Character Design: a new Process and its Application in a Trading Card Game

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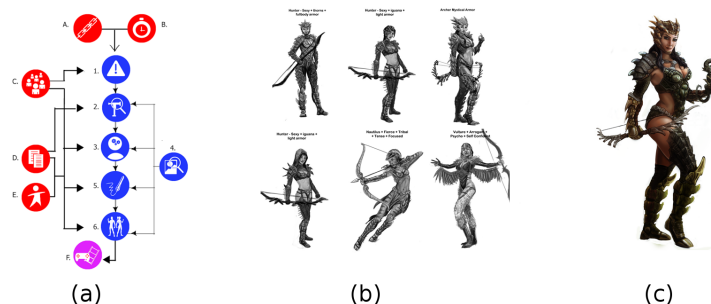Federal University of Ceará, Virtual University Institute, Brazil

Figure 1: Stages of the proposed character design process (a). Candidate sketches for exploring variations (b). In this case, the product consists in a character for a Trading Card Game (c).

ABSTRACT

Creating characters is a practice which origin is closely related to aspects of human society such as myths and religion. The creation of characters has become an important process not only for visual and literary arts but it is undoubtedly an important process for the entertainment industry. Character Design as utilized in the industry is a process that occurs alongside with other background processes. Products developed by adopting these process are bound to many specifications and different medias. Unfortunately, most developments on such processes are restricted to companies that typically display a distant or superficial relationship with the academy. This usually prevents further analysis and subsequent optimization of these processes. This work proposes a Character Design process conceived for a wide range of applications. We applied the proposed process in a case study where the final product is a set of card illustrations for a Trading Card Game prototype inspired by Brazilian myths.

Keywords: Character design, concept art, processes, trading card game.

1 INTRODUCTION

Character Design has been an important part of human society since ancient times. The advent and dissemination of myths and legends inspired society throughout centuries with characters that instigated

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the innermost feelings of people [1]. Through developing a system of storytelling, people started to create characters as transcendental beings that personify ideas which inspired and influenced the upcoming generations of human society in many different ways.

As technology advanced, a multitude of media to demonstrate and propagate ideas were created as time passed and cultures evolved. Characters of different cultures have different visual representations in different medias and, because of that, creating original character design might be very difficult [17] [14] [7]

Designing a good game or movie character requires more than only having an idea nowadays. In order to create a coherent and consistent character design an artist needs to consider the many restrictions and to develop a suitable work method. Accomplishing this task requires more than only knowing how to represent things graphically.

Unfortunately, there are few academic books and articles about Character Design. As this task is an inherent part of the industry, many artists focus on learning the processes in order to apply them to a product instead of scrutinizing these processes and spreading new developments in the academic field [4] [8]. In fact, there is plenty of informal material about design processes on the Web [1] [2] [3] while their academic counterpart is scarce or outdated.

Moreover, in the few references we could find in the present investigation, most works focus on the technique over the process [16], or solely on the concept behind the design [9], or even revolve around the product itself [10].

In this paper, we present a new character design process. These are our main contributions:

- We propose and describe, in detail, a character design process which unifies technique and concept. This process and the

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[1] http://www.gamasutra.com/

[2] http://www.ign.com/

[3] http://www.kotaku.com/

results from experimentation are shown in Figure 1.

- We demonstrate the use of the proposed process in a case study.

The remaining of this paper is organized as follows. Background definitions about character design and its underlying production processes are covered in Section 2. The proposed character design process is introduced in detailed throughout Section 3 and then it is assessed through a case study whose development occurred adopting the proposed process, as described in Section 4. Finally, conclusions about this work and its future research opportunities are discussed in Section 5.

2 BACKGROUND

Historically, the human mind tries to fill the blank spaces of reality with the fantastic and the supernatural [14] [1]. Therefore, myths were created with the purpose to explain natural phenomenon or human condition and the myths ended up becoming a part of society, creating traditions and festivals. These cultural elements became stories that were passed from one generation to another, creating what William J. Thorns, under the pseudonym of Ambrose Merton, called folk-lore, the knowledge of the people [13].

The influence of the supernatural in the human society modeled the way people act and live. In no time, monsters and gods that once were in temples and forests migrated to video games and movies, which helped to popularize the various legends and mythologies around the world [7] [14].

2.1 Creating Stories

Pagan stories suffered big losses due to competition with the dominant religions at the time and also ignorance, but arts have encountered a way to save some aspects from pagan religions. On the twentieth century, the entertainment industry rises with great books, movies and specially games productions and many of those get mythological context and aesthetics, like the modern game *God of War®* or the books, movies and games about *Middle Earth* [6] [12] [2].

Stories that inspire people, however, are not made without an element which people can relate to. This element is commonly a character. According to Bartlett [1], gods and goddesses described in myths are a representation of feelings and situations that people can correlate to. Personificating a concept turns the divine understandable and close to humanity.

Nowadays, reaching the divine is not the main focus of most stories, but the fantastical element still resides there. This element is used to enhance the product attractiveness for a target audience [12]. Clever usage of archetypes for constructing characters that are both consistent and coherent also helps to increase the products appeal for the general public [3].

