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Community in the Crowd: Motivations for Commenting on Twitch.tv Live Streams

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COMMUNITY IN THE CROWD: MOTIVATIONS FOR COMMENTING ON TWITCH.TV LIVE STREAMS

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ABSTRACT

Twitch.tv is a growing platform designed or interaction, communication, and socialization. It is space for content creators and viewers can to interact and build communities. Although it is not exclusively video game streams, Twitch.tv has become a major player in the industry. This study is a thematic analysis of comments made during live streams of video game content. The questions guiding this research were: What do viewers comment about on streams? What do these comments reveal about their motivations for participating? What are the variations between content types? After analyzing 9084 comments across 10 streams, what was found was that a major motivation for Twitch.tv viewers is the creation and maintenance of social bonds. Additionally, the building of hype was a large motivator. There was a small but widespread number of toxic comments. This research shows that Twitch.tv acts as a center for communities to grow around unique streamers and the potential significance of the platform itself.

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Chapter One

Introduction

On July 11, 2018, for the first time, a major television network broadcast the *Overwatch* League championship tournament live. *Overwatch*, a team-based competitive multiplayer game, premiered live on ESPN and Disney (Allen, 2018). Touted as "the first major global eSports league," the *Overwatch* League is made up of city-based teams for professional, global, and competitive video game play (Blizzard Entertainment, Inc., 2018). This pastime, known as eSports, has grown in popularity, mirroring professional sports in viewership and revenue. Not all games are considered eSports, but several different games and genres can be played as eSports. Because of this, there has been debate over the proper definition. Hamari and Sjoblom define eSports as "a form of sports where the primary aspects of the sport are facilitated by electronic systems; the input of players and teams, as well as the output of the eSports system, are mediated by human-computer interfaces" (2017). For this study, eSports will be considered as organized competitive play. Universities, such as Becker College, have established eSports teams and awarded competitive scholarships to players. Becker College joined more than 80 other universities offering student-athletes an opportunity to play eSports at the collegiate level (Becker College, 2018). Beyond college and university leagues, the eSports industry hosts national and international leagues for multiple games and is expected to draw 299 million viewers in the year 2018.

Like other professional sports, eSports consist of leagues of teams staffed by trained, experienced, and professional players from around the globe (Molina, 2018). Now, major television networks are attempting to tap into the growing market and pull viewers away from a spectator event dominated by streaming services, such as Twitch.tv. This moment mirrors a trend in video gaming away from a generally active, participatory medium, to one that allows for passive spectatorship on a large scale. No longer are video games only to be played, they have become a pastime to be watched.

Gaming, for this research, will be defined as the act of playing a video game itself. eSports will be understood as organized competitive video game play, and streaming is presenting a live video feed of an individual or group of individuals with the addition of some type of commentary. One of the most prolific and popular platforms to watch video games has been Twitch.tv, a website devoted to live-streaming of user-created content. While the most popular and prevalent content is video game live-streaming, Twitch.tv hosts other categories including board games, talk shows, IRL (In Real Life) streams, and others (Twitch Interactive Inc., 2018). As of the time of writing, there are over 1,000,000 unique viewers per month, as well as 3,200,000 unique broadcasters (twitchtracker.com, 2018).

Gaming live streams are not solely a vehicle for professional teams competing for awards and prizes to broadcast matches, but a vehicle for more casual and creative play by amateurs and enthusiasts to share user-created content. Game live streamers have attained celebrity status through Twitch.tv, gaining a great deal of influence in the video game industry and popular culture alike. Beyond the industry, Twitch.tv has become a site for new research. In the first book on Twitch live streaming (hereafter referred to as streaming) by T. L. Taylor, *Watch Me Play: Twitch and the Rise of Game Live Streaming*, T. L. Taylor (2018) investigates the inner workings of Twitch.tv as a platform and a company. Through in-depth interviews of streamers themselves and exploration into the inner workings of the company, Taylor attempts to unpack the ramifications that this new industry has on gaming.

