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All the World's Computer Games

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ALL THE WORLD'S COMPUTER GAMES

An Interactive Qualifying Project Report

submitted to the Faculty

of the

WORCESTER POLYTECHNIC INSTITUTE

in partial fulfillment of the requirements for the

Degree of Bachelor of Science

by

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and

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Date: 2009-2010

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Abstract

Video games are a well-established and expanding medium. There is a notable lack of a classification system that is accurate and quantified; not much research has been done towards the creation of a classification system. This work has addressed this problem, and is progressing towards creating video game classification systems that are precise, quantified, and data-driven.

The empirical research method was used to define and verify a classification system. Significant data samples of video games were analyzed in order to determine a set of common attributes between video games. Other existing video game classification systems were assessed in relation to these attributes.

Examination of existing game classification systems revealed that they are inconsistent, ranging from being excessively ambiguous to being too specific. The video game data indicated that there are key similarities and differences between individual games.

These key similarities and differences between games were used to identify attributes. These attributes captured the appropriate information in video games that can be used to classify them. Trends in these attributes allowed the identification of genres, groups of video games similar in game-play and design.

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Acknowledgements

Professor George D. J. Phillies
Professor Jennifer DeWinter

References

1. Phillies, George, and Tom Vasel. Design Elements of Contemporary Strategy Games. Third Millennium, 2006. Print.
2. Crawford, Chris. The Art Of Computer Game Design. Osborne/McGraw-Hill,U.S, 1984. Print.
3. IGN. 2010. < http://www.ign.com/ >
4. GameSpot. 2010. < http://www.gamespot.com/ >
5. GamePro. 2010. < http://www.gamepro.com/ >
6. 1up. 2010. < http://www.1up.com/ >
7. Moby Games. 2010. < http://www.mobygames.com/home>
8. The Games Database. 2010. http://www.games-db.com/>.

Introduction

The "How We Got Here" section discusses the development progression of the project. In the "Genre Analysis" section, the idea of a classification system for video games is discussed. The "Video Game Attributes" section discusses and lists game-play attributes that are common among video games. The "Video Game Genres" section discusses and lists the video game genres that were indentified in this project. The section "Discussion of Narrative/Story in games" the impact of story in games is explored. The "Perspective" section talks about the difference between perspective and point of view and how we define and use perspective. The "Theme" section discusses and lists common themes in video games. In the "Scale" section, the idea of video game scale is reviewed. The "Shape" section addresses the concept of shape in video games. The "Outside the Scope of the Project" section discusses concepts related to this project that were not included in the main analysis.

How We Got Here

The first step in the project was to determine which attributes should be recorded for each game. In attempting to determine how much information is necessary we researched a sample of games and tried to fill in the categories we chose. The changes made to the categories were most important early on: If we had started to record a large number of games immediately, without continually critiquing and refining the categories, there could have been a large amount of wasted work or a need to re-analyze games already studied

once. After the categories were more refined we tried filling in data about the same set of games from multiple sources to ensure that our categories applied somewhat equally to all major game information resources . We created a list of game genres, perspectives, and attributes and applied them to the games we were recording. For a comparison test between the two of us, to reduce the possibility of human error in our data recording we both analyzed and recorded the same set of Sega Dreamcast titles. We were in agreement for an overwhelming majority of the information recorded about the games and what genres the games were. Having determined that we agreed about classification variables, we were confident that we could each record information on our own. And that we would still record data largely the same as what the other researcher would have recorded. In order for others to become involved in the project, there has to be a way of explaining our thoughts as to why we made the list of game genres that we used. In analyzing the game genres a need for attributes defining each genre became evident; in response to this problem we found a list of traits that we believe all or most games share if they are in some specific genre. To ensure that not only Sega Dreamcast titles were properly recorded in our information sources, we then recorded the first and last two games for each letter of the alphabet utilizing the entire game listing recorded in all of the sources we used for information[1]. This final step ensured that even across different platforms and sources

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[1] IGN.com, Gamespot.com, GamePro.com, 1up.com, Mobygames.com

our categories would store consistent information about the games.

Genre Analysis

Video game genres are defined by different game-play elements that are significant to the game-play experience of a video game. These game-play elements can be expressed as "attributes." A set of attributes is defined in the "Video Game Attributes" section. This set of attributes is used to define video game genres listed in the "Video Game Genres" section. Below is a discussion about video game attributes, and how video game attributes and genres are used and defined. A list of video game genres appears in the "Video Game Genres" section.