Although video games were not the sole entertainment form that contributed to spread myths around the world. In 1993, the first Trading Card Games (TCGs) appeared, mostly due to the company *The Wizards of the Coast*, which was one of the pioneers in the TCG industry by publishing the iconic title *Magic: The Gathering* that became popular worldwide. In 1999, the same company published *Pokemon - Trading Card Game*, which consolidate the success of TCGs on the market [5].

Various mythologies and cultures were spread worldwide through different games and movies inspired by their stories. However, some cultures naturally stood out and such highlight ended up casting a shadow over other cultures. For example, despite being fulfilled with fascinating myths and legends, the Brazilian culture is still unknown to most people around the world and even the country itself.

Attempts to popularize Brazilian legends and myths rarely succeeded. It is observed that the representations of those cultural traits

are not accurate and, moreover, productions are mostly targeting children as their audience. This is noticed in the TV Show *Sítio do Picapau Amarelo*, produced in 2001. However, even on successful attempts to represent and promote Brazilian folklore, the character design process is clearly far from being fully explored.

Comprehension about the underlying concepts that support the product and what techniques are used to create the final product play a key role in understanding what is character design and why it is important for game development.

2.2 Concept Art

A draft composed by a storyline and an initial concept of how the product will be are usually created as the first step of the game development process. From those early ideas it comes what is known as *Concept Art* or *Concept Design*. It is on this step where a myriad of possibilities for the final aesthetic aspects of a game are produced, chosen and tuned [15].

Concept Art is the type of art which main focus is to represent an idea graphically in order to help the development of a product. [Concept art is the] art capable of translate or sell an idea, capable of represent it in a way that a story can be read [19]. Concept Art involves the creation of characters, environments and stories that help to demonstrate how that idea could be implemented and integrated to the final product. Dozens of ideas and rough sketches are typically made focusing diversity and quantity to obtain a single satisfactory result, for example. Therefore, it is clear that this task can benefit from adopting an adequate development process given the enormous effort necessary to accomplish it.
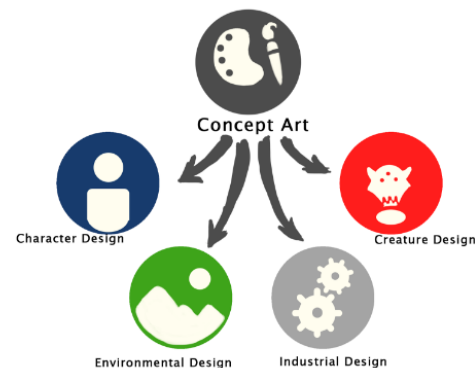

Figure 2: Concept Art and its four main areas, considering the work developed by visual artists.

According to Takahashi e Andreo [15], concept art involves different types of development, such as development of characters, accessories, and environments. Those different types of design inserted on concept art can be separated in four main areas: Character Design, Creature Design, Environmental Design, and Industrial Design. These are depicted in Figure 2.

Due to the existence of a handful of other design fields that are well known, such as Costume Design and Sound Design, this division considers the products conceived by visual artists as it is also commonly observed in a multitude of both job descriptions [4] and artists blogs and portfolios [5] [6] [7].

When designing a product, artists explore different possibilities in order to make sure that the most effective and efficient choices are being made. Exploring the possibilities requires knowledge

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[4] https://www.artstation.com/jobs/gNo
[5] http://www.raphael-lacoste.com/
[6] http://andrewdoma.blogspot.com.br/
[7] http://www.robotpencil.org/

about different areas. Although there are no real products being physically produced, artists need to make all the elements in the design look as believable and compelling as possible for the general public. Therefore, the four design areas within concept art summarize the requirements for creating realistically designs applied to the elements within the movie or game undergoing a production process.

2.3 Character Design

The area inside Concept Art that concerns the creation of characters is known as Character Design. It is through the Character Design that physical and psychological characteristics are presented, giving the character depth and making it connect with audience [14] [8]. In order to achieve a satisfactory result, a character designer needs to do more than draw and paint a beautiful image.

According to Bryan Tillman [17] what makes a good character design is the combination of story, narrative, archetypes, shapes, silhouettes and aesthetics. This combination gives the character being created more than just a good look: this gives it life in order to convince an audience and get their approval.

From the development process, character design is composed of several stages connected to each other. Creating a character is the same as create a living being with feelings, history, dreams, personality etc. Because of that, the artist has two different general approaches to create a character. One is linked to the story and psychological aspects of the character, while the other is focused on the visual composition of the character. Seegmiller [14] refers to the former approach as Storytelling while Tillman [17] refers to the latter as Aesthetics. Both aspects are important to create a coherent and consistent character once understanding how the character acts and how it looks like, will facilitate the creation of several sketches and possibilities [8] [7]. By doing so, the artist can produce faster and more accurately than when they only focus on a single task. Focusing only on the Storytelling approach in a product that needs to be visual will not lead the artist further or faster, while focusing only on Aesthetics will turn the character overly shallow.

2.4 Character Design Processes

Character Design is composed of different stages that facilitate the efficient creation of characters. The process applied in this paper requires a considerable amount of creativity from the artist and that might lead to stressful situations that can prejudice the project. Having an specific plan of how to work will not only increase the productivity, it will also decrease the level of frustration [14]. It is worthy to understand how stressful it can be for the artist when she is working for a company or a client which impose hard deadlines as well as various requirements and restrictions.

