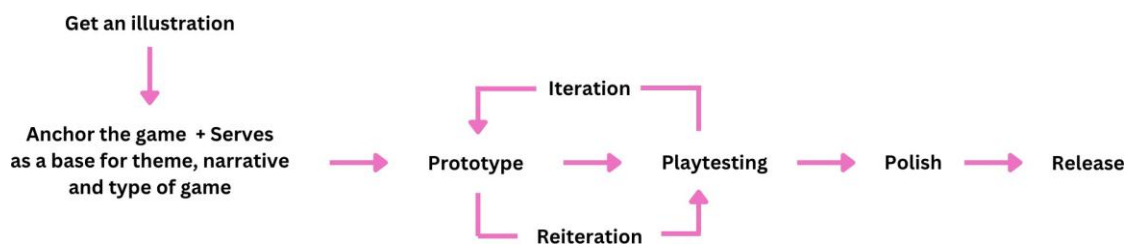


Figure 6.2 - Design method being used during the development of *Stitch the Stars*. Graph created by the author.

Playtesting is an essential step while designing a game, it allows to observe which elements of the game are working as intended, identifying design issues, how the players are interacting with the various game elements and obtaining feedback from the players. During the development of the game it is necessary to conduct various playtesting sessions at each new prototype iteration, these sessions can range from self-testing, creating a dedicated group of playtesters that are present throughout the whole development of the game, until eventually leading the playtesting sessions with real players. During these various playtesting sessions it is imperative that notes are taken about the behaviour of the players while playing the game, after the game being played asking the players for direct feedback on the game and if there were any particular elements that are stopping the game from being enjoyable.

6.2.1 | Narrative World and Thematic Setting

While designing the “Sky Cards” for Hydra’s Voyage various ideas for an additional game started to form, the situation of illustrating the various constellations created a feeling of being a young astronomer charting the various stars visible at night.

To make the narrative for the game more appealing and playful, to later serve as a base for the design decisions and help to solve issues that might appear during the remainder of the design process, alongside the use of the illustration, the basic premise based on the feeling of creating the illustrations was transformed into a short story.

There is a young astronomer, Luna, who is extremely competitive and recently has been tasked with taking note of the various constellations visible during the night, as well as identifying the various constellations. This task sounds like it would be something straightforward but there is a major issue, Luna doesn’t know the various existing constellations. Not wanting to admit defeat in what she considers a trivial matter, Luna decides to create her constellation and just like that the Bomb and Flower constellations are born.

With this simple and short narrative it is possible to start thinking about how a game could take this into consideration, it is possible to connect the idea with some astronomy, in this case constellation recognition and also borrow a childlike imagination to create their own patterns in the sky while using various celestial objects.

6.2.2 | Creation of the first prototype

From the beginning *Stitch the Stars* had a clear direction and defined idea of what the game would be or what it should look like. This initial prototype served as a proof of concept and to understand if the idea was playable while providing a pleasant game experience.

This version of the game started with drawing directly on a “Sky Card” from *Hydra’s Voyage* and then followed with a paper sketch of how the game would ideally look as a finished product. This sketch served the purpose of guiding the rest of the development process and annotating key features of the game. From this moment the prototyping of *Stitch the Stars* began by creating what would become the “Celestial Chart” component, which could be used only to play the game or a postcard/decoration piece after being populated with constellations.



Figure 6.3 - Initial sketch of the game with the various annotations. Photograph taken by the author.

To create this prototype, the “Sky Card” component from Hydra’s Voyage was repurposed for the “Celestial Charts”, simplifying the source by removing lines that connected the various constellations and by removing certain stars to create a more polished canvas for the players being able to work on. From the beginning, it was clear that it needed to have some different difficulties as a way to enhance its replayability. This difficulty would be achieved by providing the players with three different sizes of the “Celestial Charts”, which allow them to regulate the difficulty due to the number of constellations needed to be considered complete.

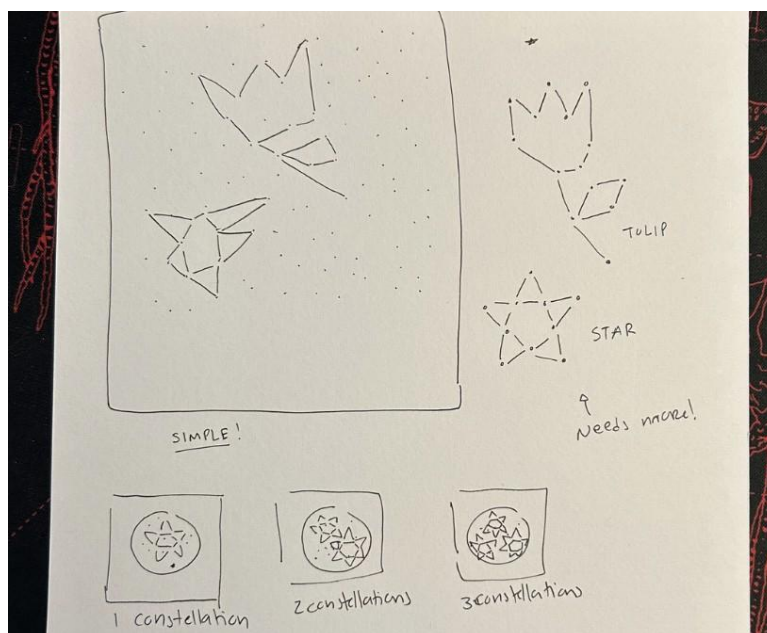


Figure 6.4 - Initial prototype of *Stitch the Stars*, hand-drawn and played with only with a pen to test the placement of the constellations. Photograph taken by the author.

The rest of the components were a couple of cards with the representation of some made-up constellations and empty ones to give the players the liberty to create their own and incorporate them into the game.

At this stage, most of the mentioned constellations were all represented in a single sheet of paper, since it was necessary to test them out in the various sizes of the “Celestial Charts”. One of the main considerations for this prototype is if it made sense to add real constellations to the available ones in the game, but the idea was scrapped due to the clash it would have with the narrative and because if those constellations were to be inserted in the “Celestial Charts”, they would become distorted and could cause some confusion to the players.

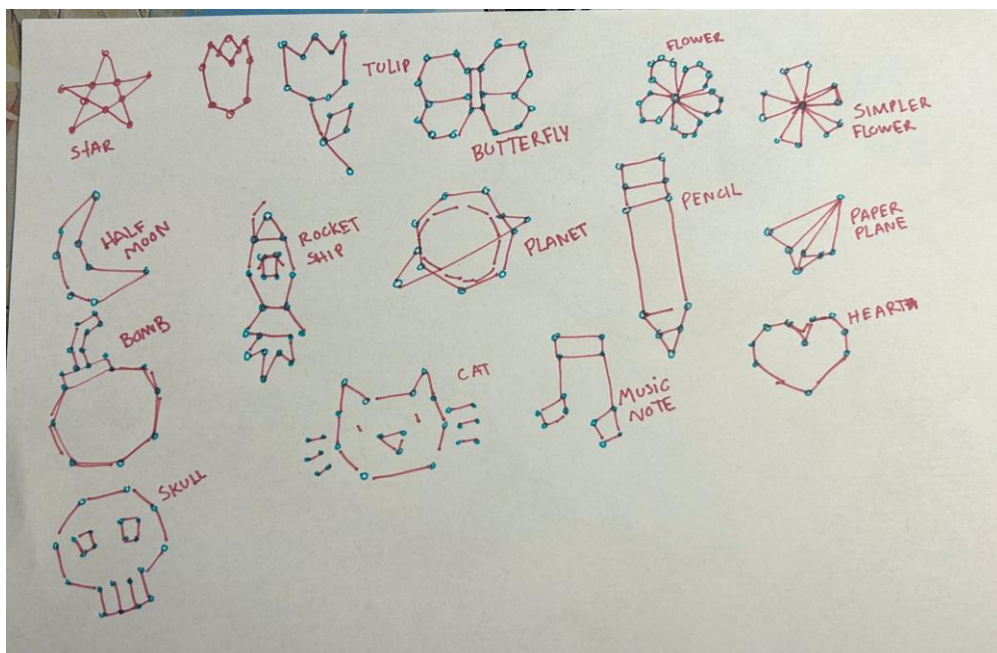


Figure 6.5 - List of the various constellations for the game. Photograph taken by the author.