When analyzing video game genres, it is found that common elements are shared between genres that are very different. Puzzle solving, exploration, and combat are examples of these shared elements. To distinguish between genres while still encapsulating these common elements, it is important to measure game-play attributes on a scale, rather than a simple check on whether the game employs an attribute or not. Though many games contain puzzle solving, in some games puzzle solving is not very significant to the overall game-play when compared to other games. For example, one game may be a shooter with almost no puzzle elements, except for a few moments when you have to shoot a button to open a door. Another game may have almost all of its content in the form of complex puzzles. In the shooter given in this example, puzzle solving is not very significant to the shooter's game-play, which is in contrast to the second, very puzzle-focused, game. If genres were defined as a binary 'contains' or 'does not contain' system of measuring attributes, these two example games would reflect the same information. These genre definitions would not be appropriate. The solution to this problem is to have a classification system in which game-play attributes are measured on a scale, allowing information such as 'contains few puzzle elements' or 'contains many puzzle elements' to be recorded. This solution results in far more accurate genre definitions.

These game-play attributes must be clearly defined so they can be used to describe genres.

Video Game Attributes

A summary of the six game-play attributes are as follows: *Transparency* is the visibility of the details of how the game-mechanics operate. *Action vs. Planning* describes the difference between game-play that focuses on either physical dexterity or on the formation of strategy. The *puzzle* attribute describes the focus on puzzle-solving in game-play. *Exploration* is how exploration is used as a game-play element. The *game environment* design can be defined as either *arena* or *gated*. The relationship between *game-play* and *story* is an attribute that describes how significant story is in game-play.

The *transparency* of the system behind the game is an attribute of videogame genres. If the player is aware of the statistics and math behind the actions in the game, then the game system is transparent. If the game

system is not transparent, then the player is only aware of basic cause-effect actions. In a non-transparent game system such as *Half-Life*, the player is not aware of bullet trajectories or of the specific damage inflicted by guns. However, in a transparent game system such as *Baldur's Gate*, a player would have all the necessary information to calculate exactly what the game will do in response to the player. When attacking an enemy, the player can calculate the chance to hit, damage, amounts, how armor will affect the attack, etc. These rules are explicitly defined and accessible to the player.

In all games, there are elements of both *action and planning*, even if only to a small degree. A player must think about what they are about to do, either as simply as if they should press a button, or as intricately as what their war strategy may be. In *Pong*, the player needs to decide if they have to move their paddle to catch the ball. In *StarCraft*, a player needs to manage resources, units, and time while creating a strategy. *Pong* would be an example of a game where planning is not very significant to game-play; *StarCraft* is an example where planning is a very important attribute to the game. A player must also execute any planning, which could be complex like a long input combination, or simple like clicking a button on the screen. In *Street Fighter*, a player needs to remember many button sequences and needs to perform the right sequences at a moment's notice. In *Spaceward-Ho*, the player has all the time they need to navigate the menus to take their turn. In *Street Fighter*, the proficiency of the player at executing their plan is very

significant to game-play. In *Spaceward-Ho*, the physical ability required of the player to interact with the game is very simple, and any skill beyond this minimum is not meaningful to game-play. The degree to which these planning and execution stages are the focus of the game-play helps to define a game genre.

It's easy to say that most games involve *puzzles* of some sort; the game presents an abstract problem with a solution that must be found. The style and frequency of puzzle solving is what helps describe a game genre. In *Tetris*, the entire game-play is composed of reacting to and solving the puzzles. However, in *Phantasy Star: Online*, you occasionally may need two people to stand on separate buttons to open a door. Puzzle solving is more frequent and significant in *Tetris* then in *Phantasy Star: Online*.

Exploration will be defined here as the significant and non-trivial examination of a game's physical environment. There are three major usages of exploration that would be appropriate to include in a genre's definition: Exploration as an obstacle, or singular game-play as a reward for exploration. Exploration in game-play can be seen as its own reward.

