LEARNING NON-VIOLENT SOCIAL COLLABORATION:

BEYOND ENTERTAINMENT - DEVELOPING VIDEO GAMES WITH A PURPOSE

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ABSTRACT

Popular video games are developed with particular assumptions by programmers and designers, which do not necessarily address larger learning environments. In this project, I employed a user-research approach, leveraging theories of situated learning, to better understand the contexts in which longtime gamers experience their game play. I unraveled their preferences for particular standard game design elements: story, gameplay, replay, audiovisual presentation, themes, physical settings, and social collaboration. Leveraging online networks and voice chat technologies (Skype, Gmail chat, and Xbox Live), I conducted seventeen individual interviews. My sample of longtime gamers revealed that they believe that story must drive the gameplay, and must be inherent in the gameplay as well. Gameplay mechanics should push the player to consider the social group as a whole. Players should be empowered to customize their experiences by providing options for how controls, achievements, and in-game statistics are employed, as well as how the game visually unfolds. Real-time interactions and asynchronous sharing interactions would allow all players to participate even where the internet is not as accessible. Based on these design requirements, I developed a science fictional game prototype inspired by Richard B. Lee's classic ethnography *The Dobe 'Ju/Hoansi*. I constructed an online evaluation survey of this game prototype description using Survey Monkey. There were statistically significant, positive correlations that indicate that women and participants in the 32-38 age group found the themes more appealing and the 32-38 age group also found the social collaboration to be more appealing. With input from independent game developers, I looked at existing game genres such as Roguelike games, visual novels, and graphical adventures, which would be appropriate for the game prototype's future development. I also developed three gamer personas to convey user preferences to developers. Finally, in considering future directions, I

discuss this project's limitations and how this project could be applied to conduct social research online and games in the classroom.

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Finally, I would also like to thank video game developers and gamers everywhere. Your hard work and love for games that bring so many people together is an inspiration. Any mistakes and oversights contained in this project report are mine alone. Thank you.

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1.1 Project Synopsis

This project investigates the development of a video game with a purpose beyond entertainment— non-violent social collaboration learning. The intended audience of this project consists of people interested in video game development. Some may be professionals, or gamers with vast amounts of experience. Others may be amateurs, or those with less expansive gaming experience. Developers and players can work in a team, or by themselves. This project could hold appeal for them all.

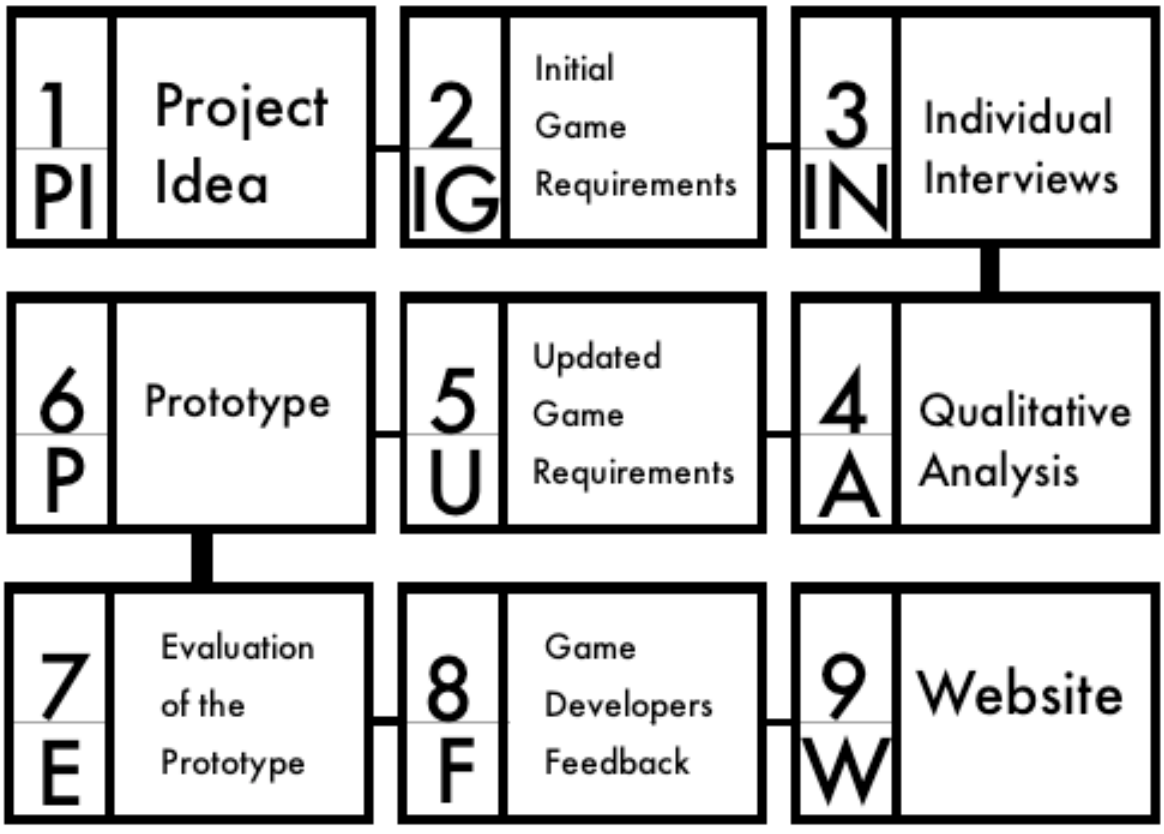
As described in Figure 1, I used the following methodology. After brainstorming a project idea (Figure 1 1/PI discussed in section 1.3), I wrote some initial game requirements drawn from standard developer procedures (Figure 1 2/IG discussed in section 2.1), which I thought would emphasize non-violence and learning, goals that I constructed to expand the experience of play beyond entertainment. Then, I used a user research approach with longtime, experienced video gamers to capture the perspectives of players, rather than designers; I interviewed participants online to gauge their user experience of the games they played (Figure 1 3/IN discussed in section 2.1). How did they perceive the design elements of the games they play (gameplay, audiovisual presentation, themes, replay value, physical settings, story and social interaction)?

After analyzing the interview data (Figure 1 4/A discussed in section 2.5), I updated the game requirements (Figure 1 5/U discussed in section 3.9) and wrote the description of an early game design prototype (Figure 1 6/P discussed in section 3.10). Next, I presented this description online eliciting quantitative feedback via an online survey (Figure 1 7/E discussed in Chapter 4).

Finally, after getting some feedback from independent game developers (Figure 1 8/F discussed in 5.1), I selected and researched three existing game genres: *roguelike* games,

visual novels, and *graphic adventure games*. I investigated the possibility of applying these game genres' design to emphasize non-violent social collaboration. *Roguelike* games, which emphasize survival and resource management, are especially challenging. *Visual novels* center on dialogue and decision making, while *graphics adventure games* are driven by puzzle solving and dialogue. I constructed a website (Figure 1 9/W) to present the results of this game development research, www.anthrogamer.com. This website explains what I have learned, and details the outcomes of this project. The website includes user experience research results, the prototype's storyline, the online evaluation survey results, and game design discussions.

Figure 1 *Project Methodology*



1.2 Video Game Development

In this section, I give an overview of the video game industry to provide a context for my project. Video games, also called entertainment software, are primarily played for their stated entertainment value. In the United States, the Entertainment Software Association (ESA) represents "companies that publish computer and video games" (Electronic Software Association 2015). As of spring of 2015, I work in the video game industry as a programmer in Tokyo. As a video game enthusiast who has studied engineering, programming and anthropology, I am interested in how video games can be developed to do more than just entertain, but have a greater purpose. This project uses an anthropologically-informed thought experiment to help developers produce games with a specific learning objective by leveraging learning theories and existing anthropological studies.

The United States and Japan are both key sites for video game production and consumption, and as such it is important to overview Japanese and American video game development history. In 2012, Japan total video games revenues were about $22.29 billion (including arcade - $8.5 billion, retail - $4.6 billion and mobile - $7.57 billion), while its exports in retail alone were $9.87 billion. The US total video game revenues (consumer and arcade markets) were $17.1 billion in 2012 (Video Game Sales Wiki N.d.).

The United States and Japan have a long intertwined video game history (Picard 2013). The first commercial console game system was the Magnavox Odyssey in August 1972, which is credited to Ralph H. Baer, an engineer working with defense contractor Sanders Associates (Winter 2013). The Odyssey game console included a two-player game *Table Tennis*, that game cartridge was sampling labeled as "1." A month later, Atari, Inc. released a similar game called *Pong*, gaining its renown as an arcade entertainment manufacturer (Winter 2013).

Arcades, short for amusement arcades machines, are indoor coin-operated game machines. At the time, arcade video games allowed customers to experience games that they were not able to experience at home, since arcade game machines often used more expansive hardware. While early console game history started in the US as an evolution of hardware and software development first related to the defense industry, console game development initially started in Japan as the result of new Japanese leisure activities that mirrored American pastimes (Picard 2013; Aoyama and Izushi 2006).

On April 15, 1983, Oriental Land Co., Ltd. opened the doors of its Tokyo Disney theme park, furthering the intersection of Japanese and American leisure. Three months later, on July 15, 1983, Nintendo released the Family Computer (ファミリーコンピュータ "*famiri-konpyuta*-") or Famicom (ファミコン "*famicon*"). Nintendo was an established Kyoto based company previously known for its *hanafuda* - Japanese playing cards, and single-game "computer TV-game" systems, as well as its own arcade machines. The Nintendo Famicom was a new game-swappable system, and Nintendo offered three Famicom versions of its arcade games: *Donkey Kong*, *Donkey Kong Jr.* and *Popeye*. Essentially, Nintendo reproduced the gameplay of its popular arcade games on their lower cost Famicom hardware for familial use at home.

Although console gaming had its roots in the United States with the Odyssey, two global events in the early 1980s had a significant impact on video game industry evolution. The North American video game crash of 1983 and the launch of the Nintendo Entertainment System (NES) in the US in 1985 changed the industry. During the North American video game economic crash of 1983, the video game market worth dropped from $3 billion to $100 million, and threatened to end the entire video game industry; this event was precipitated by an abundance of home console systems, low quality games, and the increased affordability of microcomputers (Lambie 2013). The re-engineered and rebranded Nintendo Famicom

launched as the NES in 1985, accompanied by games with a Nintendo seal of quality. My own first experience playing console video games was playing a NES console with friends.

Since the release of the NES, console hardware and game development have continued to evolve as technology improved exponentially. Nintendo and Sega dominated the console industry until 1994, when Sony released its first PlayStation, which quickly became the most successful console of its generation with over 100 million units shipped to store worldwide (Sony Computer Entertainment Inc. 2011). The PlayStation 2 released by Sony in 2000 is the highest sold game console system of all time with 155 million units sold (Barreiro 2012). Microsoft became of a competitor of Nintendo and Sony, with its first Xbox console video game system in 2001. The current Xbox, the Xbox One, is Microsoft's third Xbox system.

Video game publishers and game development studios grew along with the establishment of the video game industry. Activision Blizzard, owner of the *Warcraft* and *Call of Duty* franchises, and Electronic Arts (EA), owner of the *Battlefield*, *Mass Effect* and *FIFA* (soccer game) franchises, are two of the biggest video game publishers in North America. Square Enix, owner of the *Final Fantasy* and *Dragon Quest* franchises, is one of the biggest publishers in Japan. Popular game development game studios include Naugthy Dog (*Uncharted* series), FROM (*Demon Souls* series), and BioWare (*Mass Effect* and *Dragon Age* series).

Two approaches to game development illustrate the two main marketing strategies of game developers. Publishers pursue licensed and established franchises, while new directions tend to be seen as financial risks. By comparison, independently developed games are usually driven by experimental ideas which tinker with one or more aspects of game design. For example, *Braid* introduced an innovative time rewinding mechanic in the popular platform game genre, which required players to jump from platform to platform.

Regardless of marketing, game developers have to consider two important aspects of game development: technology and game design. While the technology used can vary greatly, game design usually follows a set of principles. On the technology side, an important decision in the game development production process is to decide if the game should use a game engine developed in-house or license a game engine from an external vendor. Ward (2008) explains that a game engine is a technology that a game can use to communicate with the video game hardware (video card, audio card, microprocessor and memory) and as such enable video game developer to focus exclusively on developing the game. Instead of learning the intricacies of video cards, game developers can instead work on programming the game rules and creating art. Nowadays game engines can support multiple systems, personal computers, console video game systems and even smart phones.

The choice of the game engine is critical, not only because it can lower the degree of programming effort (and hence financial cost), but also because using a particular game engine also affect the workflow of the entire team. For example, both the Unity and the Unreal Engine game engines provide ways to import 3D models and animations from an artist's 3D software scene into a game engine's scene. If such standard import tools are not provided by the game engine selected, they need to be purchased additionally or developed. Both the Unity and Unreal Engine are now more affordable to new developers as they both offer to get started for free. Most features of Unity are free to developers who have less than $100,000 in annual sales. Unreal is free to developers up to gross sales of $3000 per product per quarter. This allows new developers who do not want to spend any time creating a new game engine to put more effort into game design.

On the other side, game design is both an art and a science, and is about finding the right balance between rewards and punishments, freedom and constraint, power and weaknesses, abundance and scarcity. *The Art of Game Design* by Jesse Schell (2008) explains

how each design area needs to be balanced by the use of lenses. These lenses are "questions, that you can ask about your game design as you iterate upon it" (Cook 2009:n.p.). As a document a game design can take the form of the game design document, which expresses, according to Tim Ryan (1999:n.p.) "the vision for the game, describe[s] the contents, and present[s] a plan for implementation."

As an activity, game design can be defined in a variety of ways, but all definitions include a quest for balance in the sets of rules, as well as in the contents, in order to keep the game interesting to the player. For example, if a game is too simple and offers little challenge, it might appear boring. While on the other extreme if a game is too complex and too challenging, it might be overly frustrating.

Schell (2008:xxxvii) defines game design as "the act of deciding what a game should be," but more importantly good game design, he explains, "happens when [the] game designer [views the] game from as many perspectives as possible" (Schell 2008:xl). The key is to "listen" to these multiple perspectives. Sotamaa (2007) analyzes ten popular books from the game design literature, and explain how the perceptions of players by game designers guide the design process. Sotamaa calls for a more direct participatory involvement of players in the design process to go beyond "demographies, psychological models or in-game playing styles" (2007:464). Players can be included in the design process by creating more representative models. In this project (section 2.6), I illustrate how personas could be created. These research-based personas could be understood as new player profiles. I do so based on individual interviews with gamers. Individual players could introduce a bias if their opinions are not necessarily shared by the expected audience of the game. However, research-based personas could be used to inform game developers on which gamers to invite to participate directly in their game development process.