The main objective of the creation of this prototype was to confirm if the idea for the game would be enjoyable and to decide if it was worth continuing with the development, on a technical aspect this prototype also served to test the spacing and quantity of stars in the “Celestial Charts”, as well as brainstorm ideas of how the difficulty adjustment could be done without compromising the base premise of the game.

This initial version was mostly tested utilising a pen, which led to the decision to add additional playing versions on consequent prototypes. The main player's reaction was that it didn't feel like a game but rather a playful experience due to the lack of objective which needed to be addressed in a different iteration to make it feel more like a game. Component it was clear that the various constellations needed to be in a card format and it was essential to give players the option to add their constellations, which made more sense with the

narrative created for the game, another note was on the “Celestial Charts”, there were too crowded with stars which was causing some decision paralyses on the players.

6.2.3 | Iteration and reiteration

Stitch the Stars had a short iteration process with only needing four rounds of prototyping to reach a finished product ready to be published. The first stage of prototyping was discussed in the above subsection, this is going to be dedicated to exposing and reflecting on the problems found while designing the game and how various solutions were reached to improve the game.

After having internally tested the first prototype, self-tested and with two additional household members, it was clear which areas of the game needed more polishing. In the second round of prototyping the main aspects to improve were the “Celestial Charts”, define the amount of constellations needed for each difficulty and define how many “Constellation Cards” should exist.

The last aspect was the easiest to find a solution, which came from a practical aspect of the chosen format for the game, Print-and-Play, to create an optimal way of printing the game while maximising the utilised resources, it made sense to have a total of 18 pre-filled “Constellation Cards” which is the equivalent of two A4 sheets of paper and provide the players a file with empty cards. The amount of “Constellation Cards”, although having a practical aspect, was also the amount needed to create more replayability due to the existence of a higher number of distinct constellations. Another way to boost the replayability and provide the players with the possibility of becoming the designer in the game was creating empty “Constellation Cards” which the players can fill with their creations and shuffle into the deck, this is not a mandatory element of the game but can be added to the existing roster of constellations or completely substitute the pre-filled “Constellation Cards”.

Fixing the “Celestial Charts” was the most time-consuming part of the stage of prototyping, this task required defining the minimum number of stars represented in each difficulty, the sizes of the components and the number of constellations that fit in each size, all of these elements took a lot of trial and error to find the perfect ratio. For the different difficulties to be more distinguishable it was created three different sizes were created the “Celestial Charts” were in common picture frame sizes in case the players wanted to show their creations after playing the game. This means that this is a single-use component when physically stitching the various constellations, the sizes decided were 10 by 15 centimetres, 13 by 18 centimetres, and the standard A4. Having decided on the sizes, it became easier to define the amount of constellations needed to complete each chart. The smaller size (10x15) would hold a single constellation, the medium size (13x18) would hold two constellations,

and the bigger size (A4) would hold three or more constellations, with this information it was easier to define the minimum amount needed in each size.

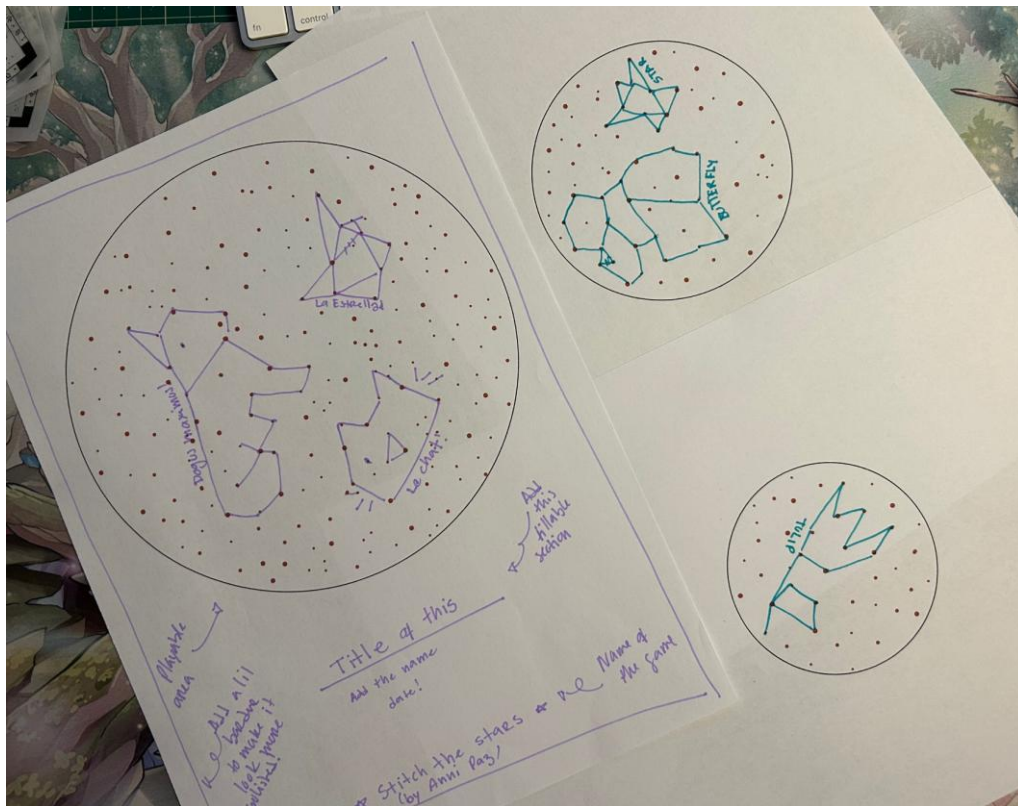


Figure 6.6 - *Stitch the Stars* after the second iteration. Photograph taken by the author.

In summary, after testing there were some elements that needed further work such as the layout of the “Celestial Charts” and working on turning this into a game instead of being a playful experience, these things were addressed during the third iteration.

The main objective of the third iteration was to turn what has been a playful experience and creative outlet into an actual game with a goal that players can work towards. After looking at the various elements of the game and how the players were interacting with the game, it became obvious that the project could work as a pattern recognition game where the players race each other to be the first one to fill their “Celestial Charts” with the drawn constellations.

In terms of the layout, it ended up being a minimal visual change where the page format changes into a more square-like shape to remove the unused blank space and it also added a simplified version of the rules which can later be cut out. At this stage the artwork and visual language for the game became defined, since the focus of the game is what the players are doing in the “Celestial Chart” it was decided to go towards a simple black line aesthetic with various hand-drawn elements, both the in the “Celestial Charts” and “Constellation Cards”.