Exploration might be the only way to overcome an obstacle presented by a game. The space that the player is to examine will be purposefully designed to be non-trivial, and part of the core game-play. In a game like *Goal*, the physical environment is a representation of a soccer field. Examination of the field is trivial, and not intended to be significant to the game-play. In *Legacy of the Wizard*, the environment is a dungeon, and navigation and

exploration is part of the intended experience.

Exploration can be rewarded with unique game-play beyond the minimum experience required to succeed at the game. If a player explores in the game, they may be presented with additional direction or information they would not have acquired otherwise. The environment itself could be a reward for exploration, if the player is exploring simply to see the game world. In *The Elder Scrolls III: Morrowind*, if the player explores the environment, they find new places, characters, items, and objectives. This exploration is expected, and new game-play elements are designed specifically for it. The exploration in The *Elder Scrolls III: Morrowind* is in contrast to the exploration in *Call of Duty*, where if the player explores, they may find a new room in a house or a new patch of grass, but these experiences are not expected or particularly intended, and no significant game-play is specifically added as a result of this exploration.

All games have some sort of virtual environment in which they take place. These environments can be described as either *arena* or *gated*. A gated environment is one where the environment is obviously divided into parts. Game-play and goals of the game may change between these parts, and cohesive movement between these parts is expected. In an arena environment, the game takes place in a fixed place, where game-play and game goals stay similar for each environment. While *open world* might be considered an environment type, the size of the world is only a matter of the scale of the environment. While open world games might seem large, they are still finite spaces that only create the illusion of being endless. The way these finite spaces are organized and used in game-play will still fit the definition of either gated or arena environments. An example of an open world game is *Grand Theft Auto III;* the game environment is large and has the illusion of being endless, but the environment follows the definition of an arena environment. In arena-style games such as *Mortal Kombat* or *Tetris*, the game environment is well defined, and game-play takes place in specific, static environments. In a gated-style game such as *Ghosts 'n Goblins*, the player moves between clearly different environment stages, where the environment layout and obstacles change between environment stages.

The relationship between game-play mechanics and story in games can exist in a few ways. Story in games is used to give meaning to what would otherwise be abstract actions. In *chess*, pieces are moved on a grid in different patterns, in a fairly abstract manner. However, it is implied that the game board is a battlefield, and the pieces are combatants. The link between story and game-play is very weak in *chess*; game-play mechanics only have an implied meaning. In a game like *Chrono Cross*, everything done by the player in the game has a very specific meaning to the story. Characters, names, actions, and environments are all explicitly defined. The link between story and game-play is very strong in *Chrono Cross*, and game-play mechanics have a very explicit meaning.

Video game attributes are game-play elements that are significant when describing a video game. This list of attributes is used to express similarities between games, and video game genres can be defined using attributes as parameters.

Video Game Genres

The goal when creating this list of video game genres was to have a classification system that would be appropriate for use in a database. Each genre has quantifiable characteristics that each game can be tested against. The genres identified below are broad enough that a search upon a genre would supply a list of similar games. While broad categories might lose some precision when classifying games, they are more appropriate for expressing relationships between similar games. A classification system that accurately captures every detail about a game would be precise, but a search upon any one of its parameters would not be practical. There are common attributes between games that can be generalized and used to compare similar games.

Video games may not fit into the following set of genres. This genre list is designed to describe AAA-budget console and PC video games. Indie games, pornography games, and some foreign games were not addressed. A discussion on these other game types is in the [Outside scope of project] section.

It is worth noting that this list of genres differs significantly in some ways from the commercial genre classification. When creating this set of genres, the differences and similarities between game types, and the attributes and game-play elements of games were analyzed, to attempt to describe each game. The commercial, widely-accepted genres are often redundant, or fail to capture important elements of games, and do not always effectively compare similar games. These problems were addressed in the creation of this set of genres; For example, *Action* is a common video game genre used commercially. *Action* games were nearly identical many games of other genres; in this genre list, most commercially classified *Action* games would appropriately fit into the *Adventure* or the *One vs. Many Fighter* genres.