Though the most well-known individuals tend to be game designers, video game development companies depend on collaborative work to reach their goals; each individual work piece contributes to the production of a game. Tran and Biddle (2008) look at collaboration among members of a game development team. They argue for a "holistic view of collaborative process, [which should emphasize] the importance of [interpersonal] communication, social relationships, physical infrastructure, shared knowledge and organizational goals" (2008:18). Communication among team members is important as Chandler (2014) explains that there are seven job role categories usually found in a game development company (summarized in Table 1).

People who are in the corporate category might focus on the marketing of multiple games and help the company brand as a whole. Producers oversee the whole development process and make sure that the game is on track and meeting the expectations agreed upon. Game designers define and tune the game experience. Visual artists are responsible for creating and animating the 3D and 2D assets. Sound designers and musical composers are responsible for producing the sound effects and the musical soundtrack. Engineers or programmers are responsible for programming the core logic of the game, the game engine if needed and creating tools that game designers and artists can use to build the game levels. Quality Assurance (QA) Testers play the game multiple times to make sure that the game runs well.

Table 1 *List of video game development job titles by role category*

"**Corporate**" functions - Marketing and Public Relations, Creative Services (Packaging, User Manual), Sales.
Producers - Executive Producer, Producer, Associate Producer.
Game Designers - Creative Director, Lead Designer, Systems Designer, UI Designer, Level Designer, Scripter and (Story) Writers.
Visual Artists - Art Director, Lead Artist, Concept Artist, World Builder or Level Designer, Asset Artist, Animator, Technical Artist and Marketing Artist.

Sound Designers and Musical Composers.
Engineers (or Programmers) - Technical Director, Lead Engineer, Networking Engineer, Sound Engineer, Graphics Engineer, Tools Engineer, AI Engineer.
Quality Assurance (QA) - Lead QA Tester, QA Tester

(based on Chandler 2014)

In Japan, job/role titles can be confusing when drawing parallels to job titles used in the United States. Kay (2013) explains that the term "designer" is usually used for artists (as in computer graphics designers), and the term "planner" is used instead to cover the responsibilities that usually fall under "game designer" in the United States. The fluidity and ambiguity of developer roles have implications for this project. Story development, essential to learning, is structurally imbedded in design in the United States and planning in Japan. This is the specific audience that can leverage storytelling into learning.

Recent trends have altered the landscape of video game development. These include the establishment of the smartphone mobile gaming market, and the availability and increased affordability of off-the-shelf game engine (such as Unity and Unreal Engine). As the number of smartphone handsets and apps sales has increased, so has the number of mobile game developers and independent game developers. Mobile Operating System developers Apple (iOS) and Google (Android) have essentially become publishers of applications on smartphones, as they receive a 30 percent share of most sales respectively on the Apple's app store and Google's Play store (Apple 2005; Google 2015).

With the new generations of consoles (Wii U, PS4 and Xbox One), Indie game developers have also been encouraged by a lower barrier to entry as console manufacturers (Sony, Microsoft and Nintendo) have lowered their requirements to self-publish – publish without the help of a videogame publisher – on their consoles and with free or discounted access to game engines, tools, and development environments. Recent indie development successes include *Minecraft* (recently purchased by Microsoft for over $2 billion), *Line Rider*

(started as an Adobe Flash game on personal computer, now on Nintendo Wii, and handheld Nintendo DS), *Cave Story* (started as a Windows game and then ported to the Wii and DS), and *Braid*.

In this section, I gave an overview of the context in which video games are developed. Another independent game success, *Gone Home* is a story exploration game released on computers in 2013, which illustrates the potential of video game development beyond entertainment. *Gone Home* places players in front of a mysterious disappearance that they are trying to make sense of, and in the process they learn more about an important social issue. In the next section, I discuss my project's original idea: who longtime gamers are and how gaming can be understood as a learning activity.

1.3 Project Idea: Longtime Gamers and Gaming as Learning

When I started brainstorming a project from my Master's degree in Applied Anthropology, I wanted to combine my interest in video games and my interest in learning. I quickly decided that I wanted to research a video game for my gaming peers, longtime gamers, who grew up with the video game industry and are often called hardcore, or core gamers. I started with the assumption that hardcore or core gamers were defined as gamers who played games that are more involved and complicated than games played by casual gamers. However, I was quite surprised that players of the Call Duty franchise could be considered casual gamers, if they play very few games other than Call of Duty. This made me question whether to use the term core, hardcore or casual in this research, but rather focus on longtime gaming. Adams (2000:n.p.) gives a definition of core gamers, which is closely related to what I refer to as "longtime" gamers in this project, a self-identified category that illustrates subjective commitment to gaming.

> What characterizes a core gamer? Well, they play games a lot. A *lot*. For core gamers, game software is their favorite entertainment medium, surpassing television and the movies. Core gamers spend a great deal of their leisure time playing games, and if they're not playing, they're reading magazines about games, surfing the web for

> information on games, or hanging around the game store. They write walkthroughs and build websites devoted to their favorite games. They discuss them on bulletin boards. It goes on and on.

Learning researcher James Gee (2004) argues that video games, especially the kind of games played by longtime gamers, are great learning vehicles. Most classroom learning centers on what Gee refers to as "content fetish," (Gee 2004) in that students are instructed to memorize information, theories, and methodology and are then tested on their knowledge. However, constructivist learning theories focus on the learner first. These theories argue that how meaning is constructed is not easily defined, and thus what is learned is more amorphous. Lave and Wenger (1991) explain that with *situated learning*, a non-expert learns socially by interacting in context with both with experts and non-experts what the researchers termed a *community of practice*. Learning happens informally and often on the periphery of other interactions among community members. Learning is made possible not by an unrequited apprenticeship where a master tells students what they should work on, but by a sort of flexible access of communication between students and the master. As such, a conducive learning environment promotes communications between participants.

Gee (2004) explains that *situated learning* takes place in video games, and that informal contextual learning is required for in-game progression, effectively making video games teachers of their own game mechanics as configured in their design by a collaboration of game developers. Gee argues that augmenting that learning environment is at least as important, and perhaps more so, than the specific knowledge being presented. As Gee and others demonstrate, video games offer unique opportunities to get players, gamers to practice problem solving. Players act upon their thinking and finding scripted ways to solve problems, ways that game developers make available to gamers (Gee 2004, Granic, Lobel, and Rutger 2014). Social collaboration does take place in video games; it is often possible to play as team with other characters who are controlled by other players or controlled by an AI

(artificial intelligence) software. However, many popular video games tend to focus on violent gameplay and individualism. I will discuss these assumptions in the next section.

1.4 Problematizing the Learning Environment of Popular Console Video Games

As with many popular Hollywood action blockbuster movies and Anime - Japanese animation, violence in recent AAA games is often used to carry the story forward. The ambiguous term AAA ("triple A") is similar to the credit rating system used by insurance, financial security firms to classify video games with the highest development and marketing budgets and highest expect sales. However, it is solely a marketing term that is often self-selected by major video game publishers such as Electronic Arts to classify games. *Mass Effect, Call of Duty, The Elder Scrolls, Final Fanta*sy and Batman *Arkham* series are example of AAA games.

The *Mass Effect* trilogy tells the desperate journey of a soldier leading his team fight against an intergalactic threat using weapons and special powers. Activision's *Call of Duty* franchise is a series of militaristic shooter games, where players are placed in the shoes of soldiers in a first-person view. *The Elder Scrolls V* (five) *Skyrim* puts the player in control of a hero who can use weapons and magic to defeat a threat to the land of Skyrim. Similarly, *Final Fantasy XIII* make uses of team-based battle tactics and commands also using weapons and magic to defeat enemies. While non-violent resolutions to situations are sometimes offered to players in role playing games (RPG) like *Mass Effect*, *The Elder Scrolls* and *Final Fantasy*, these games still require violence to progress through most of the game story. While cartoon-like violence as seen in most platform games - where the player often has to jump from one platform to another - such as *Super Mario Bros.*, *Rayman* or *Braid*, is often given as a good alternative to more realistic violence, this project focuses on non-violence.

Indie games offer opportunities to console gamers to play non-violent games. *Fez*, *Flower* and *Gone Home* are some of the best examples of recent popular non-violent indie

games. Console games (as illustrated by late 2011 *Arkham City*, and early 2012 *Mass Effect 3*) have been historically developed with an emphasis on individualization and competition. Players tend to play the hero who single-handedly, or with a team, saves the world or worlds. While this trend started with two-dimensional arcade and console games, where the player's motivation could often be summarized as defeating numerous enemies to achieve the game's end, technological advancement increased direct control over the player character in modern 3D action games, which helped engrain the virtual hero simulator focus in modern 3D games.

Single-player campaigns are often rooted in the individual actions of the player character, and social interactions are limited to interactions with non-playable characters. Players are encouraged to identify with the protagonist, the character-player, via experience levels, ownership of items and status titles, financial and physical wealth, skills and power, and so forth. Achievements, trophies, badges or other visible virtual status symbols now also reward players for in-game actions. Though some achievements must be obtained with the help of another player, most achievements can be obtained individually.

Social interactions with other players are often defined by game modes: competitive multiplayer – players against players – modes often shortened as "multiplayer" modes; cooperative multiplayer - players against environment - modes, often shortened as "co-op" modes; and single player (player against environment) modes. These game modes are often displayed on the game's main menu. Valve's *Left 4 Dead* provides the following modes. Campaign is a cooperative mode following the story of four survivors fighting against zombies. Versus is a competitive team based multiplayer mode (zombie players against survivor players).

Survival is a game mode that can be played as a single player mode or as a cooperative mode. Single-player is the single-player mode equivalent of the four survivors' story; the player plays one survivor while the other survivors and zombies are controlled by

the game's artificial intelligence. The emphasis on action, violence, and identification with individual characters is often used by commercially successful games, many of which I have enjoyed. Developers will have to examine, and revisit this emphasis when they are developing games with specific purposes beyond entertainment, such as non-violent collaboration and coexistence. The organization of this project report is presented in the next section.

1.5 Report Map

This project report is organized in chapters in the order my activities took place. The next chapter, Chapter 2, discusses the user research approach I followed. First, I briefly discuss my amateur and professional background (section 2.1) and establish some initial game requirements (section 2.2). Next, I describe the user research online interviews that focused on the various experiences of play (2.3 and 2.4). In section 2.5, I explain how I analyzed the interviews. Finally in 2.6, though I did not use personas in this project, I briefly present how research-based persona creation can be realized with the interview data.

In Chapter 3, I present the revelations which emerged from my analysis of the interviews (Sections 3.1 to 3.8). In section 3.9, I delineate the resulting updated game requirements. I provide a detailed description of the game prototype in 3.10, which I then presented to online survey participants of Chapter 4. In Chapter, I therefore discuss the evaluation of the prototype, how I conducted the online evaluation survey, and what statistical analysis I used.

The opening section of Chapter 5 relates my discussions with independent game developers about my prototype (section 5.1). I discuss existing game genres which are appropriate for developing games that have specific purposes beyond entertainment in sections 5.2 to 5.4. I end with a discussion of gamification and serious games (sections 5.5

and 5.6). In Chapter 6, I summarize my research and discuss some possible applications in industry and the classroom.

Chapter 2 - User Research: Exploring the World of Gamers

2.1 Amateur and Professional Interests

When I started researching this project in 2012, I drew on my own experiences growing up with the console industry, starting with the Nintendo Entertainment System, playing video games and studying anthropology. I also incorporated what I knew about video game development, which mostly concerned programming, rather than design. In 2010, I learned more about game design processes as I worked to implement a game design. Walter Whitford, an amateur game designer gave me a set of functional specification for a 2D spaceship shooter game codenamed *Pax Blaster*. I then programmed a *Pax Blaster* playable prototype according to these functional specifications. Tim Ryan (1999:n.p.) provides some guidelines for writing functional specifications:

> In short, *what goes into the game* and *what it does is documented* in the functional specification. This is often written from the perspective of the user. *How* it is implemented and how it performs the function is documented in the technical specification. This is often written from the system perspective. Both form important deliverable milestones in the design stage of the game development process.

While documenting these specifications might be more than some amateur game developers do, Andrew Doull (2008) argues that amateur is a more accurate term for people who are making a game without professional or sales goals as indie game developers are increasingly following established professional practices. Though I am interested in developing my own indie video games, I am always reminded that indie games are much more developed than most amateur games.

After the Tokyo Game Show (TGS) of September 2013, I learned more about professional and indie game developers in Tokyo through social interactions and professional networking. This led me to start working in the Japanese video game industry in the summer of 2014. Though I am now working with an established game developer that works with video game publishers, I made sure I could still pursue my interest in developing indie games

on my own as well. I did so because indie games can offer a way to develop and market games that would otherwise not be created.

My own interest in video games, as a gamer, and my amateur experience, as a video game developer, informed the earlier part of this project. These shaped my early methodology, identifying the initial game design initial requirements, conducting the interviews, and analyzing the interviews to find patterns that could give me an insight on gamer preferences. Those experiences also influenced my revision of the game design requirements, the writing of a prototype, and finally, the content of the online survey. My interactions with professional and indie developers shaped my later reflections on this project; I started to get a better understanding of their activities (as illustrated in Chapter 1) and some of the reasons they design games the way they do. These reflections influenced the way I created my research-based gamer personas (section 2.6), and how I selected the appropriate game genres appropriate to continuing discussions with independent game developers.

2.2 Game Design Elements and Game Initial Requirements

For my project, I chose to use the game design elements below, often used by game reviewers, to facilitate coherent discussions with gamers and game developers: gameplay, presentation, themes, replay, physical settings, story and social collaborations. I had initially ordered these game design elements following an emphasis on gameplay. In Chapter 3, I discuss why and how I created new priorities based on my analysis of the interviews.

Gameplay is what makes the game tick or what makes the game entertaining. It defines the core mechanics and the rules (rewards and punishments) of the game. It also defines the clear goal players are meant to achieve. For example, the gameplay of the *Super Mario Bros* series is to jump through an obstacle course, dodging or killing enemies, to reach

the end of the course or level, while the gameplay of the *Halo* series involves the shooting enemies in a first-person shooter view.

Presentation defines the overall audiovisual style of the game. The story can be moved forward by pre-rendered scenes, or by in-game actions. The dialogue can be spoken or displayed as text. There may be background music or not. The graphics are in 3D, 2D or text only. *Thomas Was Alone* and *The Unfinished Swan* are two games that approach presentations with their own unique styles.

Themes in the games can be direct or more subtle. Themes can be appropriate for everyone or only considered appropriate for a more mature audience. The kind of language used in the game can be defined by themes. *Deus Ex Human Revolution*, for instance, explores what happens to existentialism when cybernetics augmentations are becoming common place.