Seegmiller [14] presents a character design process composed of five iterative steps: (1) Problem Identification, (2) Analysis and Simplification of the Problem in which ideas are generated, (3) Choose the Best Ideas, (4) Drawing of the Character, and (5) Evaluating the Results. Although these steps are logically correct and consistent, the actual steps applied in the process may vary from artist to artist and these may also change according to the project. Seegmiller also states that following the 5 steps, even modified, is almost certain that the design will be successful.

Bryan Tillman [17] describes Character Design as a combination of different elements. These elements are the psychological and physical aspects of the character and the story that revolves around it. The author separates Character Design into Archetypes, Story, Originality, Shapes and Forms, Aesthetics, and the Wow Factor. Tillman also emphasizes how using references and thinking about the target audience are important to create a good character design.

The steps proposed by Seegmiller comprise a work method, while Tillman, in his turn, explores the conceptual part of the process. Both approaches are of uttermost interest for practitioners as

these can lead to results in a more predictable fashion. However, we advocate that there is room to improve those Character Design processes. In short, we strive for a unified approach for Character Design, referring to it as a process that combines appealing features from both approaches presented by these authors.

3 PROPOSED CHARACTER DESIGN PROCESS

During the creation of a product, there are many stages of development. It is during the first stage, when the concept of the whole product is being created, that Concept Art takes place [15]. The visual designs of such product are obtained throughout Concept Art and they affect directly all the other production stages.

It is important to understand that Character Design refers to an idea instead of a style or aesthetic. Some artists use the cartoon art style to demonstrate emotions more clearly in characters because this specific style is based on exaggerating features and expressions making them easier to be visually perceived. However, character design is not bound to this art style. Moreover, an adequate Character Design *process* requires flexibility and has different stages or methods that may vary from artist to artist according to the projects requirements.

For instance, let's examine character design applied to animations. As described in InformAnimation IP Handbook 2011 (p.109) [18], the process of Character Design is divided into three stages: Research and Development, Finalized Visual Design and Defining the Performance. Each stage focus on what should be produced for a specific part of the project. Furthermore, this process ends up being mechanized. If the reader is not careful enough, he or she might not understand all mechanisms and processes comprising the inner working of this process.

In order to present a method that works in different situations, we took the 5 steps proposed by Seegmiller [14], and we expanded them to be as inclusive and flexible as possible by also considering insights from the process proposed by Tillman [17]. For that to come true, all processes that restrict and mold a game or movie story need to be understood. Nonetheless, the Character Design as we propose works with two different types of processes. Background Processes are *restrictive* processes, they define what course the design should follow in order to accomplish a satisfactory result in accordance with the script or story previously defined. Foreground Processes, in their turn, refer to the artists perspectives, their work method and ability to work under restrictions.

Having that in mind, 6 steps were defined for the foreground process or Character Design: (1) Identification and Analysis of the problem, (2) Conceptual Research - textual references, (3) Defining the Characters psychological aspects and (4) possible appearances by means of Imagetic Research, (6) Sketching the Characters, (6) Rendering the best sketches. It is expected that coherent and consistent characters will come out after following these steps . As for the background processes we have 6 elements relating to the foreground steps: (A) Infrastructure, (B) Time, (C) Audience, (D) Story, (E) Aesthetics, (F) Media. This is depicted by Figure 3.

3.1 Background Processes

Development of modern products involves different stages and a handful of professionals. In products that involve the creation of a story it is commonly required to design characters for that particular product. A professional character designer usually works with a team of professionals of different sectors of the company in order to understand the needs of each sector [3] [9]. Unfortunately, this kind of reality does not apply to every situation. When there is not a proper communication among the development team, all people involved might be in for a long and stressful project or it would be a very short relationship [14].

Be it a personal project or a project in a company, creative artists must understand that the project is not free from restraints. These

■ 1. Identification and Analysis of the problem
■ 2. Conceptual Research - textual references
■ 3. Defining Character's psychological aspects
■ 4. Imagetic Research - visual references
■ 5. Sketching the Characters
■ 6. Rendering the best sketches

■ A. Infrastructure
■ B. Time
■ C. Audience
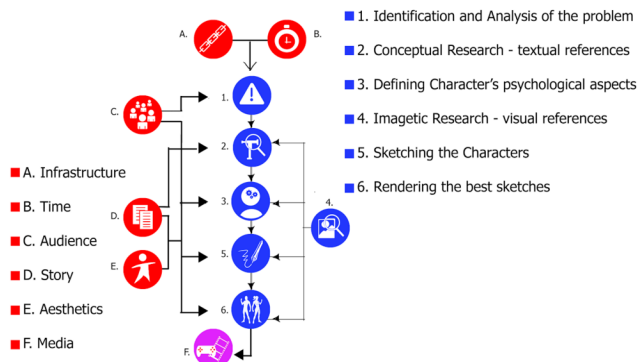■ D. Story
■ E. Aesthetics
■ F. Media

Figure 3: The proposed character design process considers two main aspects: Foreground processes that obey restrictions posed by Background processes. This setup gives artists a solid work method that helps fitting their artwork into a product.

restraints affect directly on the design of the character in order to induce the artist to create a design that gracefully fits to the final product. Nonetheless, these restrictions operate in the background of any product development, hence the choice to classify them as *Background Processes*.