A summary of the fifteen video-game genres are as follows: *Adventure* games typically involve the player controlling one (or few) characters through a story. In *Alternate Reality Games*, real life media is used as a platform for an interactive narrative. *Board Games* are computer adaptations of traditional board games. *Gambling* games involve betting on a game of chance, and are often video game adaptations of real gambling games, frequently casino games. *One vs. Few Fighter* games consist of a small number of characters fighting in a closed area. In *One vs. Many Fighter* games, one player controls a character and fights against many opponents at once. *Platform* is a genre that focuses on the negotiation of a game environment by means of running, jumping, and other acrobatic techniques, often while avoiding obstacles in the environment itself. A *Puzzle* game often entails a player against an abstract problem, where a solution must be found. In *Racing* games, the player competes with other characters to reach a

specified goal quickly. In *Rhythm* video games, the player has to perform the correct specified rhythm through a given interface. In *Role-Playing* games, the player assumes the role of a character or group of characters in a story, and various statistics are used to express the state of the player and the game. A *Shooter* genre game involves the use of projectiles by a protagonist to combat other entities. In *Simulation* games, a player regulates limited resources and influences a system in some way. *Sports* genre games are computer adaptations of real life sports. In *Strategy* games, tactics and resource management are used to achieve a goal.

Adventure genre games typically involve the player controlling one (or few) characters through a story. Game-play mechanics have very explicitly defined meanings; story is very significant. Game systems are often not transparent to the player. Adventure games focus more on action in game-play, and less on planning. Exploration is present and both used as an obstacle and awarded with game-play. Game environments are typically gated, though some might be arenas. *The Legend of Zelda* is an example of an adventure game.

An *Alternate Reality Game*, also known as an *ARG,* is a game where a set of real life media is used as a platform for an interactive narrative. Story is a large focus; game-play is explicitly related to story. Parts of the game system are completely transparent to the player, where other parts may be completely hidden. *ARGs* are almost always planning-oriented. Exploration is sometimes a game-play element. There is no generalization about game environment style. Examples of *ARGs* are *I Love Bees* and *The Beast.*

Games of the *Board Game* genre are computer adaptations of traditional board games. The games will typically not vary much from the physical board game they are based upon.

A *Gambling* genre game is one that involves betting on a game of chance, and is often a video adaptation of real gambling games, frequently casino games. There is usually no story, with only implied meanings for the game-play. The game system is almost fully visible; the player is aware of exactly how each game works. Planning is very important to game-play; action is insignificant. *Gambling* games do not involve exploration. Examples of *Gambling* games are *High Rollers Casino* and *World Championship Poker*.

A *One vs. Few Fighter* genre game typically consists of a small number of characters fighting in a closed area. Story is usually not tied very closely to game-play; the reasoning for most conflicts is only implied. The game system is most often hidden from the player, with only basic information like health available. Action is the focus of *One vs. Few Fighter* games; planning is not a core element in the game-play. There is not much exploration, and the game environments are small arena-style environments. Examples of *One vs. Few Fighter* games are *Mortal Kombat* and *Street Fighter*.

In the *One vs. Many Fighter* genre, one player controls a character and fights against many opponents at once. Game-play is explicitly related to the story; the player often controls a

character in the narrative. The game system is mostly hidden from the player, with very little statistical data available. Exploration is a game-play element, but it is not usually complex. Game environment style is most commonly gated. Examples of *One vs. Many Fighter* games are *Dynasty Warriors* and *Heavenly Sword*.

Platform is a genre that focuses on the negotiation of a game environment by means of running, jumping, and other acrobatic techniques, often while avoiding obstacles in the game environment itself. The relationship between story and game-play is usually moderately strong. The Game system is almost always hidden from the player. *Platform* games are action-oriented, but there are often focused periods of planning scattered throughout game-play as well. Exploration elements are usually linear. The game environment is typically gated. Examples of *Platform* games are *Super Mario Bros.* and *Ninja Gaiden*.

A *Puzzle* game often entails a player against an abstract problem, where a solution must be found. Game-play mechanics are frequently kept abstract, without many ties to a story. Game-play systems are mostly visible, though a few elements may still be hidden. Puzzle games do not contain exploration elements. Game environments could be either arena or gated; there is no appropriate generalization.

In *Racing* genre games, the player competes with other characters to reach a specified goal quickly. Racing games employ both implicitly and explicitly defined game-play mechanics, depending on the game itself; there is no clear generalization.

Game-play systems are hidden from the player; only basic cause-effect actions are known to the player. Action is more of a focus than planning in game-play. Racing games typically offer very little exploration. Game environments are almost always arenas. *Need for Speed* and *Burnout* are examples of racing games.