Replay value offers the compelling reasons to replay the game once the main "story" mode has been completed. Each level or each chapter may be replayed. These extra game modes are unlocked by completing the game once. There are hidden objects, hidden or bonus stories, etc . The *Resident Evil* franchises use New Game + ("plus") mode to extend the replayability of the game. In *Resident Evil, players'* weapons, gold and costumes can be carried over to a new game once the game is completed.

Physical settings define the where, what, and when of a tame. The physical setting can be a crowded place or a deserted place. The weather and the environment can be varied or constant. For example, *Fallout 3* places the player in a war-torn, nuclear wasteland on the east coast of the United States.

Story refers to the narrative told in the game. It can be narrated by a protagonist, a key playable or non-playable character, or it can be explained through dialogue, actions and movie cut scenes. The narrator can be omniscient or misleading. *The Stanley Parable*'s off-

screen narrator narrates the player choices, sometimes before the player has made any choices. *Mass Effect* often tells its story via the introduction sequences, dialogue and cut scenes (scenes in which the player often has no control over the actions taking place).

Social collaboration defines not only the interaction options between players, but also the interaction between non-playable characters, and the interaction between non-playable characters and players. *World of Warcraft* raid groups, for instance, enable players to complete quests they often would be unable to complete alone.

With the game design elements defined, I could move to conceptualizing the kind of game I wanted to focus for my project and set ground rules. Table 2 details these initial design requirements. I based these requirements on the game design elements I defined, assuming that certain goals would be more consistent with promoting reciprocity and collaboration. I did not want to make a game that centered on killing humanoids. I also wanted to make sure that this game was entertaining, yet focused on its specific purpose - learning about social collaboration. The game was designed to promote non-violent collaboration and sociocultural coexistence. As such, this game had the following self-imposed requirements: it uses 2D gameplay and graphics, forbids violence against human and human-like characters, and prohibits gun play. It is designed to harness social collaboration, incorporate anthropological knowledge, emphasize skill and exploration rather than time or experience, and promote self-reflection and empathy. The story is initially grounded in an urban context, and focuses on characters and story. I include activities, such as rituals, and use an alternative trading system. With these initial requirements set, I used a user research approach to collect empirical data of how longtime gamers evaluate their gaming experiences.

Table 2 - *Initial Requirements - Gameplay, Presentation, Themes, Replay Value, Settings, Story, and Social Collaboration*

#	Initial Requirement	Original Category
1	uses 2D gameplay	Gameplay
2	uses 2D graphics	Presentation
3	forbids violence against characters and creatures, though subsistence patterns might include hunting and fishing.	Gameplay
4	prohibits gun play	Gameplay
5	harnesses social collaboration,	Social Collaboration
6	incorporates anthropological knowledge	Story
7	emphasize skill and exploration	Gameplay
8	uses an alternative trading system	Gameplay
9	sets the story in an urban context	Settings
10	focuses on characters and story	Story
11	includes rituals	Themes
12	promotes self-reflection and empathy	Themes
13	provides a high level of value	Replay

2.3 User Research

In order to get an understanding of how longtime gamers experience the design of the games they enjoy, I decided to follow a user research approach. In design research, user experience (UX) research fills the gap between the experience the product designers intend and how users actually experience that product. The user-centered design process, as illustrated by usability.gov, explains that individual interviews can be used to "learn about users" while personas should be "developed" to "create representations of users." UX Research has its roots in psychological and anthropological methodologies.

Most research in socio-cultural anthropology is centered on ethnographies. Bernard (1995:16-17) explains, "As a noun, [ethnography] means a description of a culture, or a piece of a culture. As a verb (doing ethnography), it means the collection of data that describe a culture." Bernard also explains that ethnography does not only incorporate qualitative data based, but can also (and should) include quantitative data. To avoid confusion the term "ethnographic study" is often used when referring to the activity of doing ethnography. In

addition to data collection, ethnographic studies also include the analysis of the data collected in order to find possible explanations for the behaviors collected often drawing from accepted theoretical framework.

An ethnographic study often includes an interview component and an observation component. Participant observation is used when the researcher takes part in the activity being observed. Hung (2007) observed young Chinese immigrants playing video games together, but also played with them. By applying Lave and Wenger's (1991) theory of situated learning, Hung's analysis points out that in addition to the video games rules, players were following their own agreed-upon rules to decide how the games should be played. I describe the individual interviews in the next section.

2.4 Individual Interviews

For the individual interviews, I found potential longtime gamers via an online community of video gamers in which I had participated. This gaming website, like many now, offers its own set of social networking tools. These included blogs, profile tools, levels based on activities, and the ability to have followers. As I had already shared my personal interests in gaming in this community, I was not a complete stranger when I started reaching out to members after receiving IRB approval to start the interviews. I contacted people via both the gaming websites blog and via direct messages to members of that community on Facebook. While I did not contact everyone directly, I did post an open "call for participants" on my blog in this community, while trying to focus on getting a diversified sample by contacting particular people directly on Facebook to make sure I captured a diversity of experiences.

While I tried to maximize diversity, I was not able to interview Japanese gamers, because at the time, I could not find any Japanese gamers who were fluent in English. So my sample was predominantly composed of "Western" gamers from North America. The sample

was sufficiently diverse for me to be able to see how people of different genders experienced gaming. Seventeen individuals participated. The following table, Table 3, gives an overview of the demographics of the sample.

Table 3 *Individual Interviews Demographics*

Gender	n=17
Female	6
Male	11

Regions	n=17
North America	13
Europe and Asia	4

Age	n=17
Under 20	1
20 to 24	4
25 to 29	6
30 and over	6

Age Median	all: 28
Female	24
Male	28

Age Mode	all: 28
Female	24
Male	28

The individual interviews were organized as follows. The full list of interview questions can be found in Appendix B. First, I ask participants demographic questions capture those characteristics and allow comparability. Then I asked them if they consider themselves to be longtime gamers and why they play games. We continue to talk about the kind of games they play, and they evaluate and relate their biggest satisfactions and their biggest disappointments.

2.5 Qualitative Analysis

I analyzed the interview data by grouping similar ideas until patterns emerged. First, I read all the interviews and ran keyword searches on my notes and transcripts whenever possible, and grouped interviews found to use the same keywords in similar ways together into sets. These keywords included story, social, RPG (Role Playing Game), satisfied, disappointed, like, love, favorite, online, cooperative, multiplayer, choices, options, friend.

Then, I read all the interviews again and summarized similar preferences and used these summarized preferences to group in existing groups or create new groups. Next, I read each grouped interviews set and compared them to each other.

2.6 Personas

When I initially interviewed my sample of longtime gamers back in early 2012, I had not planned to create and use user personas, as such I did not use personas in my user approach and the realization of my prototype. However user personas have become increasingly important in user-centered product development, so it is important to discuss them here in this user research chapter. Grudi and Pruitt (2002:3) define personas as both a method for analysis and as the name for the fictional people themselves.

> Personas are a method for achieving engagement and reality. We are finding them to be a powerful design tool in practice. Persona use does not require eliminating scenarios or any other method: It is a foundation on which to build scenarios and data collection. It is an infrastructure for engagement.
>
> Personas are fictional people. They have names, likenesses, clothes, occupations, families, friends, pets, possessions, and so forth. They have age, gender, ethnicity, educational achievement, and socioeconomic status. They have life stories, goals and tasks. Scenarios can be constructed around personas, but the personas come first. They are not 'agents' or 'actors' in a script, they are people. Photographs of the personas (in our experience, 'amateur' volunteers were better than professional models) and their workplaces and homes are created and displayed in public places.

In *The Essential Persona Lifecycle: Your Guide to Building and Using Personas* Adlin and Pruit (2010) give step-by-step instructions for creating personas. They identify the five stages of the persona lifecycle as family planning, conception and gestation, birth and maturation, adulthood, lifetime achievement and retirement. In the family planning stage, the researchers should state the problem they are trying to solve. In my case, I wished to have a better representation of longtime video gamers. I also identified the data sources already available. Most of this project methodology and analysis falls under the conception and gestation phases, as I am not "introducing persona to [my] organization." However, my

resulting personas are discussed next, and on my website, www.anthrogamer.com . These persona could potentially be revisited and used in thinking through game development. The conception and gestation phase is where I can problematize common assumptions, to collect new data, and process this data into personas. In order to create the personas, I used a sequence similar to what I did to analyze the data from the individual interviews. I repeated the same process, though this time looking specifically at categories that emerged around the motivations people gave for gaming. I centered my persona creation around those categories.

I developed three personas—Avior, Naos and Yildun—based on grouping by reasons to play video games and games played. Avior plays games because they are a good way to relax, get his mind off stress, to forget external pressures. Avior might play fewer games, but he draws more value from the games he chooses to play by challenging himself to complete as much of these games as he can. Avior might be interested in exploring specific settings, themes, and worlds that are connected to other media. Avior might play the *Batman Arkham* series to be Batman, or gallop on his horse as a cowboy in *Red Dead Redemption*, or fight off a Zombie horde as a human survivor in *Left for Dead*.

Naos sees games as interactive movies, a form of storytelling. She enjoys character development and how the stories are structured around those characters. Naos might also play more games and more types of games than other gamers. She might be more interested in more realistic stories than fantasy stories. She might be interested in the art direction. She links that background history presented in games to her real-life interests. Naos might enjoy playing another playthrough of *Mass Effect*, before playing a game of *Fez*, followed by a game of *Assassin's Creed*, juggling through decisions and quick time events in *Heavy Rain*, and play infinity blade and occasional *UNO* card games on her phone.

Yildun enjoys games because they are fun and can be a social activity and facilitate friendships. Yildun plays his favorite series, and he might be more interested in fantasy

universes than realist ones. Yildun might play *Halo* games, Nintendo games, Final Fantasy games. He could play MOBA (Multiplayer online battle arena) or FIFA (Fédération Internationale de Football Association) games, either alone or with friends. He might also play board games with friends. If Yildun has a handheld console or a smartphone, he might enjoy some of his favorite games on the go and during breaks at work.

In this chapter, I have presented my user research approach, researching and designing a game played for entertainment, but which also promotes informal learning of social collaboration. Although the methodological insights themselves are interesting, it is the patterns revealed by interview, survey and feedback from developers that gives the most insight to game developers. In the next chapter, Chapter 3, I present all the discoveries I made from the gamers interviews, before presenting the updated game requirements and the prototype.

Chapter 3 - Discoveries and Prototype

3.1 Developing games with a purpose

In order to progress in-game, players learn to get better at the performing the game. Gee (2004) argues that well-designed games do this very effectively. If the learning experience is too hard, players might feel discouraged, but if the learning is too easy, players might get bored. Social collaboration happens in video games among players, and between players and NPC (non-playable characters). However, in AAA video games, social collaboration tends to focus on using violence together to achieve a goal. In modern day action-oriented games, such as *Mass Effect*, players are often led to identify with a main player character. In this project, I have problematized that assumption for developing a game centered on learning coexistence and collaboration. In the following sections, I first explain what I have learned after analyzing the interviews of the gamers I have interviewed (sections 3.2 to 3.8). I then list my updated game requirements (section 3.9), before presenting the game prototype (section 3.10).

3.2 Social Collaboration

Though multiplayer modes in games tend to be competitive modes, pitting players against other players, cooperative games, which pitch players against the environment, can still lead to unbalanced competing goals that do not always encourage social collaboration. This a frequent complaint for *Mass Effect 3* cooperative multiplayers, where players are still rewarded with more individual XP (experience points) if they kill more enemies individually, than if they just support their squad mates. Experience points are used by role playing games to keep track of a character strength. The higher experience points characters have, the stronger they are. This might be reflected in the strength of their magic, in the damage done by their weapon, and in how effective their body armors are. Experience points are therefore essential and prized. Players require experience points to level up their characters. Game

designers must decide how to balance the distribution of experience points among multiple player controlled characters.

Zagal, Rick and His (2006) explain the root of the problem: most video games are never truly cooperative. They still reward selfish behaviors. In fact, in order to explain how social collaboration should work in the video game world, these researchers had to look at a board game to truly discern what a true collaborative game design should do. The game "The Lord of the Ring" is considered the "quintessential collaborative board game." This board game teaches individuals how to properly behave; selfish actions have severe consequences and it is impossible to win the game by following selfish actions. While some games force players to press switches together or work with one another, there is very little incentive to play such games with strangers, where the trust threshold is low and gamers are likely to follow selfish behaviors. As such, in order to constantly remind the player of social collaboration, my design has to include social collaboration in every aspect of the game design and not just be "a feature" of the game design.

The implication for design is clear. The story must be rooted in non-violent social collaboration and must force the player to consider carefully individual choices against collective benefit, while encouraging exploratory decisions, an alternative trading system, self-reflection and empathy. The designer might contract individual goals and collaborative goals. The entire game design must push the player to think about social collaboration in all aspects of the game, starting with the story. Gameplay, replay and thematic development, including settings and presentation, must be fully integrated.

3.3 Story as Gameplay

A significant number of players interviewed indicated that story was not only the most important component of game design in their eyes, but that is also at the core –of gameplay. Story permeates the decisions made by the player shape the sequence of events

and development of their characters. Players emphasized the level of depth and replay option that direct choices that can influence the story.

This is illustrated by the popularity of role playing games and other story-driven games. Non-playable characters character development was also described as essential as the playable character, the player character(s) development. Thus, while gameplay, such as tactical shooting and covering, or strategic striking and spell casting, are more mechanically driven, the symbolic gameplay of affecting the progress and fates of characters- often becomes more meaningful to the player. Symbolic gameplay gives the player a sense of voice and agency. This is difficult to record during game play, as most in-game footage records tend to focus on mechanical decisions. Yet the importance of symbolic gameplay becomes apparent when gamers talk about the story.

The implication for design is that gameplay must be driven by the story. Specifically, the story must be written into the gameplay by game designers, instead of being secondary to the gameplay. For example, players should not be asked to collect random objects or coins for the sake of achieving a mechanical goal but should rather be asked to find or build an object, a tool necessary to solve a problem that is presented through the story and the resulting gameplay.

3.4 Large Universe

Games which are connected to broader universes, but not necessarily to pre-existing franchises, across media or themes tend to be more appealing. Examples include set in science fiction, fantasy, comics, zombie, and survival horror universes, and those set in existing books or genres. In this case, ethnographic elements have been integrated into a science fiction universe, with a dash of magical realism.

The implications for design is that the story will be more appealing if players believe that a fully developed adventure story that is taking place in a bigger universe. The story

takes precedence and will be used to decide the themes, settings and audiovisual presentation representative of a larger, detailed, universe.