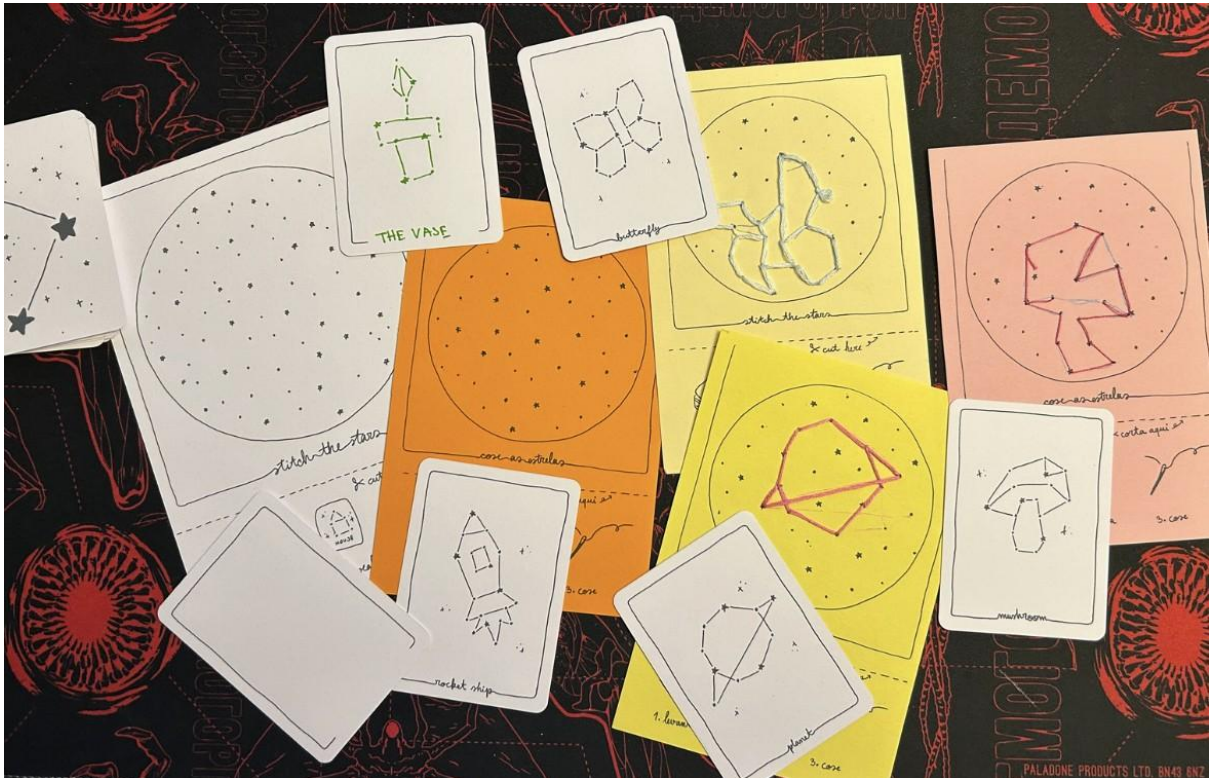


Figure 6.7 - *Stitch the Stars* after the third iteration, showcasing both empty game elements and after a playthrough. Photograph taken by the author.

Testing this version it became clear that one of the design objectives wasn't being properly addressed, which was the ability to utilise this game as a tool to help develop fine motor skills but only providing the players a single way of playing.

It became clear that it was necessary to make some changes to the design, and the first step into being able to progress with the design was to acknowledge that players will have different levels of fine motor skills based on various aspects, either age or some medical condition or simply lack of practice. This means that the game needs to have various playing modes to accommodate this, one is simply using a pen to create the patterns, the second using a shoelace to create the patterns in the celestial charts and finally the third using a needle and thread to physically stitch in the paper/cardstock.



Figure 6.8 - *Stitch the Stars* after the fourth and last iteration, showcasing both empty game elements and after being played in the various playing styles. Photograph taken by the author.

After this fourth iteration, the game felt ready to claim that it was finished and that could be published. In the following section, an analysis of the finished product is going to be provided, and a proper explanation on how the game is played.

6.2.4 | The finished product

The final version of the game⁴ features three distinct play styles based on the wanted difficulty and the level of comfort of the player with their fine motor skills. A pertinent way of presenting the final version of the game is describing how the game is played, looking at the various components and explaining the different play styles/variants.

Stitch the Stars is a pattern recognition game where the players race against each other to be the first one to complete their “Celestial Charts” first. The difficulty in the game is set by the amount of constellations needed to fill the “Celestial Charts”, the various variants of the game can make the experience more or less challenging to the players because of the various levels of required fine motor skills.

⁴ The Print and Play of the game has been published to BGG (<https://boardgamegeek.com/boardgame/435154/stitch-the-stars>)



Figure 6.9 - Overview of all the printed game elements and additional components for all the playstyles of *Stitch the Stars*. Photograph taken by the author.

The “Celestial Charts” are the central focus of the game, this is what the players are going to populate with constellations during the game. This element has three different sizes which correspond with the various difficulties of the game, a smaller size (10 cm x 15 cm) which holds a single constellation, a medium size (13 cm x 18 cm) which can hold two constellations and a bigger size (A4) which can hold three or more constellations, it is worth mentioning that in the shoelace variant of the game all of the “Celestial Charts” are contained in an A4 sheet of paper to be easier to handle the movements created with the shoelace. As seen in the image below, this component has been printed in both white cardstock and colourful cardstock to provide more visual interest.



Figure 6.10 - To the left: “Celestial Charts” for the pen and needle variant. To the right: “Celestial Charts” for the shoelace variant. Photograph taken by the author.

To fill the various “Celestial Charts” the players need to draw from the “Constellation Card” deck, which consists of a total of 18 different constellations but also has the possibility of the players inventing their constellations.

When placing these various constellations in the “Celestial Charts”, the shapes are going to naturally be distorted and each player positions them differently but there are some placement rules. One star can only be part of one constellation meaning it cannot be part of multiple constellations; this creates the situation where the players need to manage their only resource, the stars in the “Celestial Chart”, to maximise their placement options.



Figure 6.11 - To the left: Pre-filled “Constellation Cards”. In the middle: Empty “Constellation Cards”. To the right: Player filled “Constellation Cards”. Photograph taken by the author.

An important feature of this game is having various play styles/variants, which deserve to be highlighted in this exposition of the finished product. The development of this aspect started after noticing that the game could be potentially dangerous for younger children due to the existence of sharp objects such as needles and scissors.

The easiest way to interact with the game is by playing using a pen to draw the constellations in the “Celestial Charts”, this helps the player work with their ability of holding a pen. The various components of the game can be easily repurposed by laminating the various sizes of the “Celestial Charts” and utilising dry-erase markers to draw. These components are the same as in the third variant, needle and thread.

The second way to interact with the game is by using a shoelace to populate the “Celestial Charts”. The players need to thread the shoelace through the paper to create the constellations, this is more challenging than the previous one because the players are required to hold the aglet of the shoelace and thread it through the various holes. On this version, the “Celestial Charts” had to be adapted to accommodate the utilisation of the shoelace, for this version all the “Celestial Charts” are contained in an A4 piece of paper and are already perforated, meaning that all the components can be reused after each play.

The third variant and most challenging, was the first one to be designed and the one that inspired the name of the game, Stitch the Stars, because of the actions that the players would take in the game. During playtesting sessions, this variant was considered dangerous

for younger players because of the sharp objects utilised, such as needles and scissors, and how these small and sharp objects would constitute a choking hazard. This variant has in mind older players and the ones that wish for a bigger challenge and to further develop their fine motor skills by having to thread the needle, pierce the paper, manage the length of the thread and stitch the constellations in the “Celestial Charts”.

6.3 | Player Reception

Playtesting was an essential step throughout the development of Stitch the Stars, even with its short development process, this gave the possibility to analyse the player's feedback on the game and identify issues in the design of the game. It was necessary to create and follow an approach to keep the data collection consistent throughout the various sessions, for this it was adopted an observation approach to collect the data, meaning that for all the playtesting sessions the players would be observed while interacting with the game and taking pertinent notes about their behaviour, after the game being played the players were asked directly for feedback, this could be any opinion they had formed while being explained the rules and playing the game, and if any particular elements weren't making the game enjoyable.