In *Rhythm* games, the player has to perform the correct specified rhythm through a given interface. The relationship between story and game-play could be either explicit or implied. The game system is mostly transparent to the player. *Rhythm* games are usually action-oriented, without much planning during game-play. Exploration is not a game-play element. The game environment is arena-style. Examples of *Rhythm* games are *Guitar Hero* and *Dance Dance Revolution*.

In *Role-Playing* genre games, the player assumes the role of a character or group of characters in a story, and various statistics are used to express the state of the player and the game. Game-play is strongly related to story, and game-play mechanics have very explicit meanings. The game system is mostly transparent to the player. A *Role-Playing* video game could focus on either action or planning. Exploration is a major element. The game environment is almost always gated. Examples of *Role-Playing* games are *Final Fantasy* and *Ultima*. Role-playing games can be similar to adventure games, however there are some key differences. Role-playing games have a far more transparent game system than adventure games; the game system transparency is very significant in role-playing game-play. Adventure

games game-play style is typically more oriented towards action; role-playing games usually promote planning more than an adventure game.

A *Shooter* genre game involves the use of projectiles by a protagonist to combat other entities. Game-play mechanics are typically explicitly defined by the story. The game system is almost always hidden from the player. *Shooter* games are action oriented, though some might employ some planning elements in game-play. There is no obvious generalization about exploration or game environment style for *Shooter* games. *Doom* and *Call of Duty* are examples of *Shooter* games.

In *Simulation* games, a player regulates limited resources and influences a system in some way. The system responds to the player's influence. Game-play mechanics could be explicitly or implicitly defined by a story. The game system is mostly transparent to the player. *Simulation* games are usually not action-oriented; planning is the focus of game-play. Exploration is not typically a game-play element. The game environment style is arena. Examples of *Simulation* games are *Sim City* and *Nintendogs.*

Sports genre games are computer adaptations of real life sports. There is usually a notable link between game-play and story. The game system is mostly transparent to the player. Action and planning are both commonly employed in game-play. Exploration is typically not a game-play element. The game environment style is arena. Examples of *Sports* games are *Goal* and *Blades of Steel.*

In *Strategy* games, tactics and resource management are used to achieve a goal. Game-play is typically explicitly defined by a story. The game system is mostly transparent to the player. *Strategy* games are most often planning-oriented, though some games include action elements. Exploration is usually a significant game-play element. The game environment style is arena. Examples of *Strategy* games are *Age of Empires* and *Civilization.*

This list of genres offers a useful classification system of video games. Classifying most games using this system is a straightforward and quantifiable process that offers practical information on each game. The above genre list would be appropriate for use in a database system describing video games.

Discussion of Narrative/Story In Games

Video games are becomingly more and more divided between those that utilize aspects of their game to more effectively tell a story and those that are more concerned with making their game entertaining through game-play mechanics meant to be enjoyable. When video games were first being created their focus was on unique game-play mechanics and story was often an afterthought. Board games, card games, and even sports are meant to be enjoyed for the game-play and strategy that arises in trying to understand how a system works and then manipulate that system to achieve some measure of success as defined by the game. In many older games such as Space Invaders there is some assumption of a narrative as can be

inferred from the name of the game and the game-play mechanic of shooting a missile weapon at a UFO shaped sprite. While there may be an implied narrative or story the player does not take an active role in creating a series of events that impact the course of the story. There is only a failure state that the player can reach after going through stage after stage in increasing difficulty. There is a series of events (aim gun left, fire, fire, destroy enemy) that occurs in an order to be determined by the player, but the overarching story is independent of these events. Even some games that would seem to have an interactive story, such as <u>Myst</u>, only give the illusion that their story is changeable by revealing it to the player in terms of what has already taken place; this is the way detective or crime stories are often told and have the advantage of revealing past events to the player as if they were presently happening. Recently more and more games have taken to telling stories in a very cinematic fashion, even having branching storylines depending on what the player chooses to do. There is no single point in time where games can have been said to make story telling the focus of their game instead it was a gradual process. There were a lot of very story-intensive text-based games that slowly lost popularity in favor of the more graphically-intensive action and strategy games. These text based games, however, had a spiritual successor in the form of some RPGs, whose main feature was the ability to have different stories depending on the choices made by each player. There also exist many different forms of the spiritual successor to a game such as <u>Space</u>