3.5 Asynchronous Interaction

Access to technology still matters. While it is easy to forget the days when the internet was not as widely used, widespread access to technology is still not always possible. This access limits the level of simultaneous online in-game participation, which is usually required for online multiplayer and cooperative games, which gamers can have with one another. However, even with limited access gamers are often able to share information asynchronously and can create online relationships without communicating in real time.

The implication for design in choosing the mode of interaction is clear. The game should include collaboration with other players by providing both asynchronous (sharing game components) and synchronous (playing together) options. For example, players could asynchronously share game contents which might affect the visual style of the game, or game items which would be reflected in their inventory contents.

3.6 Familiar Controls

While some of the interviewees found the advances in motion-control technologies interesting, it is not a control technology which they necessarily prefer. Most interviewees rely on their gamepads and stress the importance of gamepads. A vast majority of interviewees who have tried computer gaming also complained that they cannot do personal computer gaming, because they are much more comfortable with gamepads, though all interviewees did use computers to go online. While this may be an artifact of time and place, since emerging technologies, particularly using mobile devices, may ultimately replace current popular gamepads, my data shows a strong preference for gamepads.

The implication for design experience suggests that the game must be controlled by a standard, traditional gamepad. A game should not force a particular kind of controls on the

players. Most console gamers are more comfortable with a gamepad, while personal computer gamers might be more familiar with a keyboard for specific games that are usually designed to be played on a personal computer.

3.7 Achievements

Players vary in their uses of achievements varies. Some players interviewed tend to play more extensively and draw lengthier entertainment value from the games they chose to play. In these cases, achievements are seen as helpful and guide players to accomplish their in-game completion goals. These players might buy fewer games, and achievements are seen as a way to extend the enjoyment of the games they do play because it adds value to their experience. Not only do they play to complete the game, but they play to master the game, to meet all additional objectives.

The implication for design suggests that players should be able to use achievements to keep track of their progress. This is particularly important in the case of the prototyped game, since more extensive play in the story is necessary to create investment in collective outcomes. Since individual prowess is not rewarded the achievements must reflect group outcomes that are meaningful to the players.

3.8 Customization

One of the reasons, story has revealed itself to be so important, is that interviewees like to be able to have direct effects and decisions on the story. More options are seen as offering more value, including multiple story possibilities, multiple customization options, and new game modes to extend the games' replay value. Opinions can differ widely. A game might be very popular within one genre but interest in specific games is harder to predict. Even though two gamers might like the same genre and game design, one of the two gamers might be strongly opposed to playing a particular popular game.

Options (choices) must be given to the players. Visual presentation might be simple but must allow players to exercise their creativity. Players should have both synchronous and asynchronous sharing options. Options should be available to let the players make changes to the game as they play so that they can tailor particular game aspects, such as the game visual style.

3.9 Updated Game Requirements

After analyzing the individual interviews, I updated the design requirements as listed in the following table. I also listed each revised requirement using improved grouping of design elements based on the patterns revealed in analysis. This data changed what elements would be emphasized in the design.

Table 4 - *Game Design Requirements Overview - Story, Gameplay & Replay, Themes/Settings & Presentation, and (additional) Social Collaboration.*

#	Game Design Requirement	Category
1	uses 2D gameplay	Gameplay & Replay
2	uses 2D graphics	Themes/Settings & Presentation
3	forbids violence against characters and creatures, though subsistence patterns might include hunting and fishing	Gameplay & Replay
4	prohibits gun play	Gameplay & Replay
5	harnesses social collaboration,	Social Collaboration
6	incorporates anthropological knowledge	Story
7	emphasize skill and exploration	Gameplay & Replay
8	uses an alternative trading system	Gameplay & Replay
9	sets the story in an urban context	Themes/Settings & Presentation
10	focuses on characters and story	Story
11	includes rituals	Themes/Settings & Presentation
12	promotes self-reflection and empathy	Themes/Settings & Presentation
13	provides a high level of value	Gameplay & Replay
14	provides a fantasy which challenges the player	Story
15	character development, decisions - follows the story of multiple people	Story
16	broader universe - sets the story in a broad universe	Story
17	more options	Story
18	in game stats used a guide to completion	Gameplay & Replay
19	uses traditional gamepad/keyboard controls	Gameplay & Replay

3.10 Prototype

Using the updated game requirements and insights gained from analyzing gamer interviews, I created a scenario for a prototype for a video game. That game would be played for entertainment, yet would also facilitating learning coexistence and collaboration by

containing elements from hunter-gatherer ethnographies. The scenario would also approximate a cross-cultural experience. Anthropology provides many detailed ethnographies of social collaboration as it is a fundamental subsistence strategy in many non-industrialized societies. The *Dobe 'Ju/Hoansi* by Richard B. Lee, an iconic ethnography in the discipline, inspired the prototype. Lee's work is used illustrate core anthropological concepts such as the way in which small-scale societies create sustainable subsistence strategies and use alternative trading systems to develop economic systems. The player can learn firsthand key social strategies. People's egos are kept in check by being criticized when they have achieved something important. For example, when hunters bring home meat, other people insult that achievement. This phenomena is referred to as "insulting the meat" (Lee 1993:54). The ubiquity of sharing, a feature of the group, informed the story and encourage limited ownership. Foraging and hunting provide the bases for game quests or game sections objectives. In addition, the use of *n/um*, spiritual energy, in healing dances, distinguishes the stargazer culture. Placing the gamer in multiple social contexts, both industrial and non-industrial, builds the capacity for non-judgmental empathy and provides an opportunity to discuss cultural relativism and to make cross cultural comparison. Egalitarian gender roles and a flattened social structure support discussions of social inequality and its roots in political economy. However, this prototype is also a piece of fiction that necessarily romanticizes and engages the player.

THE STORY OF ANTHROGAMER AND THE STARGAZERS

The following is the story I developed for my game, which I later asked survey participants to read and evaluate. In this game, the gamer plays multiple protagonists. He or she play a gamer, "the anthrogamer," in a heavily urban, industrialized, technology-centric world while he or she also "play" multiple members of a community on a remote planet, "the stargazers." The story is told by a narrator in a way that is similar to old point-and click-

adventure games, even though this is an adventure that can be played solely with the use of a gamepad.

The story centers on the comparison of the life of the anthrogamer to the lives of the stargazers. This will be done without judgment or advocacy of one over the other. Throughout the story you will explore different aspects of life, including subsistence (activities which keep people alive), trade, shelter, beliefs, healing, ownership and social organization. The central motivation of the player throughout the story will be to resolve a mystery - a global epidemic, a virus that is slowly making everyone sick in the anthrogamer's world. While the anthrogamer's world has the technology to communicate, travel, and create new drugs, they are not sure where to start.

The stargazers decide to intervene by entering the anthrogamer's dream. Yet the player will not play one specific stargazer, but will rather have to play multiple stargazers in order to make progress. The lens of the player is thus expanded. While the anthrogamer's society is centered around the individual and personal property, which depends on technology and industrialization, the stargazers have been forced to work together for thousands of years in order to sustain themselves. While the stargazers have not developed industrialized technologies, they are expert trackers, botanists, and spiritual healers. While technologically advanced outsiders might mistakenly judge them to be too simplistic, stargazers are quite sophisticated in the way they organized their social subsistence/survival and maintain their omnipresent and essential social cohesion.

The story is primarily non-violent in the sense that no armed physical conflict takes place in the scenes that the players play through, though characters might talk about violence and hunting wild game for meat. The world of the anthrogamer is in turmoil. Not only has the virus made everyday life activities more demanding, it happened during a worldwide

financial crisis. After reading the health of the anthrogamer's world in the stars, and a long deliberation among themselves, the stargazers decide to reach out via dreams, not out of compassion but out of necessity; the virus will reach their world soon. It is also the belief of the stargazers that residual negative spiritual energy and restless spirits might be the virus itself, and it cannot be cured or even treated by physical actions or drugs alone. The world of the stargazers was once inhabited by a vast empire that built castles. Not much is known about this vast empire, but their once-upon-a-time presence in the stargazers' world is quite noticeable in certain areas. This common science fiction trope sets the stage for choosing a non-industrialized lifestyle.

The stargazers do not own anything, though they might hold on to something while accomplishing a task. For example, they share wild game hunting weapons, plant foraging tools, cooking utensils, and healing and record keeping materials. The stargazers do not have permanent storage containers. So the player's control of the stargazers will be constrained by this no-ownership or acquisition practice. Added to this limitation, because players are traveling to the stargazers in a dreamlike state, their consciousness might switch from one stargazer to another in a moment's notice, in a quasi-random fashion. This pushes players to always play stargazers as collaborative, rather than separate individuals. The stargazers' personalities and willingness to help (to be controlled in this dream like state) might vary greatly. Just because they agreed to help does not mean they are the players' complete puppets.

THE GAMEPLAY OF ANTHROGAMER AND THE STARGAZERS

Using a standard console controller or the mouse and keyboard, the player can control the anthrogamer in the anthrogamer's world. The player can control members of stargazers, one at a time, while in the dream state. In order to achieve a balanced difficulty, the rate at which the anthrogamer's consciousness moves from one stargazer member to another will

vary depending on a number of variables. These include progress in the storyline, and player-selected difficulty settings. The game will also be divided in story chapters. To perform context/story sensitive "special" actions, at certain points of the story or in certain locations, the player will be given an additional button to interact with the world and characters.

As I was trying to articulate a prototype, I made a conscious decision not to make a 2D platform game (e.g., *Super Mario Bros.*), because platforming mechanics would then take precedence over the story or the reason that compels the player to play the game. I wanted to have the story dominate the gameplay and guide the game mechanics. So in order to accentuate the story, there is no jumping unless the story requires it. It was clear from the interview data that story emphasis was the key to creating a more meaningful learning environment.

Some games focus on gameplay first, and most games can be played while ignoring the story completely. In order to promote learning in a social situation where everyone matters, in this game the story must drive, affect and be affected by all gameplay. Players must be convinced that their actions matter for the learning to work. It is especially important for the most experienced gamers who want to be told why they should care. In order to uncover the mystery and find a solution to the anthrogamer's world's virus, the player will alternate between the anthrogamer's world and the stargazers' world and make incremental discoveries about the stargazers' culture.

Emphasis will be given to exploration while using stargazers members. In order to extend the value of the game, the appearance of the anthrogamer in the anthrogamer's world will be customizable. Later, the appearance of items, and the appearance of stargazers will be customizable as well in-game. Certain aspects of the landscape will be customizable as well, allowing each player to tailor both the anthrogamer's world and the stargazers' world to their liking. The difficulty level will be adjustable to avoid frustration or increase the sense of

challenge. Story chapters once completed will be replayable at any point of the game. Finally, the game will also keep track of statistics and will track progress, certain achievements or challenges, which will challenge the player to explore the game even further.

SOCIAL COLLABORATION IN ANTHROGAMER AND THE STARGAZERS

Now, that I have discussed the story and the gameplay in some detail we can turn our attention to physical settings, themes, and audiovisual presentations which are used to support the emphasis of social collaboration in the story and gameplay as seen in Table 5.

Table 5 *Social Collaboration*

Story As Gameplay	The game cannot be played by "holding on" to a character. The player is forced to control every member of the stargazers one at a time in order to progress in the story.
Physical Settings	The stargazers' world requires social collaboration among stargazers members in order to survive in a non-industrialized, technology-centric environment. The social goal of the stargazers is to get everyone to contribute in order to keep everyone fed and healthy.
Themes	Global Virus, Coming of Age, Rituals, Sci-Fi Fantasy, Humor, Discovery, Subsistence, Dreams, Tracking and Botanic Skills and Multiple Perspectives.
Audiovisual Presentation	Audiovisual Presentation is the aspect of the game that can be extended to also offer a sharing component. In a completed version, players would be able to share the new player character images (“sprites”) they have created, as well as the "background" layer art they have created.
Collaborative Multiplayer	The possibilities for a collaborative multiplayer mode include being able to join the story (and see the art) of one player's world, text/voice chatting and finally trading the item being held by the player (only one item can be held at a time).

While MMO (Massively Multiplayer Online Games) tend to emphasize social collaboration with other players, this game design intends to emphasize social collaboration through all aspects mentioned earlier. By engineering loss of control over any individual who

can be identified with into the story and gameplay, the game trains the player not to be attached to one character. Similarly, items can only be held on by the character holding them at that point in time. So the hoarding strategy that is often easy to resort to in games which are item-driven is impossible here. In addition, any character can only hold one item at a time. As Zagal, Rick and Hsi (2006) explain, to truly engage players into actions that fit a collaboration-centric purpose is in effect to force them to do so. All the game mechanics must lead to the conclusion that acting for the benefit of all is only way to win the game. While Zagal, Rick and Hsi (2006) excluded narrative building, my interviews with longtime gamers has re-emphasized how important playing-your-own-adventure is primordial. As such, social collaboration must also drive the story, and story decision making. The emphasis on social collaboration among all characters in this single-player game must also lead to gaining some knowledge on social collaboration in the real world, in such a way that players while playing primarily individually are eager to share their narrative with others.

The settings of this game are both familiar and unfamiliar to gamers. It appears familiar as gamers have often explored other planets and cultures, but it is done in an unfamiliar way. Whereas the player might initially believe to be a lone adventurer who saves the day, this game setting truly affects the gameplay. The player must play as a stargazer rather than as an outsider not bound to the rules of the stargazers. The social goal of the stargazers, and hence the player's goal while playing as a stargazers is to get everyone to contribute in order to keep everyone fed and healthy. In this game, the following physical settings and/or locations are contrasted: ruins, jungle, desert, beach, industrialized city, crowded spaces, and open spaces.

The themes of the game provide the right incentive to keep the player engaged and playing the story. The global virus maintains the pressure to make decisions that will benefit

all. The following themes are included: global virus, coming of age/ rite of passage, sci-fi fantasy, humor, discovery, subsistence, dreams, sensory skills and multiple perspectives.

While the audiovisual presentation will be limited by game development resources, the game provide key interaction with the art of the game in such a way that any player can opt to draw their own pixel-based art, which will be in turn sharable to other players via an asynchronous process. Asynchronous sharing is preferred to let any interested players participate. The game relies solely on pixel-based art. It will offer details, though not in HD (high definition) sprites. Non-HD (high definition) sprites are used because it is easier to edit smaller resolution sprites while in-game. The game will include multiple animated layers. There will be a minimum of three layers: sprites layer, blocks layer, and décor layer. The Décor layer will offer some customizable background movement.

Finally, while not required, online (live/synchronous) multiplayer would offer ways for players to visit other players' worlds, communicate ideas in real time, and trade the one object they are currently holding.

This chapter described the user research online interviews that focused on the various experiences of play. The interview data is then analyzed in order to revise game requirements and to inform the prototype description. In the next chapter, this artifact is used on an online evaluation survey and a statistical analysis is conducted.