Background and Foreground processes are intrinsically interconnected since the first processes offer the base for the latter creating guidelines followed by the artists. Therefore, such character design process strongly depends on the Background Processes because they mold what should enter or not on the final version of the product. This avoids unnecessary development that drifts away from the project's goals.

In order to compose a good character whose design is coherent, consistent and matches the purpose of a project, an artist must understand a number of different aspects of the project, in both physical and conceptual aspects. Physical aspects are related to the work environment and technology limitation, while Conceptual aspects relate to the abstract aspects that concern the product such as story, audience, art style, etc. These elements will be referred as *briefing*.

Seegmiller [14] and Tillman [17] point several questions that an artist should think about when coming up with a design. Although both authors have a different approach, they point out relevant topics for a Character Design in regards of the background processes.

The Briefing consists on the combination of a series of questions envisioning the overall definition of the product being developed. It takes in consideration the conceptual aspects divided into Story, Audience and Aesthetics, described in the following manner.

3.1.1 Conceptual Aspects

Story. The story element provides vital information that gives depth to the character and define its motivations. Throughout the story is that the character gains more experience and discover valuable information that helps it on its goals. The element Story involves not only the narrative but it also involves the scenario the revolves the characters. Nonetheless, the element Story establishes the characters motivations and profile provided by the narrative and the characters visual aspects provided by the scenario. Deviate from the story breaks the character cohesiveness within the project.

Audience. One important requirement for creating a character is knowing to whom it will have to appeal [14]. The audience is the public that consumes and support a certain type of product or idea. However, the character designer does not need to appease only the final public. The artist must design characters that satisfy the Creative Directors, Writers, Lead Artists and whoever is leading

the project. This way, the element Audience relates not only to the public but also to the project's producers.

Aesthetics. According to Tillman, the public looks for an appealing design. Aesthetics is the element that provide guidelines to compose an appealing character design. Per definition, aesthetics is associated with beauty, art and taste [17]. Therefore, it is translated as the element inside the project that defines what art style should be applied in the final design. Usually, this parameter is created by Lead Concept Artists and the Art Directors, if the artist is working for a company.

3.1.2 Physical Restraints

Infrastructure. Artists are deeply bound to their work environment. From the tools to the co-workers, every aspect of the ambient the artist is inserted in counts. The technology used in the project dictates until where the artist can go with complex designs. Not all computers have enough RAM memory or video memory to support larger and detailed files. Also, Seegmiller [14] points out that Character Designers work with 3D Modelers, Animators and Programmers, and these professionals work within limitations to make the design presented by the Concept Artists appear in the final product. Another element that still constrains the design and creativity is the budget of the project. Its valid to remember that a professional character designer does not work for free, and the company needs to profit out of the product.

Time. Projects do not last forever, so the artist is bound to a deadline. The time is defined by the scope of the project, the quality that is expected, and the budget. Time probably defines how an artist will design a character, technique wise, more than other constraints. In the industry, time is money. If the artist doesnt deliver the concept in time, it might cost a lot for the company and the artists themselves.

Media. Products that make use of characters and storytelling are usually a game, a movie, or a comic book or a product that is related to one or more of them. Furthermore, these categories utilize different media to host the final product. The element Media is the parameter that defines the format in which the product will be published. The actual design may change drastically depending on the format.

3.2 Foreground Processes

Character Designers have different work methods to solve the same problem. In the process of exchanging information that was in a text or script to a graphic media, tons of ideas and sketches are produced [2] [8]. The proposal of five steps by Seegmiller[14] for creating a good character design assumes that work methods change depending on the situation and the artist. Usually, artists that work in the industry do not document their processes, and for this reason, there are not many materials regarding this matter. Nonetheless, the lack of proper documentation has proved to be a great barrier for artists looking to have a better understanding of the Character Design process.

Having that in mind, we propose a process that both modifies the five steps proposed by Seegmiller and combines them with the conceptual approach of Tillman, while focusing on the application of the method instead of just explaining separated aspects of the process. Takahashi and Andreo [15] present techniques that can be used to create a character and different aspects that are related to concept art and character design. However, actually, it is hard to find proper material that gathers the different elements that compose the Character Design and demonstrate or talk about how to combine technique and concept.

Designing a character requires more than technique: it requires learning. The process described on this paper offer a viewpoint where technique and knowledge are combined in a cycle of learning experience. Through this cycle, artists can improve their profes-

sional skills and the consistency and cohesiveness of their designs. Using the five steps proposed by Seegmiller as a guideline, we divided the process in six iterative steps: Identification and Analysis of the problem, Conceptual Research - textual references, Defining the Characters psychological aspects and possible appearances, Sketching the Characters, Rendering the best sketches.

3.2.1 Identification and Analysis of the problem

As the name suggests, the first stage consists on identifying and understanding a problem that corresponds to the requirements of the character that the artist must understand in order to design it. It is common that people rush headfirst into creating a design without understanding the concept of it, and as result, the final design is flawed and inconsistent [14]. Tillman [17] also states that, by creating a character without story or without knowing the basic requirements, the artist will have to go back and redesign it from scratch. If this situation is applied in the context of the industry, time cannot be wasted and such reckless behaviour would not be accepted.