The playtesters came from various sources, backgrounds and a vast age range. Stitch the Stars has been tested by friends and family, people met in board game cafes, people met during events related to board games, with a group of international students and some participants in a game development conference. During those sessions, annotations were made for later knowing which aspects of the game needed to be altered and which were properly working, as well as having notes on the direct feedback provided by the various players. For each stage of development of the game, the structure for the playtesting sessions remained the same, initially the players were taught the rules and the objective of the game alongside the narrative setting of the game. During those sessions various annotations were made to better understand the various aspects of the game, what needed further work, what was already working properly and the overall enjoyment of the players while interacting with the game, as well as the feedback provided by them.

The initial prototype was solely self-tested just to understand if the design was working how it was intended to, meaning this served just to understand if it was possible to create something playful that resembled a game with the initial concept. This was essential to validate the idea and understand what needed to be changed, even though this was a rudimentary prototype the gameplay was already enjoyable and mostly only needed to have some layout changes to better accommodate various difficulties.

After having these changes implemented in the game, it was time for it to be tested with other players and leaving the self-testing behind. The feedback obtained at this stage was that the game was enjoyable but that it needed to have additional play modes so the game is also accessible to children without having to worry about the usage of needles since those constituted a shocking hazard and it would be dangerous to provide sharp objects to them. Based on this feedback two other game modes were created to create a game that would be welcoming to a wider audience and that would allow them to work on their fine motor skills.

One of the biggest opportunities to playtest *Stitch the Stars* was during the Aalto ARTS Summer School program in late August, where it was possible to test the game with over 30 international students from various backgrounds. The overall player reception was positive, although there was some negative feedback that had come from frustrated players who weren't able to thread the needle and ended up giving up on playing even after being offered alternatives, such as playing by drawing the various constellations in pen or utilising a shoelace.

After those playtesting sessions, the game kept being tested in various locations, the game ended up gaining an overwhelmingly positive reception with an older female audience with the feedback that the action of stitching the various constellations on paper reminded them of their childhood when they did cross stitch and embroidery. The game also had some success with adults who interact with multiple people in their career due to, paraphrasing the players, it allowed them to pierce paper with a sharp object and imagine that it was people that they had encountered during the day.

An interesting note from one of the playtesting sessions was that the game could be an interesting tool to work fine motor skills with elderly people, due to being a game and not just an exercise that they would be doing and quickly lose interest. The nature of the game would also invoke a sense of nostalgia helping with keeping them engaged for longer periods, but having the possibility to draw their constellations adds the ability of adapting the game to their needs.

Overall *Stitch the Stars* gathered a majority of positive feedback and statements that the game is enjoyable and is fun to play in a group setting but also alone, that it can serve as a form of therapy due the action of stitching.

6.4 | Lessons learned with *Stitch the Stars*

With every game designed there are always some lessons to be learned, that can be shared with others or to simply serve as a reflection of the work done. Even with a short development like *Stitch the Stars* had, there are still some conclusions that can be drawn.

The illustration in the games doesn't need to be something complex and that remains untouched by the players, by giving the players the power of drawing and permanently changing the game components it can change how the game is played and the feeling evoked in them. Having the power to alter the components can make the game feel more personal to the players since they can see their actions reflected in the game, but it also puts them in the place of the designer. This was a thought that was present throughout the whole design process and the inspiration behind giving the players the possibility to create their own "Constellation Cards" and add them to the deck.

After designing two games starting strictly from the illustration it was possible to determine a tendency that the visual style of the source illustration ends up showcased in the finished product, meaning that the visual style of the game is normally the same or with small alteration but still keeping the same essence.

Designing a game doesn't need to be a complex process, it can be short and fun to design. This is a conclusion drawn since *Stitch the Stars* was designed to not reach a burnout stage while designing *Hydra's Voyage*. This leads to the observation that crafting the narrative for a game doesn't need to be serious and can be something seen as silly or simply a creative exercise. The illustration can also have a big impact on how the narrative is crafted, either serving as the inspiration to start writing or turning into an important scene/factor of the narrative.

Chapter 7 | A Different Approach to Game Design

This chapter of the dissertation is dedicated to present an alternative method to game design applied to board games with statements based on interviews with various game designers and the exercise of designing multiple games following a method where the illustration had a big role in the development.

The chapter is subdivided into two subsections, the first one is dedicated to the proposition of an alternative design method where the illustration serves as the starting point and can influence the final outcome. The second section is an analysis of this method, discussing the advantages and disadvantages.

7.1 | Proposing an Alternative Method to Board Game Design

Research and experimentation were essential steps to build a strong foundation to propose an alternative method to designing a board game. It is necessary to have an understanding of what is currently available, hence why different game design frameworks were analysed and contacting various designers that have designed games starting from the illustration or that had their development process heavily influenced by it.

In an earlier chapter various game design frameworks were analysed and it was discovered that many of them don't translate well when applied to board games due to an array of reasons, such as the medium relying solely on one of the players learning and teaching the rules, which then leads to the players being tasked with actively implement them through the play sessions. This happens due the popular frameworks such as the MDA, being thought for video games where the "players can learn to play on the fly; but boardgames do not have this leisure" (Duarte, 2015). When designing a board game it needs to be treated differently than designing a video game, so why are designers relying on "guidelines" that weren't thought out for that specific medium? This is where the need for an alternative approach to game design comes as a necessity, the proposed method does not intend to claim that it is the only correct way to design a board game but aims to showcase a different approach to game design and encourage designers to experiment with different approaches while documenting their experiments.

While reading the replies from the various game designers, who were contacted, it was possible to determine that starting the design process from the illustration is possible and can have an impact on how the game is designed. This then led to attempting creating a

method based on the gathered information and experimenting with it while applying it to the design of a new board game.

The initial step was to gather an illustration that would serve as the starting point and anchor for the whole project, having this illustration allowed us to start creating a narrative where the game would be set, starting to define what type of game it would be, and starting to think of mechanisms that would help enhance the game and create a more immersive play experience.

The second step was to write down all the ideas that appeared while analysing the illustration, from here it is necessary to organise these ideas to create a concept for a game that would be interesting to be played. Alongside this step it is useful to create some sketches of what the game could look like, this then also serves as another anchor while designing the game, since there is already a clearer vision of the direction of the game. From here the process starts being more similar to a “regular” approach to game design with the creation of the first playable prototype, playtesting, reiterating based on feedback and continuing this loop until the game starts feeling ready. During this process it might be appealing to always have a visually appealing prototype, this can be useful to come up with solutions to certain design issues and even to enhance the gameplay, but the main disadvantage to always having a visually polished prototype is that it is time-consuming and can cause attachment to the art created, wanting to further keep it so there isn’t a sense of wasted time even if it is not being beneficial to the finished product.

Once the game starts feeling ready it is time to polish the artwork and do the final rounds of playtesting before releasing the game, this last round of playtesting allows to adjust certain gameplay aspects that might still be problematic.

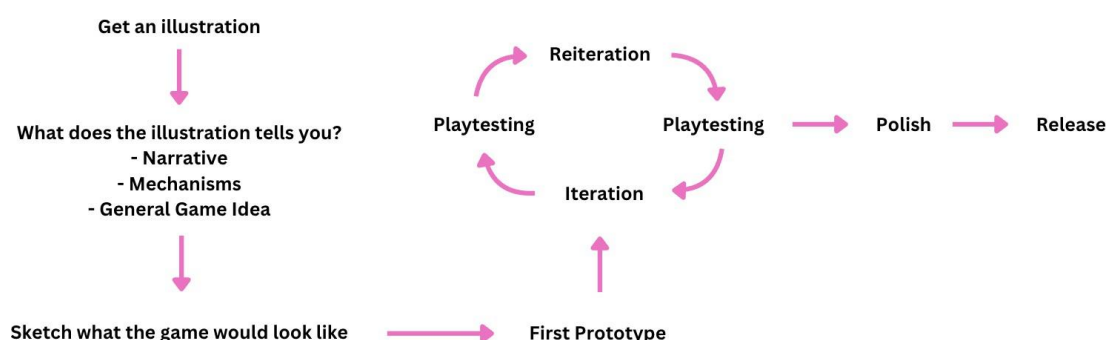


Figure 7.1 - Flowchart of the proposed alternative method to game design. Graph created by the author.