Chapter 4 - Evaluation of the Prototype

I contacted possible survey participants via a North American gaming website and Facebook. As I did when recruiting possible participants for the interviews, I focused on longtime gamers. The following table, Table 6, gives an overview of the demographics of the sample.

Table 6 *Online Survey Demographics*

Gender	n=40
Female	8
Male	32

Countries (Citizenship)	n=40
United States	23
Others	17

Age	n=40
18 to 24	16
25 to 31	15
32 to 38	7
39 and over	2

The survey was administered online using Survey Monkey. I organized my survey in three parts: demographics, hours played and prototype evaluation. Demographic variables included basic information about the interviewee. I collected self-reported data on gender, age, ethnicity, current country of residence, native language, and country of citizenship. The prototype described in Chapter 3 (3.10 Prototype) was presented to survey participants. The prototype was scored in the following categories: story, gameplay, replay, themes, settings, audiovisual presentation and social collaboration.

While user research focuses on gaining insights of how users experience an existing product, marketing research aims to identify possible market segments interest in buying a new product. My prototype placed a clear emphasis on story and story driven gameplay.

Even though, I interviewed seventeen longtime gamers to get insights in their gaming preferences, I decided that an online survey was necessary to gauge the interest of gamers in my prototype. My online survey had two purposes. First, I wanted to see how gamers would rate my prototype (descriptive statistics). But I also wanted to find out more about who my prototype might be appealing to (inferential statistics). In order to conduct a statistical analysis, I wrote three research questions exploring possible relationships between the survey participants' demographics, the types of video games they play, and how they rated the prototype. I designed the individual interviews (Chapter 2, 2.4 and Appendices A and B), to ask about gaming preferences. I investigated three sets of relationships were investigated (see Table 7). For the first research question (Q1), I wanted to test if the hours played by gamers in each game type category varied across gamers' demographic groups (gender, age, ethnicity, current country of residence, and citizenship). Some game types would be more popular with gamers of some countries. I also wanted to see if age and gender could influence the choice of the game played. For the second research question (Q2), I tested correlation between hours played in each game type category and evaluations scores of proposed game design elements (story, gameplay, replay, presentation, themes, physical settings and social collaboration). Did RPG (role playing game) players rate the story described in the prototype higher than people who did not play RPG as much? For the third research question (Q3), I looked at evaluation scores of proposed design elements (story, gameplay, replay, presentation, theme, physical settings) to see if they varied across gamers' demographic groups (gender, age, ethnicity, current country of residence, and citizenship). I speculated that older gamers might rate the story higher than younger gamers. A full print-out of the survey website is given in Appendix C.

Table 7 *Research Questions and Game Categories*

Q1 - Do hours played in each game type category (see Game Categories table) vary by demographic variables (gender, age, ethnicity, current country, country of citizenship)? Q2 - Are there any correlations between hours played in each game type category and evaluation scores of proposed game design elements (story, gameplay, replay, presentation, themes, settings, and social collaboration)? Q3 - Does evaluation scores of proposed design elements vary by demographic variables (gender, age, ethnicity, current country, citizenship country)?

Game Category	Description
FPS	1. Non Role Playing Game (RPG) Linear First Person Shooters (FPS) (e.g., Modern Warfare)
3PS	2. Non RPG Linear Third-Person Shooter (e.g., Gear of Wars 2)
FPSRPG	3. FPS Action Open RPG with Guns (e.g., Fallout, Borderlands)
FPVRPG	4. First Person View Action Open RPG without Guns (e.g., Skyrim)
3PRPG	5. Third Person Action RPG (e.g., Fable 2, The Witcher, Mass Effect)
AARPG	6. Object Based (as opposed to Stats Based) Action Adventure (e.g., Legend of Zelda)
JRPG	7. Japanese, Command Based, RPG (e.g., Final Fantasy XIII)
RTS	8. Top Down Real Time Strategy Games RTS (e.g., Starcraft II)
EXPLORE	9. Exploratory Puzzle Games (e.g., Myst)
TPUZZLE	10. Tile Based Puzzle Games (e.g., Bejeweled)
OFPS	11. Non RPG Non Linear FPS (not common, closest would be Far Cry 2)
O3PS	12. Non RPG Non Linear Third-Person Shooter (e.g., Grand Theft Auto IV)
SRACING	13. Simulation Racing (e.g., Grand Turismo)
ARACING	14. Arcade Racing (e.g., Burnout)
SPORTS	15. Sport Games (e.g., Madden Football)
PLATFORMER	16. Platform Game (e.g., Super Mario)
AFIGHTING	17. Arcade Fighting Game (e.g., Street Fighter, Fatal Fury)
LSIM	18. “Life” Simulations (e.g., Sim games)
TBS	19. Turned Based Strategy Games (e.g., Civilizations)
MUSIC	20. Music / Rhythm Games (e.g., Rock Band)
PARTY	21. Party Games (e.g., Mario Party)
TRIVIA	22. Trivia Games (e.g., You Don’t Know Jack)
CARDS	23. Card Games (e.g., Solitaire)
BOARDS	24. Board Games (e.g., Checkers)
PONG	25. Pong Games (e.g., Arkanoid)
MMOARPG	26. MMO Action RPG (e.g., Vindictus, you can doge/roll)
MMORPG	27. MMO traditional RPG (e.g.,World of Warcraft)
SRETRO	28. Retro Arcade Shoot’em up (e.g., Contra, R-Type)
BRETRO	29. Retro Beat’em up (e.g., Double Dragon)
CLASSICS	30. Retro Arcade Classics not fitting in above retro categories (e.g., Pacman, Frogger, Donkey)
LGUN	31. Light Gun (e.g., House of the Dead)
OTHERS	32. Other Fill in the Blank (Free Form Text box)

The survey asked respondents to identify preferences. I collected information on the following independent variables (IV) and dependent variables (DV). For correlation analysis (Q2), the IV collected was hours played in each game type, while the DV collected was evaluation score of design/ prototype elements (gameplay, audiovisual presentation, themes, replay value, setting, and story). Self-reported measured data included the estimated hours of specific game type played, in order to facilitate the collection of interval/ratio, continuous data. For example, I collected the number of non-role-playing game first person shooter game hours. An example was provided to illustrate game type, as well as an exhaustive list of games fitting each category, in order to avoid ambiguity between stated game types. For variation by demographic variables (Q1, Q3), the IV collected was a demographic variable (gender, age, ethnicity, country), while the DV collected was evaluation scores of design/prototype elements. The IV, in this case, was categorical - sex, ethnicity, country, age. I created create the following age bins and used them for analysis: 18-24, 25-31, 32-38, 39-45.

I had initially planned to use parametric tests. However, parametric tests are best used for normal distribution and homogenous variance, a Gaussian distribution, a bell curve. When I primarily ran descriptive statistics and the Levine test using SPSS, the data sets collected did not, in fact, follow a Gaussian distribution. Therefore, I chose to use non-parametric tests. As such, instead of ANOVA, I used the Mann-Whitney U Test (2 groups), and the Kruskal-Wallis Test (>2 groups) to compare independent samples. These tests were used for research questions 1 and 3. For correlation, instead of using a parametric correlation test (Pearson R), I used non-parametric tests—Kendall's tau and Spearman's rho—which both yielded the same results. These tests were used for R2. The significance level was set at $P = 0.05$. All tests were 2 tailed tests.

The online evaluation of the prototype had the following results. The themes and story were rated highest. The replay value was rated the lowest, while the gameplay, settings, audiovisual presentation, and social collaboration are mixed results. Support was found for some relationships. Hours played linked to demographic variables; computer card games were more popular with women (Mann-Whitney U Test, p=0.036). Games played by age variation showed that 32 to 38 years old players used more computer board games (Kruskal-Wallis Test, p=0.008). Games played by citizenship variation showed that gamers from the US and India played more open-world 3rd person shooter, as illustrated by the Grand Theft Auto series (Kruskal-Wallis Test, p=0.019). Indian citizens played more simulation racing games such as *Gran Turismo* (Kruskal-Wallis Test, p=0.048).

Two correlations between hours played and scoring of the prototype were found. Positive correlation was found between playing turn-based strategy games (such as *Civilization*) and the rating of the physical settings (Kendall/Spearman Correlation coefficient: 0.352, p= 0.014, n= 34). Positive correlation was also found between playing board games and the rating of the physical settings (Kendall/Spearman Correlation coefficient: 0.307, p= 0.033, n= 34). Finally, some support was also found for relationships of scores of game design elements and demographic variables. The theme score varied by gender, as women rated themes higher, and also varied by age, as 32-38 years old rated theme higher (Mann-Whitney U Test, p=0.039). The collaboration score varied by age group, since 32-38 years old rated social collaboration higher (Mann-Whitney U Test, p=0.028).

I interpreted these statistical results as followed. In the prototype, I spent time describing the story, which was the highest rated design element along with themes. My description of the gameplay was not deemed enough by respondents to really understand how the game mechanics would work. This is a problem with my prototype description, which was also pointed out by independent game developers, and is discussed in the next section.

Statistical significance between some game categories and some demographics groups can be interpreted that demographics do matter in some cases. Gender and geographical locations do have an impact on the games chosen to be played. Statistically significant results of possible correlation between hours played, in two categories, and the rating of physical settings do seem to indicate that board gamers and turn-based strategies gamers were more interested by the physical settings of my game prototype than other gamers. This correlation could also mean that the gameplay could be modified to be more popular with board gamers and turn-based strategies gamers. Finally, the last three significant results of possible correlation between demographics groups and theme scoring and social collaboration seem to indicate that my game might appeal more to the 32-38 years group and women. While the user perspective is critical, it is also important to see how these findings resonate with the game developers.

In the next chapter, Chapter 5, I relate my discussion with independent game developers in Tokyo. Then I discuss how to use some game genre design could be expanded to develop with a purpose. I had initially planned to get extensive feedback on my prototype (Chapter 3 – 3.10 Prototype) and on gamers' preferences (as shown in the following sections) from independent game developers. However, without having a fully playable level to show them, they have difficulty translating the abstract concept to the deeply experiential practice of play. Instead, the independent game developers I talked to provided particular advice. Game design means placing a game in a particular genre, and they related initial game genres I might consider.

Chapter 5 - Game Developer Feedback and Game Genres

5.1 Discussions with independent game developers

Thanks to its convenient train and metro networks and the presence of major video game companies and game localization companies, Tokyo offers monthly meeting opportunities with both professional and independent game developers. Since 2003, John Ricciardi, co-founder of 8-4 Ltd., a game localization company, has been organizing the weekly Otaru *nomikai* ("drink-togethers") at Otaru, a restaurant in Nakameguro. More recently, the Tokyo Indies Meetup is organized in Shibuya monthly by Alvin Phu, indie developer of Dot Warriors Games. Also close by in Kichioji, Picotachi is hosted on a monthly basis at Pico Pico café. Indie developer Joseph White of Lexaloffle, organizes Picotachi, an event where anyone can give presentations. Finally, the GameDevDrinkUp Tokyo chapter, which meets monthly, was co-started in Shinjuku by Adelle Bueno, Senior Technical Artist at Square Enix.

I gave a presentation at Picotachi, but my presentation, which focused on gamer preferences, as presented in Chapter 3, as well as the prototype description, was not effective in eliciting feedback, so I changed my approach at the Tokyo Indies Meetup. I created a shorter presentation for the Tokyo Indie Meetup and showed it directly to two indie game developers. Both explained that without seeing a fully playable level, the description of the gameplay as explained in my prototype is difficult to assess. We did discuss however, a possible game genre that might work for the next step. The first indie developer suggested that I should think about roguelike games, and find the right balance in keeping the players interested, yet not frustrated. I discuss applying existing game genres to make games, which have a purpose beyond entertainment in the next three sections.

5.2 Roguelike Games

As indie game developers have explained to me, a roguelike game might be a good fit for my purpose. Roguelike games, though usually violent in nature, are essentially about survival. The player must remain alive by carefully using the resources found and by avoiding unnecessary actions, such as conflict with creatures which have much higher damage level than the player character. Roguelike games tend to be extremely punishing and hence make players feel accomplished when they advance through the game. Roguelike games include turns in a grid-based landscape. They possess permanent-failure conditions, which force the player to restart the game from the start losing all their progress. Sequences are randomly generated, and have random conflict outcomes. The inventories included in the game are limited. Only one character is the center of the story. Roguelike games force the player to think strategically. In a game fostering social collaboration, there would have to be more than a single character, and the game would need to be altered to allow for multiple protagonists. The game could still be controlled at random, once a random number of turns are completed. This randomization would force the player consider the needs of the group over individual motivations more carefully. Similarly the inventory would be more restricted, though the ability to exchange, lend, or borrow a single object with other characters encountered in the immediate vicinity would be provided. Recently, the roguelike genre has been more popular with games such as *Rogue Legacy* and *Don't Starve*. I discuss visual novels in the next section, which is another genre who is becoming more popular.

5.3 Visual Novels

Visual novels can tell many stories, although they tend to be about social relationships. The stories often unfold through dialogue, first person narration, and monologue that reflect on social interactions. Traditional visual novels, as previously described, are popular in Japan, and have a following globally, though the genre is

predominantly played in Japan. These visual novels emphasize reading, and to some extent listening to a story. Some player-controlled actions or decisions can affect the outcome of the story. Crafting a plot structure is central to visual novel design. One way to emphasize social collaboration in a visual novel would be to have the player play the same story from multiple perspectives. The actions of multiple characters are influencing the same game environment at the same time. For example, a decision made by one character would change the ability of another character to make a decision. In order to achieve the best ending, the player would then have to weigh all the choices made for each character in order to achieve the best group future, though not necessarily achieving the best plot outcome for each individual. Telltale Games is a game studio whose story focus games taking place in popular universes (such as The Walking Dead, Jurassic Park, and more recently, Game of Thrones) can be seen as a newer type of Visual novels, as this developer places the emphasis on story and decision making but deliver the experience in a way that is more like a movie than a traditional visual novel. Their games also draw on graphic adventure games tradition which I discuss in the next section.

5.4 Graphic Adventure Games

On personal computers, graphic adventure was a popular genre established in the 1980s, and intensified in the 1990s. Perhaps because graphic adventures were slower paced, violent actions were not the center of the gameplay, but instead these games emphasized puzzle solving, dialogue and exploration. One of these graphic adventures, *Day of The Tentacle* (Lucas Arts 1993) has been announced to be reconfigured from the personal computer to the PlayStation 4 console. These games can employ different types of puzzles. Early video games on personal computers often took place as text adventures where the player could use action words and objects word typed in the correct syntax to progress through the story. Graphical adventure games evolved from those text adventures. Much of

gameplay was non-violent in nature and centered on solving problems rather than direct violent confrontation. In order to create a learning environment focused on social collaboration, a graphics adventure would have to emphasize solving puzzles so that in-game characters and players must engage in cooperative play. The next two sections discuss games in the classroom and serious games.