Seegmiller segments this step into two different sub-steps, identifying and understanding the problem and analyzing the problem. The former concerns with the general understanding of the question at hands, while the latter concerns about further researching and a breakdown of the elements in manageable pieces. Both steps are undeniably fundamental for composing the bigger picture, the project. On this paper, however, we decided to put both steps under the same stage. Our objective is to describe a method instead of giving an explanation.

To identify what the problem is and to further analyse it, the artist needs to understand the conditions that are given to her. This problem usually is the final objective that needs to be fulfilled. A character creation must occur within certain parameters to influence a certain audience according to a certain art style. Therefore, the artist must bear in mind that the real objective is to understand and work within the limitations given by the project managers and creative directors. It is in this stage where the artist becomes aware of the background processes that will surround the project.

The character designer will analyse each topic and specification given to him or her in order to get a better understanding what is expected from his or her artwork. The artist must read what is being required by each element of the background processes, then the artist will have a better understanding of the work environment, the teammates, the budget, the deadlines of the project, the art style required, the story and specifications of the characters and the media the character will be released. Based on that analysis, the artist will develop an efficient and creative work method to construct a suitable character design. The creativity must be always pushed far, especially with todays technology.

3.2.2 Conceptual Research - textual references

As soon as the artists finish planning their work method, they start to research what they can about everything related to the character. From simple texts on blogs to historical documents, every piece of information that might give the artists any insight to design the character is investigated. But most importantly, the artists need to have focus. Nonetheless, character designers read the story developed by the writers once. Through the script is that the artists find their way to research with more focus. Absorbing a great quantity of information might not always be helpful.

The use of references to build a character is extremely important [17]. References are a crucial aspect, and should not be taken lightly, especially when these references are textual. Legends and fables were created having a real story as basis, and the myths are also a way to understand the reality [1]. During many centuries, stories were told and written, leaving the construction of the character for the imagination of the audience. Now, thanks to diverse mechanisms that allow stories to be represented visually, the audience

does not have to play the role of character designer anymore [14]. Although, the audience have their own perception of the character, so the artists must always take that into consideration. Moreover, the story is still there, under the many layers of graphics and visual effects, guiding the actions and events.

A written story still holds the keys to trigger our imagination. This stimulus facilitate the exploration of different designs and possibilities. On the other hand, manuscripts and books also provide to the artists some aspects of the real world and its artifacts that can be used in the product. Using both aspects of the written media, a character designer has basis and confidence enough to create a character that works within the limitations and that correlates with the audience. A concept artist mainly work with concepts, therefore, Character Designers must know how to transmit ideas through their designs.

3.2.3 Defining a Character - psychological aspects and role

A character is a person. Even though this sentence might sound strange, it is the simplest way to understand what a character is. Characters possess unique characteristics and a story of their own, with memories, accomplishments and regrets. Characters are complex to design because they are similar to living sentient beings, even though, they are designed to fulfill a role in a specific context.

At this stage, the characters personality is constructed and will define the characters appearance. It is extremely important to point out that, from this stage onwards, the constraints will vary accordingly with the context and they will have a major role on each stage.

Characters are the personification of ideas which usually carry out a message. These ideas manifests through a series of aspects such as the character way of talking or how the character dresses and how it behaves under certain circumstances. Tillman [17] refer to these specific traits as archetypes. Archetypes are characteristics which people can easily relate to and understand. Tillman presents six types of archetypes: hero, shadow, fool, animus/anima, mentor, trickster. They represent fragments of human personality traits. Using archetypes is highly recommended to construct the base of a character design. However, a character might be more complex and composed by more than only one archetype.

It is important to add human feelings and emotions to a character in order to improve the credibility on the design. When developing the psychological aspects of a character, the artist has to focus on what is the role of that character in the product and within the storyline. At this point the artist have reached a connection between the story, the media and the audience. The character must fulfill its role in the story at the same that time it must appeal to the audience, and it must be suitable for the media it is inserted on.

The element Story influences the character in two different ways. One is through the story of the character itself, and the other one is through the story of the world. A narrative involves the construction of a world or scenario where characters are inserted and interact among themselves. These interactions are what build a character personality, while the world defines the physical aspects of the character. Personality affects how the character behaves, its posture, its relationships, its goals, its motivations etc. The world defines why the character wears a given type of clothes, its body type, the physical qualities of the character in general.

The element audience, on the other hand, defines what art style and tone the character should be. When an artist is working on a project, whether it is a personal project, he or she will be creating a product for a certain public. When an artist works for a company, other professionals will be dealing with what the audience wants. It is through an analysis of the audience that the tone of the story is adjusted, and because of that, the tone of the character itself will change.

The construction of a character' psyche must also obey to the rules of the media it will be published on. While in movies artists

create full characters that can inspire people, characters that people can relate to their ideas or story, in games we have three different types that must help the gameplay and story [7]. *Avatar* is a character usually presented in first-person that displays little to no depth in order to not disrupt the idea that the player must assume the role of filling the characters role. *Actor* is the denomination for third person view characters, which presents enough information to stand out as a character without disturbing the player. Finally, Non-Playable Characters, require full character design if they have an important role in the story.