The graphic provides a visual representation of the method followed during the development of *Hydra's Voyage* and *Stitch the Stars*, which worked for the development of

those games and it is something that is going to keep being tested with the development of future games.

7.2 | An Analysis of this approach

This alternative method to game design does not aim to be a replacement for other methods or claims to be the best approach to game design, it is simply an alternative where the illustration is brought to the development stages.

To provide an analysis of the method it is necessary to acknowledge the advantages, disadvantages and the in-between aspects of it. Starting with the advantages, starting with the illustration and bringing it to the development process, it helps create a game that has cohesion between all the elements of the game, this being visuals, narrative and gameplay. By having art as a base, everything is going to revolve around it, where it's easier and more intuitive to create immersive experiences where the player can feel transported into the game world. It is possible to observe this with any of the games analysed, one example is when playing a campaign of *Sleeping Gods: Distant Skies* (Laukat, 2023), the players are transported to the game world right from the moment of unboxing and setting up the game, the various illustrations help to bring the players into that universe and it's further immersed in the game due to not having to read an extensive rulebook to start playing the game. There is a short comic, which sets the players in the narrative of the game and at the same time teaches how to play the game, as the game is played the more the players start to cheer on the characters and the situations they are put in, there aren't elements of the game that feel out of place or that they shouldn't belong in the game. Another example of this cohesion is *Hydra's Voyage* and *Stitch the Stars*, the narrative created based on the illustrations help creating a gameworld where various design aspects can lean on without feeling out of place, the illustration helped create two games where the narrative, visuals and gameplay aren't fighting against each other but that are all connected to create a more immersive game.

The main disadvantage of this method might come to game designers who don't have any illustrative skills because if they cannot create their own illustrations it isn't possible to follow this alternative method, but nowadays multiple types of technology can be utilised to help with this. The designer can use AI to generate images that can serve as a starting point if they don't have the funds to pay an illustrator in the early stages, but those designers can also attempt to form a collaboration with an artist, as was suggested by Manny Vega in his replies to the questionnaire.

One thing that is worth mentioning is the emotional attachment to the work produced, either illustration or design. This can become more prominent if the designer is also the illustrator, after designing two distinct games starting from the illustration there were some

moments where an emotional connection to ideas stopped from progressing and improving the design. There is the need to have the ability to detach from the illustrative process but also the design process to understand what is hurting the game and what is enhancing it.

This method is not the solution to all game design issues, it still requires work, it is not because the designer has started from the illustration that all the mechanics, narrative and the whole game are going to appear without having to do any work. This method still needs further research to better understand if it only works with more figurative and literal illustrations, for example, would it be possible to design a game based on a contemporary piece of art, where paintings can be a white square with a black line, or even by taking a painting from Van Gogh or Picasso.

Chapter 8 | Additional and Ongoing Work

This chapter of the dissertation is dedicated to exposing additional work that is derivative from the investigation done throughout the development of the master's dissertation, such as presentations about the topic, articles and possible workshops dedicated to applying a method of game design that has started from the illustration.

8.1 | Presentation at LeiriaTalks

During the development of this master's dissertation, surged the opportunity to expose the main research topic in a short presentation in LeiriaTalks. This ten minute presentation served as an opportunity to do a preliminary presentation on the topic of board games that have started from the illustration alongside a review of popular game design frameworks and their flaws when applied to board games.

Two games were utilised as examples of this approach, *Sleeping Gods* (Laukat, 2021) and *Scythe* (Stegmaier, 2016). These games were selected due to Laukat's being listed as both illustrator and designer for the game, upon further research it is possible to find a keynote presentation given at the "Tabletop Network" in 2018, where he briefly describes his design process compares it with a movie production due to starting with an illustration for the cover of the game, followed by writing an elevator pitch regarding the narrative of the game and then, after having all that information, start thinking about the various mechanics that are going to be present in the game. For the second game, which is the result of a collaboration between a designer and an illustrator, Stegmaier based the design and narrative of the game on the various illustrations by Jakub Rozalski, specifically the *World of 1920+* series.

Based on these examples it was possible to gather two advantages of starting the design process from the illustration, the first one being that it opens ways to create more immersive board games, and the second that the illustration can influence the narrative and the game mechanics. After these conclusions there were still presented three questions that would require further research to be possible to conclude, the first one being, if the designer also needs to be an illustrator for this approach to work. The second is, if the designer is not the illustrator, do both of them need to be equally excited about the project and involved for this approach to work? The third, and final question, what if the designer is not an illustrator nor has the funds to hire one, can this approach still be valid?

Ending the presentation with these questions allowed the generate a discussion with the audience where there was doubt the validity of this method if the designer isn't the illustrator and doesn't have a basic knowledge of illustrating, which then lead to a discussion

about the uses of artificial intelligence (AI) to generate images to serve as starting point and being utilised as placeholder art until finding an artist.

In terms of how the presentation was beneficial to the development of the dissertation, it allowed to present the research to a small audience that appeared to be engaged and interested in the topic but also served as an opportunity to develop public speaking skills that will be useful during future presentations.

8.2 | Article for the International Journal of Games and Social Impact

Following the presentation at LeiriaTalks, there was an opportunity to present the topic in a formal manner and be submitted to the International Journal of Games and Social Impact to be published in the first quarter of 2025. This paper is still currently under review.

At the time that the article was being written, game designers were being contacted to help with further advancements in the research of board games that have started from the illustration or that have been heavily influenced by it. Some of the commentary provided by the designers were included in this paper to better understand what was being discussed, this paper has some similarities with chapter four, where this approach to game design is analysed, and subsection four of chapter three of this dissertation, where various game design frameworks are discussed, but in a rough and summarised way in comparison.

Due to the paper still being under review, it isn't possible to further discuss its contents or disclose more information on its regards, but it 's still possible to do a reflection on what was done and how it was beneficial. Overall the paper itself provided an exercise to practise academic writing, which turned beneficial to the dissertation.

8.3 | More articles and Papers

During the development of the master's dissertation, it was thought to write additional articles and papers with the research developed throughout the year, to dissect this dissertation in smaller and more digestible information regarding the presented alternative to game design.

Ideally, these articles will later be submitted for publication in various journals, and other academic circles, but also attempting to publish them in other ways such as online articles on multiple platforms.

The objective of writing these articles is to disseminate the research, by presenting an alternative method to game design applied to board games by having the illustration as a starting point and the impacts it has on the development of a game.

8.4 | Game Design Workshop

One idea that surged in conversations with Micael Sousa, the advisor in the developmental process of this master's dissertation, was the possibility of creating a workshop that would serve as a practical exercise for various designers and people interested in game design.

This workshop will be divided into three different sections, the first section is a dedicated introduction to game design by quickly exposing various game design frameworks, what happens to these methods when applied to board games and what are their main issues. The second section is dedicated to presenting an alternative method to game design in which the illustration functions as the starting point of the design process and that has an influence in it throughout the design process. The third, and final section, is dedicated to implementing this proposed method in the creation of board game prototypes starting from the illustration. The illustrations utilised for this workshop would either be a collection of self-created illustrations, an assortment of AI-generated illustrations or repurposing illustrated cards from games such as Dixit (Roubira, 2008) and Mysterium Park (Nevskiy and Sidorenjo, 2020).