<u>Invaders</u>. Countless games that are in a similar vein to these old arcade games end up on the game-play focused side of the story telling metric. An unimportant introduction or even sometimes a paragraph in the manual is all some games have for a plot, in stark contrast to recent titles such as <u>Mass Effect 2</u> where the universe, in which the plot takes place has a back-story that is told by games, novels, and comics. At one end of the spectrum there are stories so big a consumer cannot completely understand it until they have experienced pieces in a variety of media while at the other end there are still games whose story and meaning are completely abstract or implied, and entirely unnecessary to understanding and enjoying the mechanics of a game.

Perspective

Defining perspective in games is difficult as it can be ambiguous depending on the context. Games have a virtual camera with which the player views the game world and have a narrative point of view with which the story is told. For the purposes of this classification system perspective will be used only in the sense that it defines what camera type a game uses to show the game world to the player.

First Person – A game listed as having a first person perspective places the camera inside the player's avatar. The player usually looks from the eyes of the avatar in the game.

Third Person – The camera is outside the player's avatar and shows not only the player but the game environment

as well. Typically the camera will move and have controls that the player can manipulate but this may not always be the case.

Top Down – When the camera is fixed over a game environment looking directly down upon it. Numerous strategy games use this perspective in order to allow the player to view most of or the entire game environment.

Side Scrolling – The camera is fixed over a game environment but will move when the player takes certain actions. In general a 2D game environment will utilize a side scrolling perspective in order to show the player's avatar in a large environment and still allow fine control over his/her actions.

Isometric – The game environment is viewed using isometric projection which has the end result of making everything appear to be 3D despite being rendered in 2D. More specifically the lines and angles of the 2D image are never skewed by changes in the players viewing angle.

It is important to note that many games tell a story and can have a different narrative point of view. A single game could be in first person perspective, tell its story in third person omniscient, and still be a shooter, platformer, or puzzle game. This means that no matter how many games are grouped together as first person shooters, the "first person" and "shooter" aspect are separate elements of the game and should be recorded as such.

Theme

Theme refers not only to the type of story the game tells but the atmosphere of the game as a whole. When a games' theme is said to be, for example, horror this means that every element of the game from its artwork, sound, and story should be intended to evoke a sense of fear in the player. The common themes of the games that were recorded are listed below.

Fantasy – When a game is thematically related to elements of the supernatural or magic it can be said to have elements of fantasy. Fantasy is distinguished from other forms of fiction in its focus on systems of magic that, while logical, are not possible and are not shown to be a product of technology in the game world. Warcraft is a strategy game that revolves around the war between humans and orcs that takes place in a fictional world where magic is common and there are many other fantasy species.

Science Fiction – Differs from fantasy in that the fictional elements of the theme are technological rather than supernatural. While often based on some scientific principle the focus remains on technology and how it alters the other elements of the world. One of the most famous science fiction games would have to be Half Life. The game's opening starts off with the player assuming the role of a physicist going to work when one of the experiments goes awry and a portal is opened, releasing violent creatures into the game world.

Horror – The key difference between horror and other genres is the intent behind every element of the theme to scare or thrill the participant. It is

common for dark and violent aspects to be utilized in the formation of the story, world, or aesthetics. F.E.A.R. is a horror game that focuses on a supernatural incident which the player's character is summoned to contain. Soon the player's character must fight for his life in suitably ominous environments against seemingly intelligent enemies.

War – The game revolves around fighting in some organized conflict with distinct sides. Sometimes these games involve some element of fantasy or science fiction and these themes are closely related but significantly distinct. Some notable games such as Call of Duty keep all of the games' elements inside the time period of WW2. It is important for any game with a war theme to accurately portray the weaponry and armies in whatever time period the game is set in or the theme might be more correctly classified as fantasy or science fiction.

Crime – Any game that specifically focuses on the conflict between a criminal and society. These games can take elements from almost any type of criminal and have any number of types of crime available to the player. Starting with Grand Theft Auto III the series has featured protagonists capable of committing almost every type of violent crime imaginable as well as a number of drug and prostitution crimes, not to mention the staggeringly large number of traffic violations. While this game would also be considered satire the spotlight always remains on the characters and how they survive in their virtual city.