Designing a characters mind is a difficult task in which it is necessary to fulfill various requirements. Consequently, character designers need to understand many subjects and research a lot before coming up with a visual for the character. Also, it is important to have in mind that this stage consumes time, nonetheless the artist must manage well the time thats being spent in which stage.

3.2.4 Imagetic Research - Visual References

Artists usually tend to think in a graphical fashion. While having ideas for the characters personality, artists usually visualize how the characters would look like, what type of materials should be used, how would be the silhouette of the character, among other things. However, remembering every texture and pattern is really hard. Left alone human and animal anatomies [17]. Artists actually work within a time frame, so if they were to learn how to designing certain material or muscle or if they were to design a material without knowing it, artists would take more time than they should. It would cost the company and the artist money. In order to reduce time and conclude a work with good quality, artist use images for reference.

Imagetic references are images that contain patterns, shapes, silhouettes, materials, constructs, pieces, anatomy references, and any other type of graphic recording of a element that can be used for inspiration. Using imagetic references serve not only for reproducing materials but they also stimulate the creativity of the artist. Some people end up being used by the reference instead of using the reference. Also, some people believe that using reference is cheating [17]. Both cases happens because people do not understand when and how using a reference is welcome. References are a tool to help the artist and they are never to be used as a guideline for the final design. If the former happens, the artist will be just creating a copy of an image.

On the other hand, a character possesses an anatomy that may vary according to the species it belongs to. Moreover, a character usually wears clothes and accessories, it might have scars, tattoos or other marks over its body. Using references help the artist to design the character faster. There are different ways to use references in a character design or concept art, so most of those are for materials, lighting and composition. Also, it is a valid method to use parts of the reference images on the design to compose different parts of it. The major problem to solve in this case regards time. In short, as long as the final design is not a copy of an image, there is no problem utilizing references freely.

3.2.5 Sketching the Character

The Sketching stage is what summarize the concept art. For a reader, it is not a hard task to visualize and draw a character of the book using only his or her imagination. Be as it may, drawing a character is fairly easy. The tricky part lies on how good the character was drew. The good aspect is actually how coherent and consistent that design is. Even a professional character designer needs to draw many sketches until she has a few drawings good enough to polish them and turn them into a final design.

Sketches consist of quick drawings commonly used to practice. It is through sketches that artists can improve ability to transmit ideas more clearly [11] [15]. Sketches help the artist to improve

their creative skills and to come closer of a solution. The many drawings produced are tests in order to see how an idea turns out when represented graphically. From analysing the sketches, artists and creative directors can understand what works and what does not.

Although sketches are similar to drafts, when applied onto the context of the industry, sketches show a certain level of finishing. It is important to have a clear design, where all elements are showing up. Sketches save time and don not affect negatively the production line. Hundreds of sketches are made during the development of a typical game or movie in the industry, and each sketch represents an idea that might or might not work in the game. That is the important part of this stage: sketches allow the character designer to add ideas and elements without worrying about constraints. Artist clearly still do have restrictions on what she should put on, however the way the artist decides to convey that ideas in sketches is totally up to her.

Character Design, as well Concept Art, is based on the production of ideas. Therefore, learning how to sketch fast and detailed enough is a skill necessary for a professional on the area. Sketches must translate the principal characteristics established from the story into a simple 2D drawing, composed by lines and simple shading. Most elements must be flat and the line work must show the principal characteristics, such as main equipment, marks, clothing etc. Also, the overall silhouette must pass the idea of who is the character. Finding a strong and remarkable overall design is the objective of this stage. The drawings should be rough and yet clear enough to be understood. Colors are not necessarily used in this stage, although their use are not prohibited. Another helpful insight for designing a character consists on writing, above the character, its main characteristics that are being explored on the design.

3.2.6 Rendering the Character

At the end of the Sketch stage, the best sketches are selected to be further polished in the Rendering stage. Render, as used in this paper, refers to the action of depicting or representing an idea graphically. It is expected a good-quality depiction from the artist, therefore in this stage designers start to add details and color to the best sketches.

Rendering stage is commonly confused with Illustration. Takahashi e Andreo [15] argue that the essence of illustration is communicating a thought: illustrations are rendered images focused on transmitting a message. Commonly, illustrations depict more than only the character itself, because some background landscape and stylized lighting is also displayed in a typical case. Promotional Art is also usually confused with Concept Art. However, Promotional Art are images created with the sole purpose of selling a product. This type of art sometimes is made by polishing an illustration to a real concept art image.

Not all images created on the rendering stage have proper texturing and outstanding visuals. Concept Art is a process within the industry. Artists do not have the luxury to finish every single image because through the concept art they already passed the idea in terms of their designs. Time is one of the critical constraints on this stage. Due to this, images have to be produced quickly so the other professionals can do their jobs and finish the product within the schedule.

Character Designers' works often will be applied to a product that will not directly require the produced images. These images are just a reference for other professionals use them to create the elements present in the final version. For example, 3D Modelers need the characters concepts in order to handcraft enthralling meshes for the game. Consequently, modelers will need a design which can tell them how is the character appearance overall, what equipment and clothes the character wears, what are the materials of each prop, among other technical aspects.