5.5 Games in the classroom

Originally, I created the Anthrogamer scenario for gamers who primarily play for entertainment. However, I suggested that with more intentional game design more serious purposes can be integrated with that entertainment. In the future, I suggest expanding on this research beyond into new contexts, incorporating games into the classroom. Moreover this project, and the subsequent findings can be used in promoting gamification, using games to motivate behavior. The emphasis on social collaboration and reducing selfish choices, edges into the world of serious games. Such games prod players into considering vital social issues, while keeping a game-like or game structure.

While situated learning usually encompasses informal learning in a non-classroom environment, Gee (2008) is an advocate for the use of game-like learning in the classroom as games are effective learning vehicles. Games can be used in the classroom not solely to teach curriculum contents, but also to foster a collaborative learning environment where students not only learn from the teacher but also from one another. Gee argues that classroom games would make better tests than exams which are given on specific days and test the performance of the student on that specific day.

5.6 Gamification and Serious Games

Gamification is defined as “the process of turning an [non-game] activity or task into a game or something resembling a game.” Gamification often copies the process of having unlockable achievements, trophies, badges once requirements are met. Gamification could be

expanded into more complex activities that would create a social learning environment, workshops, where people who would not normally interact with one another would be guided to do so. Gamification is effective for motivating, changing behaviors, rewarding, and tracking of efforts (Designing Digitally 2014).

Serious games are defined as games whose primary goal is education, instruction, professional training and not entertainment. Serious games can be referred to as game-based learning and can offer context, engage students, and make instruction more interesting (Designing Digitally 2014). Serious games include a variety of applications. They are used in military developed simulations, and training exercises, and produce curriculum-based games. In purpose they strongly overlap with games used in the classroom, as discussed in the previous section. While the classroom is a specific environment where serious games are used, gamification and serious games can be used in a variety of institutional contexts.

Serious games could be used for real conflict resolution were stakeholders would be asked to resolve conflicts in a non-violent manner, using real-life diplomacy and social collaboration. We could imagine that previous conflict or case studies would be studied and simulated in order to achieve better diplomatic outcomes. Serious games are already used by companies to train their customer service staff. Corporations not only use game concepts to reward training compliant employees (gamification) but to train them as well (serious games). Serious games could be used as a vehicle for learning about geopolitics. They can help people unravel the roots of existing, on-going conflicts. Serious games are used to encourage online activism to promote social change.

Serious games could also be designed to develop social awareness for situations that are unfamiliar, and to develop empathy for individuals affected by those situations. The applications abound. Gamers can “live” in war-torn areas, or experience difficult everyday situations faced by transgendered individuals. Serious games could foster a learning

experience that goes beyond a movie, documentary, or novel. The audience is placed in a situated-learning context, where the players can act and reflect upon the larger issues from discrete points of view. A great serious game example is *SuperBetter*. *SuperBetter* is a web and mobile serious game by Jane McGonigal and her team, leverages the strengths of game design, to help its users cope with health issues to build "personal resilience: the ability to stay strong, motivated, and optimistic even in the face of difficult challenges" (SuperBetter 2012). While games solely for entertainment usually proceed from established assumptions about reality, serious games can challenge those assumptions.

This chapter illustrates what we can learn about game users, gamers. It also presents some of the challenge and opportunities that can be harnessed by game designers. The final chapter, Chapter 6, concludes this project report by synthesizing what I have learned and considering possible applications for this research.

Chapter 6 - Summary, Limitations and Applications

6.1 Research Summary and Limitations

Video games are primarily designed to entertain. This project's three gamer personas remind us of that purpose. Naos plays her games because she enjoys interactive storytelling. Alvior plays games because they are a good way to relax and connect with his favorite universes across media. Yildun plays his favorite franchises because they are fun and a good way to interact with friends. Entertainment and escape are primary drivers of their play. However the theory of situated learning helps us understand that games can achieve their primary goal, and also create learning environments in which gamers could work their way through new knowledge. Creating these learning environments requires video game developers to problematize their assumptions. If the aim is to create a game that fosters collaboration and coexistence, identification with single hero player character needs to be de-emphasized. Violent actions and competition need to be replaced by a compelling alternative as well.

In order to better understand how longtime gamers experience games and their design, I used a user research approach. I drew from my own experience as a longtime gamer and at the time amateur game developer. I also used possible game review categories to set initial game design requirements emphasizing non-violent gameplay and build my interview questions. I therefore used established game design elements to structure my interviews. How did longtime gamer relate to gameplay, audiovisual presentation, thematic development, replay value, physical settings, story and social interaction?

I found longtime gamers to interview by leveraging online networks and a major gaming website community. I conducted most of my interviews using Skype. When I analyzed the interviews data, the order in which I had ordered the game design elements seemed to have biased by my background in programming. Instead, discovered I needed to

reorder game designs elements emphasizing story and gameplay. Incorporating social collaboration across all the established game design elements was a better way to structure the prototype game design, Anthrogamer. Story must drive the gameplay, and must be integrated into the gameplay as well. Gameplay mechanics should push the player to be less reliant on one single character, but instead consider the social group as a whole. The game should allow players to customize their experiences by providing options for controls, achievements, in-game statistics, but also to modify the game visually. Social, player-to-player interactions should allow for both live interactions but also asynchronous sharing interactions to allow players where the internet is not as reliable and accessible to participate.

With these research-based recommendations, I wrote the description of the game prototype, by leveraging Richard B. Lee's classic ethnography *The Dobe 'Ju/Hoansi*, and creating a science-fiction story romanticizing some aspects of a hunter and gathering society and comparing and contrasting it to the player's original home world. This game prototype's new gameplay mechanics deemphasize identification with one character by making the player lose control over the currently controlled character at random. Materialist impulses are counteracted by restricting inventory to one object at a time. Yet, the game also promotes a cross-cultural experience. Players compare and contrast gameplay set in industrialized social context with those sections played in non-industrialized settings.

I then constructed an online evaluation survey of the game prototype description using Survey Monkey. The story was the highest rated element, perhaps because it is very difficult to demonstrate new gameplay mechanics without any existing playable references. Based on statistically significant results, women and 32-38 age group seemed to find the themes more appealing (positive correlations), and 32-38 age group also found the social collaboration to be more appealing, as demonstrated by positive correlations.

While the story of the prototype was explained effectively, gameplay mechanics are much harder to explain. I briefly discussed my dilemma with two indie game developers at the Tokyo Indies Meetup, and they suggested I examine existing game genres, roguelike games styles can be employed to expand and produce a playable game level that could demonstrate gameplay mechanics. I took their advice and looked at several genres including roguelike games, visual novels, and graphical adventure games. Each style offered elements that could be used to enhance storytelling and collaboration. I also looked at how my theoretical approach and methodology could be expanded to games in the classroom and serious games.

Reflecting back on my project, my research had the following issues. My initial scope was too grand and my online survey was too complicated. As I look back at my methodology, it seems I could have be more effective focusing on the story in game design exclusively. Being a programmer, as were the first two indie developers I consulted, led me to over-emphasize gameplay over story. The story of a game can be explained verbally in a way that a gameplay often cannot. In hindsight, I should also have simplified the online survey. I used too many categories for game played (32) while completely missing the category, visual novels. While that category was captured in "other" field, I missed an opportunity to collect more data on how gamers experience stories. My instructions to participants to estimate the average monthly total hours did not work as effectively as I expected. Finally, it might have been better, for this online survey, to use a shorter description of the prototype and focus only key specific game design elements, such as story, settings and social collaboration, instead of all seven (story, gameplay, replay, presentation, themes, settings, and social collaboration). Nonetheless, the findings from this multi-method project do have value in informing game design. In the next section, I discuss three possible applications of this project research.

6.2 Applications

After talking to users/gamers, examining the literature and brainstorming with developers, I see three possible applications. First, the game originally drew on an iconic text in introductory cultural anthropology, and may prove to be a suitable addition to classroom engagement. Second, I discovered that developing personas derived from gamers is a frontier in game development that is underutilized. Third, although it has now become more routine, interactive online ethnographic research, combining social network media, Skype, and online survey tools such as Survey Monkey can create a useful combination that can be harnessed in other user/gamer design research. *Anthrogamer and the Stargazers*, the game I described in this project, could be used in an introductory cultural anthropology course to illustrate core anthropological concepts such as the way in which small-scale societies create sustainable subsistence strategies and use alternative trading systems to develop economic systems. Placing the gamer in multiple social contexts, both industrial and non-industrial, builds the capacity for non-judgmental empathy and provides an opportunity to discuss cultural relativism and to make cross cultural comparison. Egalitarian gender roles and a flattened social structure support discussions of social inequality and its roots in political economy.

Engaging students as they play their way through situations to learn core concepts can motivate students to participate actively in their educational experiences. While games in the classroom tend to emphasize quizzes and memorizations, the use of interactive puzzle solving or managing serious issues such as resource management might be more engaging. Adding game elements to course-based learning, or creating a virtual reward system for students is a potent form of active learning. Though at first, as this project evolved over time, I did not think of using personas, such composite individuals are an effective way to place gamers in the game design process.

It is important to think through and select individual gamers who would represent, promote and advocate for these personas in the game development process. It seems like a brand new role could be created, a gamer persona evangelist who would work inside the game design, or in Japan game planning, department. This new job role is parallel to the responsibilities given community managers in online communities. These advocates, who work in social media such as Wikipedia, monitor customer service and marketing to listen to customer feedback. In user-sensitive design such advocates can insert insights much earlier in the production stage in the video game development.

Research methodologies are changing and researchers, especially applied researchers, should embrace them. Though it is optimal to be able to meet, and interact with interview participants in social research, technology such as Skype, which not only offers free voice calls, but video calls and text messages, can allow researchers to connect with communities, such as longtime gamers, in a way that we were unable to do before. This project would have not been possible, had I been unable to conduct my research online. Out of 17 interview participants, I was only able to meet face-to-face with only one of them. Online surveys tool such as Survey Monkey, can help reach more robust qualitative global sample, in a way that is much easier to produce and to invite people to participate.

This project has looked at ways to apply social science research to game design in order to create games that have an impact beyond entertainment. Although many questions remain unexplored, such as how to best implement such games, I hope that this project can inspire video game developers, researchers and gamers to think about expanding the realm of what video games research.

References Cited

Adams, Ernest

2000 Gamasutra - Casual Versus Core. Gamasutra. http://www.gamasutra.com/view/feature/131529/casual_versus_core.php

Adlin, Tamara and Pruitt, John

2010 The Essential Persona Lifecyle: Your Guide to Building and Using Personas. Burlington, MA: Morgan Kaufman Publishers.

Aoyama, Yuko and Izushi, Hiro

2006 Industry evolution and cross-sectoral skill transfers: a comparative analysis of the video game industry in Japan, the United States, and the United Kingdom. Environment and Planning A 38(10): 1843-1861. doi:10.1068/a37205.

Apple

2015 Distribute your App - iOS Developer Program - Apple Developer. Apple Inc. https://developer.apple.com/programs/ios/distribute.html

Barrerio, Victor

2012 Sony Stop Shipping PlayStation 2 Units in Japan. Rappler. http://www.rappler.com/life-and-style/technology/18779-sony-stops-shipping-playstation-2-units-in-japan

Bernard, H. Russell

1995 Research Methods in Anthropology: Qualitative and Quantitative Approaches, 2nd ed. London: Altamira.

Chandler, Heather M.

2014 The Game Production Handbook, Third Edition. Sudbury, MA: Jones and Bartlett Publishers.

Cook, Daniel

2009 Review of The Art of Game Design. Gamasutra - Book Review: The Art of Game Design. Gamasutra http://www.gamasutra.com/view/feature/132326/book_review_the_art_of_game_design.php

Designing Digitally

2014 Gamification and Game-Based Learning: What's the Difference? Gamification | Game-based Learning | Designing Digitally, Inc. Designing Digitally, Inc.

Doull, Andrew

2014 Gamasutra - Opinion: Amateur vs Indie Games - The War? Gamasutra. http://www.gamasutra.com/view/news/108183/Opinion_Amateur_vs_Indie_Games__The_War.php

Electronic Software Association

2015 About ESA - Electronic Software Association. Electronic Software Association. http://theeesa.com

Gee, James P.

2004 Situated Language and Learning: A Critique of Traditional Schooling. London: Routledge.

2008 Game-Like Learning: An Example of Situated Learning and Implications for Opportunity to Learn. http://www.academiccolab.org/resources/documents/Game-Like%20Learning.rev.pdf

Google

2015 Transaction fees - Developer Console Help. Google. https://support.google.com/googleplay/android-developer/answer/112622?hl=en

Granic, Isabela, and Lobel, Adam and Engels, Rutger C. M. E.

2014 The Benefits of Playing Video Games. American Psychologist 69 (1): 66-78. https://www.apa.org/pubs/journals/releases/amp-a0034857.pdf

Hung, Chia-Yuan

2006 Video Games in Context: An Ethnographic Study of Situated Meaning-making Practices of Asian Immigrant Adolescents in New York City. Proceedings of DiGRA 2007 Conference. Digital Games Research Association (DiGRA). http://www.digra.org/wp-content/uploads/digital-library/07312.06116.pdf

Kay, James

2013 Japanmanship. Tokyo, Japan: Score Studios LLC.

Lambie, Ryan

2013 The 1983 videogame crash: what went wrong, and could it happen again? Den of Geek! http://www.denofgeek.com/games/24531/the-1983-videogame-crash-what-went-wrong-and-could-it-happen-again

Lave, Jean, Wenger, Etienne

1991 Situated Learning: Legitimate Peripheral Participation. New York: Cambridge University Press.

Lee, Richard B.

1993 The Dobe Ju/'hoansi, 2nd ed. Toronto, Canada: Hartcourt.

Picard, Martin

2013 The Foundation of Geemu: A Brief History of Early Japanese video games. Game Studies 13(2) ISSN:1604-7982. http://gamestudies.org/1302/articles/picard

Ryan, Tim

1999 Gamasutra - The Anatomy of a Design Document, Part 1: Documentation Guidelines for the Game Concept and Proposal. Gamasutra http://www.gamasutra.com/view/feature/131791/the_anatomy_of_a_design_document_.php

Schell, Jesse

2008 The Art of Game Design. Burlington, MA: Morgan Kaufman Publishers.

Sony Computer Entertainment Inc.