Romance – A game that revolves around the romantic relationships between characters with one of the characters often being controlled by the player. Typically presented in a format called a visual novel the player must make choices to determine to course of the story. In the visual novel Katawa Shoujo the player can choose to pursue a number of characters to develop a relationship with them; the game changes depending on the choices the player makes.

Mystery – An unsolved mystery sits at the heart of any game with this theme and the player is tasked with solving it piece by piece. Games where the player is an explorer or a detective are often subsets of this. One of the more famous games in this theme is Myst in which the players find that their avatar is on an island and must solve puzzles to reveal the story behind the player being on the island and the story of the island itself.

Comedy / Satire – A game which utilizes aspects of itself to emulate and exaggerate various other things with the intended effect of being humorous. While a game may have elements in its story that add humor, games that focus on creating humor most often use satire. A game such as Upgrade Complete involves the player having the "pay" fake money for virtually everything in the game from the menu bars to the music to the graphics used to display the player's ship and the enemies. It does this to point out how absurd it is that most games restrict what the player can do early in the game and slowly allow the player to use more of the game they already bought.

Toon – A game which has many elements that are unrealistic and often nonsensical. Closely related to fantasy they mainly differ in the art style and the types of stories associated with the theme. Toon games such as <u>Rugrats: Scavenger Hunt</u> tell the story of a licensed cartoon series and tend to be more focused the series or on comedy than either fantasy or science fiction.

Abstract – Any game that does not contain a discernable setting. Abstract games often focus on game-play mechanics rather than keeping all aspects of the game within a certain theme. One of the most famous abstract games would have to be the puzzle game <u>Tetris</u>. Patterned blocks falling against a blank background do not fit with any of the commonly used themes and can be considered abstract.

Scale

Scale is an element of game design and game-play that is not a part of this list of genres. Scale has its own meaning for each game, and may differ greatly between two games. While scale is a significant element of game design and game-play, it is not often an appropriate point to use when comparing two different games.

In a strategy game, scale could be the number of units, countries, or even planets the player controls. In a role-playing game, scale could mean single player, or massively multiplayer with thousands or millions of players. In each case, scale is very significant to the game-play. However, comparing a strategy game with players managing planets to an eight-player shooter is not meaningful.

While one might be able to draw some conclusion with this information, it is too specific and not generalized. In some genres, scale does not apply at all. In an abstract puzzle game, scale has no meaning, since the game world is not relative to anything in reality.

While scale is a significant element of game-play, it does not relate different games well, and it is not a useful measurement attribute when comparing video games.

Shape

Shape is a pattern of game-play elements and mechanics. Examples of a video game shapes would be the number of players the game supports or the time the game takes to play. Shape was not used when defining this list of video game genres, but it can be a useful tool when describing video games.

Shape captures less, but more specific information than a genre does. Shapes can be combined with *types*, specific game mechanics, a *theme*, and other shapes to define a video game. A type is similar to a genre, and describes a broad amount of information about a game. It does not contain very specific information, however. A game mechanic is something very specific about a game, like a targeting reticle, or a character with hit points.

All of these elements can be combined to very accurately describe a game. However, analyzing a game to the point where it can be accurately defined in these terms would be a laborious process. Also, searching upon or relating games using these characteristics would not be very practical, especially in a database

system. Groups of these elements would be formed, and this is essentially what this genre list embodies. These genres are a logical combination and generalization of game-play elements.

Shape, as well as type, theme, and game-play mechanics can be used to accurately capture specific information about video games. However, this would not always be a practical classification method when to classifying, representing, and performing actions upon groups of games.

Outside the Scope of the Project

Due to time constraints some aspects of this project were not addressed in any depth but should not be left out of the discussion. In recording our data about games only commercial games that were released on a console were recorded. Flash games are distinct and extremely common while simultaneously ranging across all game types and almost always being free to play. Pornography in games is often ignored due to the subject matter and small number of games available, but there are simply not enough defining video games which make it their focus to involve pornography that we felt it necessary to record them. Foreign video games such as those from Japan are obviously tremendously important to the development of almost every type of game created in the United States but due to the sheer number of foreign video games and the inability of the researching team to verify sources written in languages other than English these games were all but

left out of the recorded data. There are also a number of categories or variables that many might feel should be quantified and recorded, such as the intent of the creators when making and releasing a game to the public. We only recorded games whose intent was commercial, that is, we only recorded games that were released with the purpose of making a profit for the people creating them. Theme is a category that could use more refinement. The notion of subthemes which further specify a theme would be useful, but it was hard to come to a consensus on what the subthemes should be. Most games will fit into one of the themes already described. Genre presents a similar problem as it could be refined into subgenres as more data is collected and subgenres can be quantified and clearly differentiated from one another.