Rendering a character takes in consideration different techniques

and the use of various elements such as color and lighting. The designs must present a composition that shows balance and harmony. Adding too much details will pollute the design and its probably going to confuse the audience, making them dislike the character. It is important to leave some breathable areas within the design, so the main interesting areas will pop up. Another thing to worry about while creating a character design is the negative spaces and how they work to make the character silhouette interesting. During all process, the designer shall revise the characters guidelines (story, audience, aesthetics) so there will be no inconsistencies within the design.

The use of colors and light defines the volume and materials throughout the design. Colors come from reflected light, therefore they act as a delimitation for the materials and volumes present in nature. Effective coloring will bring to light technical aspects such as the opacity and reflectiveness of the material, the weight of the equipment, the textures of each element. Moreover, a shading also provides a feeling of who the character is. The color used to compose the character also influences on how the audience will perceive the character and its role in the story [8] [7] [17].

The constant use of reference solves most of the problems a character designer might encounter along its work. It is not necessary to use references only as guide and try to render the character by hand. Technology allow us to use tools for picking the colors, selecting areas of images and using them in the character design, create textures to cover big areas, among other possibilities. Adopting tools that speed up the construction of the design is fundamental for meeting deadlines. Character Designers are professionals that work for companies in order to obtain money in exchange for creating outstanding characters. The cohesiveness and consistency of the characters created will depend on how the artist follow the steps proposed herein and apply the techniques.

3.3 Practical Considerations

After going through the proposed Character Designer process, the artist should have strong, coherent and consistent designs that obey restrictions. Usually, the characters concepts will be revised by the creative directors and eventually reworked before receiving a final approval. The designs will them move forward to next team of professionals to be converted in a format suitable for application into the final product. The concept art is the basis for the other areas and if the designs are not satisfying enough, this could affect the entire line of production.

4 STUDY CASE

Evaluating the validity of a creative process is a difficult task. Due to the lack of an extensive academic documentation, obtaining an evaluation method for character design processes may pose as a matter of opinion. The process proposed by Seegmiller's [14] adopts *Evaluating Results* as the final step, but the evaluation turns out to be performed according with the satisfaction of the client that may vary depending on many factors. It was proposed to apply the method into a product, and to evaluate results according with the product's specifications. In order to showcase how flexible the proposed process can be, we decided to apply it in the development of a Trading Card Game which utilize Brazilian myths as cards.

TCGs combine the collectible aspect of cards as physical objects and strategy games [5]. *The Base Ball Game*, published in 1904 by The Allegheny Card Co., is considered to be the first TCG. However, the genre only achieved success in 1993 with *Magic: The Gathering* ®published by Wizards of the Coast. The initial response to the game was unexpectedly good, and the company decided to continue its production. This accomplishment marked a change in the hobby market since many players started to buy TCGs instead of the popular statuettes used in RPG boards.

4.1 Prototype TCG

The Legendary Trinity TCG was created in order to demonstrate the process of Character Design can be used in different medias and genres. The proposed games theme is inspired by Brazilian mythology and it has a more realistic and serious approach for card illustrations. Through research about Brazilian folklore, valuable information was gathered about the fantastic beings and the legends origins.

Brazilian folklore is rich in stories of fantastic beings that ruled the jungle and the dark corners of cities. Unfortunately, most of these stories were lost as time passed by, remaining only the foreigner version of these myths or the child version of them, as observed in the TV show *Stio do Pica Pau Amarelo*. Although this show is, to a certain degree, responsible for preserving Brazilian legends, it ended up popularizing a version of the legends that are far from their original meanings. This observation supports both the importance and the challenge behind testing the process proposed in this paper by creating a TCG whose universe is inhabited by characters from Brazilian myths.

4.2 Applying the Character Design process

The process proposed by this article, observed in Figure 3, separates the Character Design into Background and Foreground processes. The entire process was evaluated by a solo artist working in this production. This peculiar experimental setup provided for a broader and deeper observation about how the work flows in contrast to larger and more uncontrolled teams.

4.2.1 Background Processes

As discussed, Background processes offer the guidelines for the final design. Therefore, we defined the conceptual and physical constraints applicable in the context of the prototype TCG. These are listed below:

- **Infrastructure:** Illustrations must be designed digitally, using adequate software to produce high quality images.

- **Time:** The established time was the due date of the submission of this paper.

- **Audience:** The audience was identified as teenagers and adults, comprising people that are at least 16 years old.

- **Story:** In a dystopian dying Earth, different factions struggle to survive while fighting among themselves. With the discovery of a portal that connects this world to another one with vast natural resources, these factions start a war to decide who will rule the new world. In this war, battles are fought by summoning creatures of immense power.

- **Aesthetics:** The TCG follows a realistic art style similar to *Magic: The Gathering*®.

- **Media:** Print media, i.e., trading cards.

4.2.2 Foreground Processes

After having the Background processes defined, we start to work on the Foreground Processes, which corresponds to the character design itself. It is valid to note that the process is meant to be efficient and to save time. Therefore, the steps are performed quicker and the explanation about them are also shorter:

- **Identification and Analysis of the problem:** The problem in this case is closely related to the media adopted for releasing the product into. Trading cards are small pieces and the characters must appear in a visible, clearly understandable way in these the cards. Also, it is needed to create a visual that can appeal to the public in order to promote the Brazilian mythology.