2011 PlayStation Cumulative Production Shipments of Hardware | Corporate Information | Sony Computer Entertainment Inc. Web Archive. http://web.archive.org/web/20110722094946/http://scei.co.jp/corporate/data/bizdataps_e.html

Sotamaa, Olli

2007 Perceptions of Player in Game Design Literature. Situated Play, Proceedings of DiGRA 2007 Conference. Digital Games Research Association (DiGRA). http://www.digra.org/wp-content/uploads/digital-library/07311.59383.pdf

SuperBetter

2012 FAQ - SuperBetter. SuperBetter. https://www.superbetter.com/faq#what-is-superbetter.

Tran, Minh Q. and Biddle, Robert

2008 An Ethnographic Study of Collaboration in a Game Development Team. Loading… 3(5) http://journals.sfu.ca/loading/index.php/loading/article/view/70/63

Video Game Sales Wiki

N.d. Video games in Japan - Video Game Sales Wiki - Video Game Sales, Charts, NPD, Graphs, Video Game Figures, and more! Video Game Sales Wiki. http://vgsales.wikia.com/wiki/Video_games_in_Japan

N.d. Video games in the United States - Video Game Sales Wiki - Video Game Sales, Charts, NPD, Graphs, Video Game Figures, and more! Video Game Sales Wiki. http://vgsales.wikia.com/wiki/Video_games_in_the_United_States

Ward, Jeff

2008 What is a Game Engine? - GameCareerGuide.com. GameCareerGuide.com http://www.gamecareerguide.com/features/529/what_is_a_game_.php

Winter, David

2013 Pong-story : Magnavox Odyssey, the first video game system. Pong-Story. http://www.pong-story.com/odyssey.htm

Zagal, José P. and Rick, Jochen and Hsi, Idris

2006 Collaborative games: Lessons Learned from Board Games. SIMULATION & GAMING 37(1): 24-40. DOI: 10.1177/1046878105282279

APPENDIX A. Interview Consent Form

Consent Form (for Adult Participants)
Agreement to Participate in Research
Responsible Investigator: Benjamin J. S. Dubois
Ethnographically Informed Design: Collaborative Game Design

1. You have been asked to participate in a research study in which you will answer questions about your video console or computer gaming. The purpose of the project is to learn more about longtime gamers and to create a collaborative game design based on the gained ethnographic knowledge and general knowledge drawn from Anthropology. You understand that:

2. You will be asked to answer questions about your video console or computer gaming in general and your favorite game designs. You will have conversations with the researcher, and the interview and conversations will be recorded with a digital recording device. That material will be transcribed and modified to enhance confidentiality.

3. You will be asked to play your favorite game(s) with the primary investigator to illustrate some of the game design aspects you enjoy the most. This online gaming sessions will not be recorded via digital recorder; however, notes will be taken.

4. Because of the careful and confidential way in which the project will be conducted, the possible risks of this study are minimal. Your name and the names of other people you mention will be changed.

5. The possible benefits of this study for you are indirect, giving you the satisfaction of sharing information about an activity that is important to you. If you desire, you can be kept informed about publications and presentations based on the information you gave.

6. The results from this project may be published, but any information from it that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. If you wish to edit or delete any portion of the information you may do so by contacting Benjamin J. S. Dubois, MA Student in the Anthropology Department at San Jose State University [bd@jsidd.com]

6. There is no compensation for participation in this project.

7. Questions about this research may be addressed to Benjamin J.S. Dubois, MA Student in the Anthropology Department at San Jose State University [benjamin.dubois@students.sjsu.edu].

Complaints about the research may be presented to Charles Darrah [+1-408-924-5314 or chuck.darrah@sjsu.edu], Chair of the Anthropology department. Questions about research subjects' rights, or research-related injury may be presented to Pamela Sacks, Ph.D., Associate Vice President, Graduate Studies and Research, at [+1+408- 924-2427 or pamela.stacks@sjsu.edu].

_____ Initial

8. No service of any kind, to which you are otherwise entitled, will be lost or jeopardized if you choose to not participate in the study.

9. Your consent is given voluntarily without being coerced; you may refuse to participate in this project or in any part of this project, and you may withdraw at any time, without prejudice to your relations with San Jose State University. You understand that you are free to decline to answer any question or refuse to allow any observations of any aspect of your life for any reason whatsoever. You may refuse to participate in the entire study or in any part of the study. You have the right to not answer questions you do not wish to answer. If you decide to participate in the study, you are free to withdraw at any time without any negative effect on your relations with San Jose State University.

10. You have received a copy of this Written Consent Form for your records.

You wish to place the following restrictions on your participation or to make the following modifications to the consent form:

YOU HAVE MADE A DECISION WHETHER OR NOT TO PARTICIPATE. YOUR SIGNATURE INDICATES THAT YOU HAVE READ THE INFORMATION PROVIDED ABOVE AND THAT YOU HAVE DECIDED TO PARTICIPATE.

PARTICIPANT'S NAME:
_____

DATE:
_____

PARTICIPANT'S
SIGNATURE:_____

The signature of a researcher on this document indicates agreement to include the above named subject in the research and confirms that the subject has been fully informed of his or her rights.

RESEARCHER'S NAME:_____, San Jose State University

DATE:_____
_

RESEARCHER'S SIGNATURE:
_____

APPENDIX B - Interview Questions

Skype online voice interviews (no webcam required) and in person Interviews (conducted in English only)

Demographics:

D1. What is your gender?

D2. What is your age? (You need to be 18 or over to participate)

D3. Do you consider yourself a lifelong console/video and/or computer gamer? Why?

D4. What race or ethnicity do you consider yourself?

D5. What country do you currently live in?

D6. What is your native language?

D7. What country are you a citizen of?

Background:

B1. When did you start playing computer/console games? (Where)

B2. Where do you play computer/console games? (How, how often)

B3. Who do you play with?

B4. Do you participate actively in an online community of gamers (e.g., post in forum, blogs, comments, user reviews...)? If so, which one(s)?

B5. Why do you play games?

Experiences:

We are now going to talk about detailed experiences you have had with games.

E1. Please tell me about your first gaming experience(s).

E2. What kind of games do you like to play?

E3. Could you now detail your most recent experience(s)?

E4. What do you think of the current state/trend of the game industry?

E5. What else do you do online/on the computer when you are not playing games?

E6. Please tell me about experiences when you were most satisfied/disappointed?

E7. Please tell me about friends you made by playing games. How did it happen?

Game Design:

You have just described your experiences with playing games (recap citing specific examples), so with those experiences in mind I would like to ask you questions about the different design elements that go into games.

D1. How do you collaborate with other players?

What do you enjoy about the games you play? (American/Japanese/European)

D2. What types of Gameplay do you enjoy? Are there more recent types of Gameplay which you enjoy?

D3. What types of Presentations/Visuals do you enjoy? Are there more recent types of Presentations/Visuals which you enjoy?

D4. What types of Themes do you enjoy? Are there more recent types of Themes which you enjoy?

D5. What types of Replay Options do you enjoy? Are there more recent types of Replay Options which you enjoy?

D6. What types of Settings do you enjoy? Are there more recent types of Settings which you enjoy?

D7. What types of Stories do you enjoy? Are there more recent types of Stories which you enjoy?

D8. What types of Social Collaborations do you enjoy? Are there more recent types of Social Collaborations you enjoy?

D9. What types of Online Communities do you enjoy? Are there more recent types of Online Communities you enjoy?

Achievement/Player Progression

A1. How do you play with respect to Achievements?

A2. What are your thoughts on Gamification?

A3. How important is that your (in-game) progress be visible?

Learning

L1. What have you learned thanks to your gaming experience/interactions with other gamers?

Innovation

2I1. What would make you play a game (type) that you don't play currently?

Edit Survey

Preview Survey | Send Survey »

To change the **look** of your survey, select a theme below.

Aqua Create Custom Theme

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Consent Form (for Adult Participants)
Agreement to Participate in Research
Responsible Investigator: Benjamin J. S. Dubois
Ethnographically Informed Design: Collaborative Game Design

1. You have been asked to participate in an online questionnaire in which you will answer questions about your video console or computer gaming and score elements of a game design. The purpose of the project is to learn more about lifelong gamers and to create a collaborative game design based on the gained ethnographic knowledge and general knowledge drawn from Anthropology. You understand that:

2. You will be asked to answer questions about your video console or computer gaming in general and to rate a game design. Your answers will be recorded in this online survey. Your name and contact information will not be recorded. Your answers will be aggregated to enhance confidentiality.

3. Because of the careful and confidential way in which the project will be conducted, the possible risks of this study are minimal. Any possible identifiable data will be altered.

4. The possible benefits of this study for you are indirect, giving you the satisfaction of sharing information about an activity that is important to you. If you desire, you can be kept informed about publications and presentations based on the information you gave, by visiting the project website: http://www.anthrogamer.com .

5. The results from this project may be published, but any information from it that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. If you wish to edit or delete any portion of the information you may do so by contacting Benjamin J. S. Dubois, MA Student in the Anthropology Department at San Jose State University [benjamin.dubois@students.sjsu.edu]

6. There is no compensation for participation in this project.

7. Questions about this research may be addressed to Benjamin J. S. Dubois, MA Student in the Anthropology Department at San Jose State University [benjamin.dubois@students.sjsu.edu]. Complaints about the research may be presented to Charles Darrah [+1-408-924-5314 or chuck.darrah@sjsu.edu], Chair of the Anthropology department. Questions about research subjects' rights, or research-related injury may be presented to Pamela Sacks, Ph.D., Associate Vice President, Graduate Studies and Research, at [+1+408- 924-2427 or pamela.stacks@sjsu.edu].

8. No service of any kind, to which you are otherwise entitled, will be lost or jeopardized if You choose to not participate in the study.

9. Your consent is given voluntarily without being coerced; you may refuse to participate in this project or in any part of this project, and you may withdraw

at any time, without prejudice to your relations with San Jose State University. You understand that you are free to decline to answer any question or refuse to allow any observations of any aspect of your life for any reason whatsoever. You may refuse to participate in the entire study or in any part of the study. You have the right to not answer questions you do not wish to answer. If you decide to participate in the study, you are free to withdraw at any time without any negative effect on your relations with San Jose State University.

10. You have received a copy of this Written Consent Form for your records. Press here to download a copy of this consent form.

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Q1 Edit Question ▼ Move Copy Delete

1. Please use this box if you wish to place the following restrictions on your participation or to make the following modifications to the consent form:

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YOU HAVE MADE A DECISION WHETHER OR NOT TO PARTICIPATE. BY CLICKING ON THE “NEXT” BUTTON, YOU INDICATE THAT YOU HAVE READ THE INFORMATION PROVIDED ABOVE AND THAT YOU HAVE DECIDED TO PARTICIPATE.

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Press here to download a copy of the consent form.

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Demographics

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Q2 Edit Question ▼ | Add Question Logic | Move | Copy | Delete

2. What is your gender?

Female

Male

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Q3 Edit Question ▼ | Move | Copy | Delete

3. What is your age? (You need to be 18 or over to participate)

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Q4 Edit Question ▼ | Add Question Logic | Move | Copy | Delete

4. What race or ethnicity do you consider yourself?
The following is a standard list used in public institutions in the United States such as San Jose State University.

Race/Ethnicity

African American / Black

American Indian / Alaskan Native

Asian

Pacific Islander

Hispanic

White

Other (please specify)

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Q5 Edit Question ▼ | Move | Copy | Delete

5. What country do you currently live in?

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Q6 Edit Question ▼ Move Copy Delete

6. What is your native language?

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Q7 Edit Question ▼ Move Copy Delete

7. What country are you a citizen of?

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Hours Played

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Q8 Edit Question ▼ Move Copy Delete

8. Using the following game type categories, please list in the following texboxes, to the best of your ability:
A. the number of hours per month played in each game type (one month = 720 hours max)
You can leave blanks for game categories you do not play at all.
B. And: One or more example(s) of a game you play under each category you played hours in.
The game type categories which are used to quantify played hours as follow. In each game type categories, the researcher provided one or more example.

1. Non Role Playing Game (RPG) Linear First Person Shooters (FPS) (ex: Modern Warfare 2)

(A linear game only allows gamers to play in predefined non “revisitable” areas, where as a non linear game allows for free movement throughout the game world).

2. Non RPG Linear Third-Person Shooter (ex: Gear of Wars 2)
3. FPS Action Open RPG with Guns (ex: Fallout, Borderlands)
4. First Person View Action Open RPG without Guns (ex: The Elders Scrolls IV Oblivion, The Elder Scrolls V - Skyrim)
5. Third Person Action RPG (ex: Fable 2, The Witcher, Mass Effect)
6. Object Based (as opposed to Stats Based) Action Adventure (ex: Legend of Zelda)
7. Japanese, Command Based, RPG (ex: Final Fantasy XIII)

8. Top Down Real Time Strategy Games RTS (ex: Starcraft II)
9. Exploratory Puzzle Games (ex: Myst)
10. Tile Based Puzzle Games (ex: Bejeweled)
11. Non RPG Non Linear FPS (not common, closest would be Far Cry 2)
12. Non RPG Non Linear Third-Person Shooter (ex: Grand Theft Auto IV)
13. Simulation Racing (ex: Grand Turismo)
14. Arcade Racing (ex: Burnout)
15. Sport Games (ex: Madden Football)
16. Platform Game (ex: Super Mario)
17. Arcade Fighting Game (ex: Street Fighter, Fatal Fury)
18. “Life” Simulations (Ex: Sim games)
19. Turned Based Strategy Games (ex: Civilizations)
20. Music / Rhythm Games (ex: Rock Band)
21. Party Games (ex: Mario Party)
22. Trivia Games (ex: You Don’t Know Jack)
23. Card Games (ex: Solitaire)
24. Board Games (ex: Checkers)
25. Pong Games (ex: Arkanoid)
26. MMO Action RPG (ex: Vindictus, you can doge/roll)
27. MMO traditional RPG (ex:World of Warcraft)
28. Retro Arcade Shoot’em up (ex: Contra, R-Type…)
29. Retro Beat’em up (ex: Double Dragon…)
30. Retro Arcade Classics not fitting in above retro categories (ex: Pacman, Frogger, Donkey Kong..)
31. Light Gun (ex: House of the Dead)
32. Other Fill in the Blank (Free Form Text box)

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Game Design Elements Evaluation

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Game Design Elements Evaluation

You will now be asked to rate to score each of the game design elements. Each game design elements will be presented in a multimedia format (descriptive text, picture, and/or media clip). You will be asked to provide a score from 0 to 10 using a real number. Ex: 5.0, 4.997, 1+ 1/3 are all valid scores. Any number out of range will be replaced by the closest in range number. If you use rating of -1 it will replaced to be 0. This is similar to a game review rating scale, though you might elect to use fractions (For example IGN Rating scale is explained at: http://games.ign.com/ratings.html) The following design elements were defined after a rapid ethnography of lifelong gamers and the resulting artifacts (descriptive texts, pictures, and/or media

clips) were generated as illustrations of the game design presented.