The objective with these workshops is to disseminate the research and the proposed alternative method to game design in a participatory way and collect direct feedback from the participants on a method to game design where the illustration has an impact on the development.

Chapter 9 | Conclusion

This dissertation reports on the development of two distinct board games in a Print-and-Play format, *Hydra's Voyage* and *Stitch the Stars*, alongside the research made to uncover an alternative method to game design where the process starts from the illustration. There are numerous conclusions that can be drawn from the year-long process of research and development relevant to this master's dissertation. There were two initial questions, if it is possible to design a board game where astronomy is applied in the mechanics, and if it is possible to design a board game starting from the illustration and what is the impact it can have throughout the development? After analysing all the collected data the answer to both of the questions is yes.

To better understand how the illustration can originate a board game and the impacts it can have through the development, lead to contacting various game designers and inviting them to participate in an interview where their design was questioned. Overall the designers stated that the illustration serves as an anchor throughout the development of the game by creating a common element between all the elements (theme, narrative, mechanics and visuals) of the game which then helps to achieve a more cohesive and immersive game. One interesting aspect of starting from the illustration is the ability to sketch out what the game would ideally look like in early stages of development, which further helps anchoring the game.

Although illustration being a central element of this alternative method to game design, the designer doesn't necessarily need to be the illustrator, there is room for collaboration with an artist and if that isn't possible in the early stages of development there are various tools available to aid designers with the generation of images to serve as a starting point. Some of the designers mentioned that using AI can be disrespectful for artists since for it to properly work needs to "steal" in order to function, so there is a preference for the use of human-made illustrations posted in platforms such as ArtStation, which designers can browse and eventually reach out to illustrators to collaborate with them.

Having the illustration as a central element during the development process can have some disadvantages such as if the same person has both the role of illustrator and designer, there can exist a necessity to hold on to produced art so it isn't seen as a waste of time or resources, but also it can be hard to discard elements when they aren't working for the game, because there can exist an emotional attachment to both the art and designed elements. This isn't something exclusive to this set-up, it can be harder to let go of produced art if the illustrator is hired since it can be seen as wasted money.

This collected information from a small and curated sample of game designers, allowed to create an alternative method to game design that was possible to validate and evolve with the development of two distinct board games, *Hydra's Voyage* and *Stitch the Stars*. This alternative method to game design doesn't intend to be a substitution to current methods, but as the name indicates, an alternative where it is possible to incorporate illustration into it. For this method the designer starts by getting an illustration which will serve as the anchor for the project, by annotating all the ideas that surge when looking at the illustration which can later be used to create a narrative, possible game mechanics and overall game ideas. Having this starting point it is possible to sketch what the game would look as a finished product, with the various components and how it would look set-up on a table, from here the first prototype can be created before entering a loop of playtesting and iteration of the game until reaching a stage where the game feels finished and can enter a production phase before being released.

One of the initial questions was if it is possible to create a board game where astronomy concepts are implemented in the mechanics and have an impact on how the game is played, and having answered the question positively it is important to explore the topic in this chapter. Astronomy has a tendency in board games to be more commonly used as a theme for the games rather than having an impact on how the game is played, to support this statement there is a study conducted by Inchingolo et al. (2024) where the top 2000 games in BGG were analysed and from the 116 games that approach astronomy only 32 games passes their selection criteria of the science and technology being real, and that the games mechanics approach astronomy at some level.

To better understand how astronomy can be applied in the mechanics of the game it was decided to create *Hydra's Voyage* with the intent of exploring how to incorporate astronomy in the mechanics of the game, alongside that to test how to design a game starting from the illustration. This game is a PnP board game where the players use celestial navigation to reach dryland before their ship deteriorates.

While designing *Hydra's Voyage* it was possible to do various various observations about the development process, one being the there is an internalised misconception that the prototype has always to be in pristine state in regards of the illustration, but that cannot be further from the truth since design and art production move at vastly different paces, so there is a necessity to find a strategy that makes the development process more sustainable. In this case was the creation of "ugly" prototypes, meaning that the prototype visuals were simplified to have minimal artwork, just enough to convey the ideas as concepts of the game. It became clear what the designers were saying when the illustration serves as an anchor for the game, since it allowed to create a narrative that enhances the mechanics and

vice-versa, and since the game was illustrated and designed by the same person it removed the stress factor of having to find a visual style for the final version of the game.

Despite how the game turned out in the end and with the mostly positive player reception there were some negative feedback towards the end of the development, which mostly came from players that refused to learn the rules by reading them, this could have been combated with an alternative way of teaching the players the game such as having a how-to video or making the rules with more visual elements. Even though these players needed to be verbally explained the game and be shown how to play the game, they provided feedback on the game which was met with some resistance from a designer perspective. This feedback ranged from the visual style to how some resources were being utilised in the game, from the perspective of a designer/illustrator it can feel like a personal attack to their skills especially when it comes from players that didn't bother understanding how the game works. It is in instances like these that there is a need to have some emotional disconnect from the art produced, the designed game and the provided feedback and analyse what is hurting the game, what is benefiting the game and what needs to be changed to enhance the experience. It is easy to become attached to these elements and hold onto them even if they aren't working in the game, one example of this on *Hydra's Voyage* is the fish resource, it is something that fit within the theme and narrative of the game but took various rounds of iteration to get to the point where it is somewhat useful for the game but it leaves the question if the game would have been better without that element in it.

Reflecting about the design process of the game leaves the question on how was the process of introducing astronomy in the game mechanics. Adapting astronomy concepts in a relevant way to the game was a challenge, especially when trying to decide on what would make the game more interesting and not just be there without any purpose. Since the source illustration for *Hydra's Voyage* was set in a small ship the first astronomy concept that could be introduced in the game was celestial navigation and applied it to the movement of the game, meaning that it would impact how the players move, from there was easier to narrow down what other elements would make sense to be present, such as the passage of time based on the season and moon cycle. From a teaching/sensibilisation standpoint the incorporation of astronomy in the mechanics was successful since the players after the game felt intrigued to learn more about celestial navigation, the various constellations and other aspects of astronomy, and from a game design perspective it was successful in the way that allowed to explore engaging ways to incorporate complex concepts in a more accessible way that kept the players engaged in the game.

Stitch the Stars was another game that was designed following the same alternative method to game design and applied astronomy, although in this case astronomy is more

present as a theme rather than a mechanic. This game initially had the sole purpose of serving as a coping mechanism with the stress of designing *Hydra's Voyage* and writing a dissertation. This game is a PnP board game where the players have to create their own celestial charts while working on their fine motor skills.

Designing a game where working fine motor skills requires thinking about how to preserve the feel that the players get when playing while addressing that different players have different levels of motor skills. Having this design challenged is what led to the decision of having three variants of the game, pen and paper, yarn/shoelace, and embroidery, each of them thought to provide the same experience to the player despite their level of comfort with their fine motor skills and still have room to challenge them. The player reception was positive in a varied age range, from children to elderly people, although the latter was where the game was more popular because it was mentioned that the action stitching was reminiscent of their childhood. Despite the positive feedback there were some players that had a negative reception to the game, where they resisted to understand how the actions of the game could help enhancing their fine motor skills and that those actions would never be useful/relevant to their lives (e.g. threading a needle and sewing). Designing a secondary where the illustration was the starting point, allowed the continuation of validation of the design method and understanding that the source illustration doesn't have to be complex to create an engaging game.