Compared to the many others, flash games have a unique shape and intent. Flash games are usually free to play and their creators don't normally expect to make a large amount of profit from their work. While there are a few notable companies, such as PopCap, that started off making flash games and managed to sell them, most flash games are remakes of previous games that are recreated using flash. Also, many flash games are played in a web browser and are meant to be played for a short amount of time. This time constraint often leads to very simple game-play mechanics and stories, when there is any story at all. Most flash games will fall under one of the genres and themes we already have defined. In order to determine which flash games require new genres and themes, there would need to be a

large amount of database. Just finding out about flash games that are no longer hosted on a web server is difficult. There is no direct financial benefit to their creator for a large number of flash games and they are routinely replaced to make room for new flash games.

Games that involve pornography are absent from the games recorded for the simple reason that there is not as much information on them as other commercial games and they don't appear on consoles except for extreme cases due to the limited market an AO(adults only) rating would create. Many stores will not carry an AO rated game and console manufacturers have strict policies on not allowing the release of AO games on their systems. Of the games found that feature pornography there are no new game-play mechanics. Since our primary focus was on recording commercial video games released on consoles there was simply not enough data to make any comparisons or group together, in any meaningful way, games that feature pornography.

Games that are only released in a foreign language are just as important as games released in English to developing any system of game classification. All the games we recorded were made to be played on consoles that were created in Japan. Almost every game we recorded was available in multiple languages. There are a number of games that were only released in foreign countries; these games were left out of our data because of our inability to verify their sources without being able to play the

game or read a review. Our inability did not prove to be problematic as most games for consoles were released in a number of languages. There did not end up being a significant number of games we skipped recording.

Quantifying something as wide ranging and subjective as intent would be extremely difficult. There is not a large amount of data available for many video games that would accurately reveal the intent of the creators. Commercial games are best defined by their function, that is, they exist as a product to profit their creators. The same way other art forms are utilized for a wide variety of intentions there could be an extremely large number of intents for a game creator to have from the most commonly used entertainment to educational, political, shock, made for specific genders, specific age groups, training different occupations, etc. It is difficult to even begin to list them in anyway other than the most general and commonly used. We therefore did not add to the intent category until such a time that there is enough recorded data to justify and back up the assertion of any intent other than the most commonly used commercial.

The theme and genre categories are difficult to define because of the seemingly arbitrary line between what constitutes a theme/genre and what would be classified as a subtheme/subgenre. While it would be useful to label a specific theme/genre and subtheme/subgenre for each game, the games naturally begin to group themselves as more and more are recorded. In order to avoid

overestimating how important some themes/genres are in classifying games, there needs to be a significant number of recorded games that can be analyzed and grouped together before what they have in common can be identified and defined.

Conclusion

Using the data that was collected we created a flexible game classification system in which games can be classified according to their common elements. As more data is recorded the attributes and genres will be changed to reflect the new data. By keeping the system changeable and data driven it will allow different researchers to assign the same values to the variables of a game despite personal opinions.

Introduction to the Tables

- Title: The title of the game being recorded.
- Developer: The name of the development studio.
- Publisher: The name of the publishing company.
- Reviewer's Genre: The genre the review listed for the game recorded.
- Release Year: The year the game was released.
- Source: The source that the game's information was recorded from. Discussed further in the "How We Got Here" section.
- Platform: The computer, console, or handheld the game was released for.
- Perspective: The view the player has when observing the game

environment. Discussed further in the "Perspective" section.
- Genre: The specific genre we identified for the listed game. Discussed further in the "Video Game Genres" section.
- Theme: The specific theme we identified for the listed game. Discussed further in the "Theme" section.
- Rating: The numbered rating that was recorded from an aggregate review website.
- Rating Source: The URL of the page where the rating was recorded from.
- Number of Players: The maximum number of players that will be supported by the listed game.