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Story

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Story: The following descriptive texts, pictures, and media clips, are aimed to define, present, and illustrate the Story and should answer the following questions about the game design:
What is the story or stories told by the game? Who is the protagonist? Who is telling the story? Is this person omniscient?

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In this game, you play multiple protagonists. You play a gamer – “anthrogamer” in a heavily urban, industrialized, technology centric world, while you “play” multiple members of a community on a remote planet – “the stargazers”. The story is told by a narrator in a way which is similar to old point and click adventure games, even though this is not a point and click adventure but an adventure which can be played solely with the use of a gamepad.

The story centers on the comparison of the life of anthrogamer to the lives of the stargazers. This will be done without judgment nor advocacy of one over the other. Throughout the story you will explore different aspects of life including: subsistence (activities which keep people alive), trade, shelter, beliefs, healing, ownership and social organization.

The central motivation of the player throughout the story will be to resolve a mystery - a global epidemic, a virus which is slowly making everyone sick in anthrogamer’s world. While anthrogamer’s world has the technology to communicate, travel, and create new drugs, they are not sure where to start.

The stargazers decide to intervene by entering anthrogamer’s dream. Yet the player will not play one specific stargazer, but will rather have to play multiple stargazers. While anthrogamer’s society is centered around the individual and personal property which has exarcebetated the dependence of technology and industrialization, the stargazers have been forced to work together for thousands of years in order to sustain themselves. While the stargazers have not developed physical/industrialized technologies, they have gained great extra sensory perceptions which equip them with nearly psychic technology (at least in anthrogamer’s eyes): they are expert trackers, botanists, and spiritual healers. While technologically outsiders might mistakenly judge them to be too simplistic, stargazers are quite advanced in the way they organized their social subsistence/survival and maintain their omnipresent, forever required, social cohesion.

The story is primarily non violent in the sense that no armed physical conflicts takes place in the scenes that the player play through, though characters might talk about violence and hunting wild game for meat. However it is the belief of the stargazers that residual negative spiritual energy and restless spirits might be the virus itself, and it cannot be cured or even treated by physical actions or drugs alone.

The world of anthrogamer is in turmoil: not only has the virus made everyday life activities more demanding, it happened during a worldwide financial crisis. After reading the health of anthrogamer’s world in the stars, and a long deliberation among themselves, the stargazers decide to reach out via dreams, not out of compassion but out of necessity: the virus will reach their world soon.
The world of the stargazers was once inhabited by a vast empire which built castles. Not much is known about this vast empire, but their once upon a time presence of the stargazers world is quite noticeable in certain areas.

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The stargazers do not own anything, though they might hold on to something while accomplishing a task: they share wild game hunting weapons, plant foraging tools, cooking utensils, healing and record keeping materials. Star gazers do not have real storage containers either. So the player’s control of the stargazers will be constrained by this no-ownership practice. Added to this limitation, because the player is traveling to the stargazers in a dreamlike state, their consciousness might switch from one stargazer to another in a moment’s notice, in a quasi-random fashion. This pushes the player to always play stargazers as a collaborative, and rather than separate individuals. Though stargazers personalities and willingness to help (to be controlled in this dream like state) might vary greatly. Just because they agreed to help doesn’t mean they are the player’s complete puppets.

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Q9 Edit Question ▼ | Move | Copy | Delete

9. Story - Based on all the information above, how would you score the Story of the game design presented? (0 to 10).

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Q10 Edit Question ▼ Add Question Logic Move Copy Delete

10. Story - Was the information provided enough to score this design element? Yes or No.

Yes

No

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Gameplay/Replay

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Gameplay & Replay:
The following descriptive texts, pictures, and/or media clips are aimed to define, present, and illustrate the Gameplay and Replay value of the game design and should answer the following questions about the game design: What makes the game tick? What makes it entertaining? What are the core mechanics? What are the rules of the games (rewards and punishments)? What is the goal of the game? What is the compelling reason to replay the game once the main “story” mode has been completed? Can each level or chapter be replayed? Are there extra game modes unlocked by completing the game once? Are there hidden objects? Is there a hidden or bonus story?

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From the start, in order to be achievable and to work within the ethical expectations & implications of an social sciences/ academic setting, this game had the following self-imposed required contents:
2D gameplay and graphics, Non violence against human and human like characters, No gun play, Social Collaboration driven, Anthropological knowledge, skill based (as opposed to experience/time based), exploratory, alternative trading system, urban, character based, character/story driven, cross cultural appeal, single player game with sharing components, rituals, promoting self reflection and empathy.

The best way to approach the specific game mechanics is to take one step at a time.
First let’s talk about control:
While there is a lot of advancement into motion and alternative way of controlling a game, all the gamers who participated in this study are still almost exclusively “gamepad” users. So the first requirement is that this 2D game must be able to support a more traditional control scheme:
1. via the digital arrow/directional pad on SNES like digital controller,
2. via one analog stick on PS/Xbox/Gamecube like controller.
3. We should also support the keyboard as this would make the game more accessible to gamers whose primary platform is the PC.
Once these are "covered" we can also offer more choices/options about motion control, but it is in no way shape or form required for the core gameplay, or

any gameplay for that matter.With this in mind, anthrogamer will be controlled via a more familiar control scheme:
A. The x axis on the dpad or analog pad is used to controller the play on the x-axis.
B. The y axis on the dpad is used to interact with the environment. Up can be used to enter/use a device, or go up on an elevating device (whatever form it turns out to take) down can be used to pickup items, or decrease elevating device.
C. Finally, if a special action is required such as jumping or running given particular context (in front of a small gap), or trying to outrun danger, any of the remaining buttons could be used.

What can the player do ?
Control anthrogamer in anthrogamer's world.
Control member of starglazers one at a time while in the dream state. In order to achieve a balanced difficulty, the rate at wich anthrogamer's consciousness move from one stargazer member to another will vary depending on conditions, progress in the storyline, and player selected difficulty settings. The game will also be divided in story's chapters.Perform context/story sentive "special" actions. At certain point of the story or in certain locations, the player will be given an additional button to interact with the world and characters.As I was trying to articulate a prototype, I made a conscious decision not to make a 2D platformer, because platforming mechanics would then take precedence over the story or the reason that compels the player to play the game. I wanted to have the story be the gameplay and guide the game mechanics. So in order to accentuate the story, there wont be any jumping unless the story requires it.

Let's explore, discover and create:
In order to uncover the mystery and find a solution to anthrogamer's world's virus, the player will alternate between anthrogamer's world and stargazers' world and make incremental discovery about stargazers culture. Emphasis will be given to exploration while using stargazers members. In order to extend the value of the game, the appearance of anthrogamer in anthrogamer's world will be customizable. Later, the appearance of items, and stargazers will be customizable as well in-game. Certain aspects of the landscape will be customizable as well. Allowing each player to taylor both anthrogamer's world and stargazers' world to their liking. Difficulty level will be adjustable. Finally, story chapters once completed will be repayable at any point of the game.

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The game will also keep track of statistics and will track progress certain achievements or challenges, which will challenge the player to explore the game even further.

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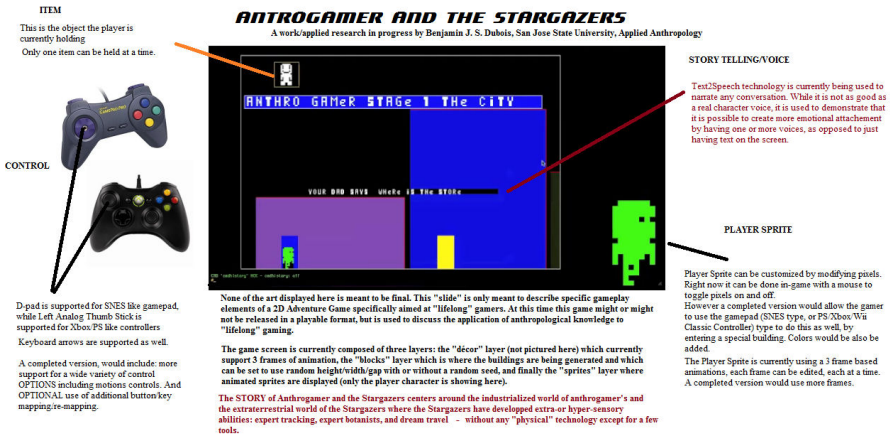

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The above video is not running at full frame per seconds rate. This is only a very rough prototype - none of the art, text, voice, sounds... are meant to be final.

The voice used for Text2Speech is free and it is called Kevin16. Unfortunately this was the only freely available voice. Text2Speech currently works by reading the content simple text files. A completed version would include actual recorded voice as opposed to Text2Speech.

Also pictured is the abilities to modify the pixel-based Player sprite by using the mouse at the moment.

Not pictured is that the game can be controlled with keyboard, SNES type gamepad, and Xbox/PS type of analog stick gamepad.

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Q11 Edit Question ▼ Move Copy Delete

11. Gameplay - Based on all the information above, how would you score the Gameplay of the game design presented? (0 to 10).

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Q12 Edit Question ▼ Add Question Logic Move Copy Delete

12. Gameplay - Was the information provided enough to score this design element? Yes or No.

Yes

No

+ Add Question ▼ | Split Page Here

Q13 Edit Question ▼ | Move | Copy | Delete

13. Replay value - Based on all the information above, how would you score the Replay value of the game design presented? (0 to 10).

+ Add Question ▼ | Split Page Here

Q14 Edit Question ▼ | Add Question Logic | Move | Copy | Delete

14. Replay - Was the information provided enough to score this design element? Yes or No.

Yes

No

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Themes/Settings/Presentation

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Themes, Settings and Presentation:
The following descriptive texts, pictures, and/or media clips are aimed to define, present, and illustrate the Themes, Settings and Visual Presentation of the game design and should answer the following questions about the game design:
What are themes in the games? Which ones are more direct, which ones are more subtle? Is it appropriate for everyone or only adults? What kind of language is used in the game? What world does the game take place in? When does the game take place? How many people live in it? What kind of weather and environments does it contain? What is the overall visual style of the game? Is the story moved forward by pre rendered scenes, or in game actions? Are dialogues spoken or displayed? Is there a musical sound track? Are the graphics 3D or 2D? Is the game text only?

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THEMES
The following themes are included: Global Virus, Coming of Age/ Rite of Passage, Sci Fi Fantasy, Humor, Discovery, Subsistence, Dreams, Sensory Skills and Multiple Perspectives.
SETTINGS
The following physical settings and/or locations are included: Ruins, Jungle, Desert, Beach, Industrialized City, Crowd, and Openess.
PRESENTATION
The game relies solely on pixel based art. It will offer details though not in HD sprites. Non HD sprites are used because it is easier to edit smaller resolution sprites while in-game. The game will include multiple animated layer: at the Minimum: Sprites Layer, Blocks Layer, Décor layer which offers some customizable background movement.

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Q15 Edit Question ▼ Add Question Logic Move Copy Delete

15. Themes - Was the information provided enough to score this design element? Yes or No.

Yes

No

+ Add Question ▼ Split Page Here

Q16 Edit Question ▼ Move Copy Delete

16. Themes - Based on all the information above, how would you score the Themes of the game design presented? (0 to 10).

+ Add Question ▼ Split Page Here

Q17 Edit Question ▼ Move Copy Delete

17. Settings - Based on all the information above, how would you score the Replay value of the game design presented? (0 to 10).

+ Add Question ▼ Split Page Here

Q18 Edit Question ▼ Add Question Logic Move Copy Delete

18. Settings - Was the information provided enough to score this design element? Yes or No.

Yes

No

+ Add Question ▼ | Split Page Here

Q19 Edit Question ▼ | Move | Copy | Delete

19. Visuals/Presentations - Based on all the information above, how would you score the Visuals/Presentations of the game design presented? (0 to 10).

+ Add Question ▼ | Split Page Here

Q20 Edit Question ▼ | Add Question Logic | Move | Copy | Delete

20. Visuals/Presentations - Was the information provided enough to score this design element? Yes or No.

Yes

No

+ Add Question ▼

+ Add Page

PAGE 8 Edit Page Options ▼ | Move | Copy | Delete Show this page only

Social Collaboration

+ Add Question ▼

Edit Question ▼ | Move | Copy | Delete

Social Collaboration: The following descriptive texts, pictures, and/or media clips are aimed to define, present, and illustrate the Social Collaboration and should answer the following questions about the game design: How do the players collaborate to progress in the game, in-game interactions and outside interactions? How is the progress of each player shared with the community? How can they communicate their experiences?

+ Add Question ▼ | Split Page Here

Edit Question ▼ Move Copy Delete

While MMO tend to emphasize social collaboration with other players, this game design intends to emphasize social collaboration through all aspects mentioned earlier and as reiterated below:

STORY/GAMEPLAY: the game can not be played by "holding on" to a character. The player is forced to control every member of the stargazers one at a time in order to progress in the story.

SETTINGS: The stargazers' world requires social collaboration among starglazers members in order to survive in a non industrialized, technology centric environment. The social goal of the stargazers is to get everyone to contribute in order to keep everyone fed and healthy.

THEMES: (as listed earlier) Global Virus, Coming of Age/ Rite of Passage, Sci Fi Fantasy, Humor, Discovery, Subsistence, Dreams, Sensory Skills and Multiple Perspectives.

VISUAL PRESENTATION: Visual Presentation is the aspect of the game which can be extended to also offer a sharing component. In a completed version, players would be able to share the new player sprites character they have created, as well as the "background" layer art they have created.

COLLABORATIVE MULTILAYER: The possibilities for a collaborative multiplayer mode include being able to join the story (and the see the art) of one player's world, text/voice chatting and finally trading the item being held by the player (only one item can be held at a time).

+ Add Question ▼ Split Page Here

Q21 Edit Question ▼ Move Copy Delete

21. Social Collaboration - Based on all the information above, how would you score the Replay value of the game design presented? (0 to 10).

+ Add Question ▼ Split Page Here

Q22 Edit Question ▼ Add Question Logic Move Copy Delete

22. Social Collaboration - Was the information provided enough to score this design element? Yes or No.

Yes

No

+ Add Question ▼ Split Page Here

Edit Question ▼ | Move | Copy | Delete

Thank you for completing this survey! If you have not done so, and still want to do so, you can press here to download a copy of the consent form.. I will also post my master's project report and any subsequent updates about this project on: www.anthrogamer.com
Thank you.

Benjamin J. S. Dubois

+ Add Question ▼

+ Add Page

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