Designing two board games served two purposes, validating an alternative method to game design where the illustration serves as the starting point, and exploring how astronomy can be applied in the mechanics of a game. As it was mentioned before, *Hydra's Voyage* applies celestial navigation, constellation recognition, the moon phases and the seasons of the year, while *Stitch the Stars* is more focused on having astronomy as a theme and general pattern recognition, by taking inspiration on identifying constellations but also attempting to create various shoes in the sky utilising the stars. The implementation ended up being successful and allowed to create games that kept the players engaged throughout the gameplay, which ended with players stating that they learnt something new about astronomy and felt curiosity to research more about it. It is important to note that there wasn't a formal approach to evaluate what the players learnt during the game, even if the game was designed with the objective of being an entertainment game it doesn't invalidate the power that it can have as an educational tool. In future development stages it could be interesting to test the game to understand if it could work as a game-based learning and do proper testing on the knowledge obtained while playing the game.

9.1 | Future Works

As for future works, the main objective is to continue to expand on the work described in chapter eight, which is referent to additional work done due the development of this master's dissertation, by continuing the dissemination of the proposed alternative method to game design and providing a practical exercise to be tested.

Continuing the research by contacting more game designers and analysing additional board games, to create a bigger sample to create a stronger foundation for the research and work derivative of it. With that also comes to the refinement of the proposed alternative method to game design, where the illustration is the starting point and it has an influence on the design of the game, this can be achieved by continuing the research, as mentioned, but also by designing more games following the method. This leads to the third aspect of possible future work, continue designing games with this alternative method and documenting the process.

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Appendix 1 - Interview With Ryan Laukat

Question 1 - Could you describe your game design process in a summarised way?

Ryan Laukat: I often find myself thinking about games and game mechanics. When I have an idea, I write down a few notes in my phone or notebook. If I have more time, sometimes I sketch out what the game might look like set up on a table. At this point, I only have a vague idea of the rules, but it helps to visualize what the game could look like. Many game ideas end here, I often take this moment to paint the cover (game box art). I like to do this at an early stage, because it acts as an anchor for the whole project. I know what I'm shooting for and having that box illustration guides me when creating the story of the game, the general look, the mechanics, and the graphic design. It can be easy to get distracted and go down rabbit holes when designing a game, and having the cover art helps me remember what I had intended when I first thought of the game. At this point, I create an initial prototype, print it out, and start testing. I go through multiple prototypes, making small and sometimes large changes, until the game feels right.

Question 2 - When designing a board game, is the illustration only the starting point to inspire the narrative or it also plays an active role when coming up with mechanics and defining certain gameplay aspects?

Ryan Laukat: It can influence mechanics as well. I rarely design games around mechanics. I almost always start with a narrative situation and a piece of art. When I'm designing, I'm usually shooting for a certain feel. How do I want the players to feel when playing the game? If I want them to feel desperate or in danger, I choose mechanics focused on surviving threats and avoiding danger. If I want the players to feel smart and clever, I give them tools that let them solace puzzles in a variety of ways.

Question 3 - Do you see any flaws in starting the design from an illustration and further incorporating it into the design process?

Ryan Laukat: One of the biggest issues with designing this way is that it can be easy to get emotionally attached to something that isn't working. In game design (and many other crafted art forms), it's a vital skill to be able to cut things that aren't working. When I create a piece of art for a game, there are times when I realize that I can no longer use it in any way. Sometimes I hold onto illustrations or illustration styles for too long. Sunk cost fallacy can keep the game design from progressing because I don't want to feel like I wasted any time.

Question 4 - What is your opinion on the validity of starting the design from the illustration? Does the designer need to be an illustrator, or is it enough to have an illustrator who is equally excited by the project for it to work? This then leads to a follow-up question, if the designer doesn't have the funds to hire an illustrator, can this approach still be valid if the designer utilises stick figure drawings or AI to generate certain images to serve as the starting point?

Ryan Laukat: I don't think a game designer necessarily needs to be an illustrator to work this way. It certainly helps, but any designer can choose visual inspiration to be the anchor for the work at the start of the project. A game designer and illustrator team can certainly work collaboratively this way, and I believe this method can help the final product feel even more coherent and polished. If a designer doesn't have an illustrator early in the process, there are so many tools available to help guide the visual style of the game.

Question 5 - Do you know more designers that have a similar creative process, where the design might have started from illustration?

Ryan Laukat: I think this is somewhat rare in board game design because so many tabletop designer work like book authors; they work alone and without lots of funding or a team of people to collaborate with. Working from early illustrations is much more common in video game development, where a team of artists and designers to create the project together from the beginning.

Question 6 - Do you wish to comment or share more information regarding the purposes of our research?

Ryan Laukat: I think this is a valuable subject to research and that many game designers could benefit from it.

Appendix 2 - Interview With Jamey Stegmaier

Question 1 - Could you describe your game design process in a summarised way?

Jamey Stegmaier: I brainstorm the idea (mixing theme and mechanisms), create the initial prototype, playtest it locally and/or solo, then process the results, iterate, and repeat. If the game shows promise, repeat the playtest/process/iterate steps until the game is functional and fun. It's during this process that I typically find and start working with an artist. I think coordinate blind playtesting (for each wave, request data and detailed reports from at least 5 lead playtesters, each of whom plays the game at least 3 times). I process the playtesting data and reports, iterate, playtest it locally and/or solo; then repeat blind playtesting with other lead playtesters (repeat this process until the playtester ratings are all 8s, 9s, and 10s and I feel the game is ready). Focus on making the game as fun, functional, balanced, and intuitive as possible while also refining the rulebook. More details and steps are available here: <https://stonemaiergames.com/my-game-publishing-checklist/>

Question 2 - When designing a board game, is the illustration only the starting point to inspire the narrative or it also plays an active role when coming up with mechanics and defining certain gameplay aspects?

Jamey Stegmaier: It's both. I love designing mechanisms based on specific thematic elements, and many of those elements emerge after I visualize them. For Scythe, the art led me to making the game more about the threat of combat than actual combat. For Charterstone, the worldbuilding led to several significant mechanisms that otherwise would not have been in the game. And for an upcoming game, the artists had a lot of freedom in creating an entire planet, and aspects of their illustrations became fundamental elements of the design.

Question 3 - Do you see any flaws in starting the design from an illustration and further incorporating it into the design process?

Jamey Stegmaier: I think the biggest risk in letting illustrations impact the design is that it can loop back around the other way: The design may then require a lot of revisions to the art, which can be expensive, time-consuming, and frustrating for the artist.

Question 4 - What is your opinion on the validity of starting the design from the illustration? Does the designer need to be an illustrator, or is it enough to have an illustrator who is equally excited by the project for it to work? This then leads to a follow-up question, if the designer doesn't have the funds to hire an illustrator, can this approach still be valid if the

designer utilises stick figure drawings or AI to generate certain images to serve as the starting point?

Jamey Stegmaier: Game design and illustrative art are two completely separate skill sets—it's very rare for the same person to be equally talented in both. It also depends if a game designer is self-publishing or submitting to a publisher (for the latter, it is the publisher who is responsible for the art, not the designer). For a designer who wants to build their design based on some visual elements, I recommend looking at places like ArtStation for inspiration from the many amazing human-created illustrations there.

Question 5 - Do you know more designers that have a similar creative process, where the design might have started from illustration?

Jamey Stegmaier: I doubt I'm alone in doing this, but I'm not aware of other examples.

Question 6 - Do you wish to comment or share more information regarding the purposes of our research?

Jamey Stegmaier: For anyone looking to learn more about the game design process, I've compiled my articles and videos on the subject here: <https://stonemaiergames.com/kickstarter/how-to-design-a-tabletop-game/>

Appendix 3 - Interview With Manny Vega

Question 1 - Could you describe your game design process in a summarised way?