- **Conceptual Research:** Brazilian mythology was vast, full of creatures of great power that protected nature. Unfortunately, this mythology was oral with almost no written records. Due to time and insertion of different cultures, most of the fantastic creatures had their story distorted, changed. Luiz da Camara Cascudo was one of the pioneers in deciding to catalogue Brazilian myths. In his pioneer work *Geografia dos Mitos Brasileiros* (1947), the author describes several myths in an attempt to preserve the origin of those stories. We created our characters inspired by information found on his catalogue and in his detailed description of the characters in those legends. This will make the characters look more serious and convincing.

- **Defining Character' psychological aspects:** Characters' psychological traits as depicted on cards need to portray their importance for the game. Cards have different abilities and strategies that are connected to features from characters they display. Therefore, in a TCG, the characters themselves are important to express the function they represent. Moreover, the collectible aspect that the card possess allows the illustration to aggregate value into the final product while an artwork collection. Therefore, the chosen legends were based on their popularity and abilities portrayed in the actual mythology. Various entities like Saci, Tupã, Iara, Werewolf and Curupira were considered within this step.

- **Imagetic Research:** Since myths are depicted as sentient creatures on the TCG, our research was focused on animals that possess similar features and behaviors to the ones described on the myths' stories.

- **Sketching the Characters:** Sketches were developed in order to portray the personality and and physical traits of the inspiring characters in a readable way. Additionally, we tried to preserve the earliest known aspects of these myths. This can be observed in Figure 4.

- **Rendering the Characters:** As observed, the sketches best fitting to the project needs were chosen to be polished. This allowed them to become suitable for insertion into the TCG cards, as shown in Figures 5 and 6.

4.3 Results and Discussion

The process helped to achieve eligible results. As observed in Figure 5, the Saci is a combination of furtive animals, such as monkey and the *tapera naevia*. For being an alien deity, concepts of Tupã are depicted as an unnatural being (Figure 4). The Curupira is famous for tricking hunters, therefore the chameleon was a perfect match to this furtive creature in Figure 6.
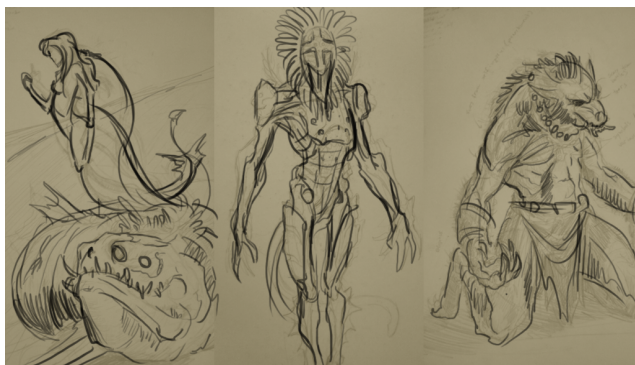
Figure 4: Sketches for Iara, Tupã and Werewolf before filtering.

Figure 5: Final render of the Saci, as a sarcastical thief: this explains the many accessories detailing this render.

The proposed process proved itself well-defined in the sense that it allowed for developing characters that are effectively coherent and consistent for application in the game. In fact, despite subjective interpretations, the process led to the core building blocks necessary to give shape for characters that are solid from many perspectives. Moreover, by following these steps essentially allows the artist to estimate how far they are from obtaining the desired result when considering specific constraints: such perception is pivotal for keeping the production on schedule.

Sad to say, in crude, real-world scenarios, some Foreground processes may be minimized or even bypassed by artists depending on the situation. Products with extremely prohibitive deadlines, for example, prejudice the Defining Character' psychological aspects and Imagetic Research steps. On the other hand, freelancers may ignore some Background processes, such as Infrastructue due to their freedom to choose tools at their own will.

Finally, it was observed that some complementary tools might fit into the process in order to further assist artists to keep their focus. This, however, is a matter for future research we discuss in the next section.

5 CONCLUSION AND FUTURE WORK

This paper described new design process crafted specifically for obtaining characters that are both consistent and coherent. This process combines the strengths of two processes proposed by [14] and [17]. By adopting the steps suggested in this investigation, artists are endowed with a work method that provides means for obtaining conceptually solid characters fitting to the application context. In fact, most modern productions require large teams formed by different profiles working together focusing on the same result.

The proposed process was empirically assessed throughout the development of characters for a prototype TCG. Altough there was a sole artist working on that product, this evaluation allowed to pinpoint important insights presented in this paper regarding the process' effectiveness. The process contributed for developing of a eligible product in a more objective and predictable fashion.

Figure 6: Final render for the Curupira riding a warthog as a method for keep its track hidden from hunters.

It is worth observing the process presented herein is very detailed. At first, some professionals in haste may avoid performing all the suggested steps. However, productions aiming for high-quality characters may benefit from guidance found on both Background and Foreground processes.

Assessing the process in terms of multiple artists working in teams and different products are left for future work. Other investigation of interest concerns how to insert this process into a wider production pipeline. Developing tools for assisting the artists and other stakeholders also poses as a promising challenge for further studies.

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