Manny Vega: I write down some wacky ideas, with very brief descriptions. Usually these have a hook or some kind of unique aspect that I think makes it interesting. Then I usually forget about it for a long time. At some point, I will need a design idea and go back to my list, find something that fits and work it out further. Sometimes it's because I saw some artwork that I want to make into a cool game, sometimes it's a game I played with a cool mechanic that inspires me to complete a design idea I had been holding onto. Once I have worked out a basic structure of how I imagine the game would play, I make a basic demo with whatever I have laying around just to see if it feels right and if it's not too much to keep track of. If the game passes all these steps, I will start to layout cards and assets on Tabletop Simulator and start testing powers and abilities, trying to get a solid working turn order and look for the fun. If the game gets this far, it's likely I will at least get it to a playable prototype and have real world people playing it, and start showing it to publishers.

Question 2 - When designing a board game, is the illustration only the starting point to inspire the narrative or it also plays an active role when coming up with mechanics and defining certain gameplay aspects?

Manny Vega: My style of game design leans heavily into theme and narrative because that is what I enjoy playing and making. Sometimes I have an idea and the illustrations come from a style guide I write up for the artist, and other times I am working to make the gameplay fit the narrative as much as possible. With Flamecraft I really wanted to hold on to the idea that friendly, helpful dragons are working together to make the entire village better. To me, this meant that no one player owned a dragon or a shop, they merely helped them find a place where they could be happy and everything improved. This concept, along with the artwork, guided a lot of the extra story aspects and abilities for shops and dragons. It led us to many swap and share abilities that are uncommon in games because usually you are trying to win by preventing the other players from succeeding.

Question 3 - Do you see any flaws in starting the design from an illustration and further incorporating it into the design process?

Manny Vega: The main flaw is that the artist has to be 100% on board and willing to participate. If it becomes too personal and there isn't room to shift the theme or design, then things can fall apart. I feel like this is what happens with well known licenses, where it becomes impossible to make everything work within the constraints and the game ends up

feeling generic, or worse, just bad. I have felt a similar thing with expansions and sequels because they carry so much baggage, it's often difficult to design around them and get new and interesting gameplay.

Question 4 - What is your opinion on the validity of starting the design from the illustration? Does the designer need to be an illustrator, or is it enough to have an illustrator who is equally excited by the project for it to work? This then leads to a follow-up question, if the designer doesn't have the funds to hire an illustrator, can this approach still be valid if the designer utilises stick figure drawings or AI to generate certain images to serve as the starting point?

Manny Vega: The designer doesn't have to be an illustrator for it to work, but it certainly helps. You just have to be creative in the sense of making the theme work and integrate the gameplay. As I said earlier, I really think the illustrator has to be 100% on board and excited for the game. The way I like to work is very collaborative, where we run ideas back and forth to see what resonates between me and the artist. If the artist is excited for the project, every piece will show the excitement and that translates to excitement for the players too. In fact, if the designer is also the illustrator, they run the risk of being too close to their "baby" and not seeing that some things you think are the main focus, are just a distraction for observers.

I would suggest talking to an artist first and seeing if they would be interested in a shared royalty structure. If it's just "a job" for them, you probably won't get the kind of commitment and collaboration that I feel makes a thematic game shine. You can of course still get AMAZING artwork this way, but there is a noticeable difference. I honestly can't speak to how stick figures would inspire, but plenty of designers have made and sold great games with just words on cards and colored cubes. I don't think this is the kind of game you are asking about though. As for AI, I just find the technology to be distasteful and disrespectful to creators. Until it becomes something that does not need to steal in order to function, I wouldn't touch it.

Question 5 - Do you know more designers that have a similar creative process, where the design might have started from illustration?

Manny Vega: have had a great conversation with Henry Audubon, the designer of Parks, Trails and many more. We seem to share a similar idea that having something visually stunning can lead to wonderful game designs. This was certainly true for Parks, and you can see how it influenced his later designs as well. I also know that Elf Creek is very big on the overall look and presentation of their games. HoneyBuzz is beautiful and tactile, and I know

that the idea of using shiny stones to represent globs of honey was part of the drive for pursuing the design.

Question 6 - Do you wish to comment or share more information regarding the purposes of our research?

Manny Vega: Flamecraft may have been lightning in a bottle, so I can't be sure that anything I did to tie the theme to gameplay is what really made it work or if it was purely the art. I can only say that this kind of collaboration is how I like to work, especially with talented people who are as invested as me. I would love to bring more artists into the tabletop industry, and in doing so attract a wider audience as well. I think that was key for Flamecraft, bringing in an audience of new gamers with an approachable theme and charming gameplay.

Appendix 4 - Interview With Frederik Jensen

Question 1 - Could you describe your game design process in a summarised way?

Frederik Jensen: I visited Visby on the Swedish island of Gotland summer 2023 and got interested in its history. I picked up a book about Medieval Gotland in the public library in February. I was researching to see if I could fo a story game set on Gotland.

However, when I looked at the map of Gotland divided into settings and regions, I immediately recognised that this would be playable as a boardgame. Not too simple, not too complicated.

I played Dune Imperial Uprising in January and liked the mechanics, specially I like the tactical/strategic mix you get from drawing a hand of cards and the balancing long term/short term goals. So over two weeks I developed the core of the game, thinking up ideas for cards and mechanics as I walked the dog, sketching down in Apple Notes whenever I was waiting somewhere, to pick up the kids, commuting to the city. Mapping the theme and setting to playable mechanics.

I proceeded to create a playable first draft and played a few sample games, alone and with my son. When I felt I had the idea captured, I shared it online as a print-and-play game and let it rest for a while. Then brought it when visiting a friend and ran a first external playtest with him and his friends. Receiving good feedback, I proceeded to sign up the game for the Swedish game convention, LinCon, in May. Upped the production value with custom printed cards. Ran three sessions of the game. Now I am exploring ideas to develop the game further that I got at the convention. As my core goal is to have fun creating the game, I have not committed myself to do a commercial version. I'm keeping options open though. Like to bring it to Medieval Week in Visby in August, pitch it to a publisher, bring it to more game conventions, or do a Game Crafter or Kickstarter.

Question 2 - When designing a board game, is the illustration only the starting point to inspire the narrative or it also plays an active role when coming up with mechanics and defining certain gameplay aspects?

Frederik Jensen: The map of divisions of Gotland into administrative regions was a starting point. The divisions have changed over time, there is no authoritative map. First and foremost, even if the game is historically inspired, it must be playable. I'm taking liberties with the source material to get a better gaming experience. However, deriving rules from a historical theme, when done well, also makes it easier to learn.

Question 3 - Do you see any flaws in starting the design from an illustration and further incorporating it into the design process?

Frederik Jensen: The map of divisions of Gotland into administrative regions was a starting point. The divisions have changed over time, there is no authoritative map. First and foremost, even if the game is historically inspired, it must be playable. I'm taking liberties with the source material to get a better gaming experience. However, deriving rules from a historical theme, when done well, also make it easier to learn.

Question 4 - What is your opinion on the validity of starting the design from the illustration?

Frederik Jensen: The illustration must serve as a starting point. It can capture the imagination but in the end, the goal is to create an enjoyable game.

Question 5 - Do you know more designers that have a similar creative process, where the design might have started from illustration?

Frederik Jensen: I have picked up sufficient skills to create and edit images and have not worked with an illustrator on this project. If I decide to do a commercial version, one expense to be covered is to hire a professional illustrator for the visual design.

I have not used AI drawings. I have based the playtest version on public domain images.

Question 6 - Do you wish to comment or share more information regarding the purposes of our research?

Frederik Jensen: Best of luck with your research. I hope you get to have fun and play lots of games while doing it.