Ultimately, Taylor reflects on the growing entanglement of creative play and the work of public entertainment and the growing shift away from traditional broadcasting to UGC (user generated content) and streaming, highlighting that, although some aspects of the medium have shifted, many have remained the same (Taylor, 2018).

A defining characteristic of Twitch.tv is its participatory nature. Viewers can comment in real time with each other and the streamer as they play. These comments are displayed live, while the stream is taking place, creating an environment where passive and active forms of media consumption blend together in novel ways, combining the passive spectatorship of communication research with the active participants found gaming studies, computer-mediated communication, and virtual communities.

A thematic analysis of viewer participation in online video streams on the site will be used to study the comments on Twitch.tv. Viewer participation and interaction were operationalized as the individual comments made during streaming. Comments and streams are made publicly available and logged on the site indefinitely. The questions that guided this analysis were: What do viewers comment about on streams? What do these comments reveal about their motivations for participating? What are the variations between content types?

Chapter Two

Sharing the Self Online, From Weblogs to Twitch.tv

Sharing one's life online is nothing new. Some examples of this practice appeared before the birth of the World Wide Web. These pre-World Wide Web forms were mainly extended series of posts to online message boards or mass emails. In 1993, the World Wide Web and new interfaces decreased the knowledge and skill needed to create content for the internet. Lowering the barrier for entry allowed the number of prototypical blogs to explode (Scott, 2005). Weblogs were the first iteration appearing on the web. These generally consisted of collected and organized lists of all websites an individual visited. Following this initial foray into weblogs the style diversified. The next era of blogging began after the release of the application "Pyra labs" in 1999, allowing more individuals to create their own blogs (Scott, 2005). With these innovations blogging entered the mainstream.

The other side of Twitch.tv is its use of "lifecasting," a term used by Twitch.tv's creators, to describe their first site Justin.tv. It was created as a platform for users to share their lives constantly online, with the hope that it could ultimately be monetized as it rode the Reality Tv craze of the early 2000s (Talyor, 2018). The origins of this idea can be traced back to the 1990s with the popularity of cameras that could be added to personal computers to capture and share video. CU-SeeMe was the program that provided the foundation for the use of this new technology in 1992. The free program allowed for video to be captured and shared between users over a network. Its first major use was in education and corporate scenarios, but it soon became a tool for individuals to connect and socialize (Talyor, 2018). "Cam Culture" became a growing trend used to interact with individuals over a great distance and gave rise to new broadcasting potential. In the late 1990s and early 2000s, this new technology was used to broadcast extensive live feeds of broadcaster's personal lives. These feeds would often go on indefinitely and constantly, the overall intent not being one of voyeurism, but creating a sense of intimacy through the connection with the broadcaster (Taylor, 2018).

The final piece that provided the foundation for Twitch.tv was the growing use of User Created Content and its ultimate monetization. This activity can most clearly be seen on the platform YouTube, which allows users to post videos to the site and for viewers to comment on it. YouTube has taken the creative labor of its users and adapted for a system of monetization (Taylor, 2018). In addition, YouTube was a home for creative game-related content, such as guides, tutorials, commentaries, and even short videos created using the game for animation (known as "Machinima") (Taylor).

Although the original purpose of Justin.tv was to create a platform for viewers to create continuous content using their daily lives, it was soon discovered that this was altogether unsustainable. Following this realization, Justin.tv shifted toward more sustainable video game streaming, a form of entertainment that has grown incredibly popular (Taylor, 2018). Twitch.tv takes these elements and combines them into a platform where users can create and share their own content, communicate and interact with their audience, and both the owners and broadcasters can profit.

By 2014, Twitch.tv accounted for 1.8% of total peak internet traffic (Cook, 2014). The site's gaming content consists of a collection of channels divided by content type. Streamers host live, scheduled streams on their pages. Gameplay displays as video and the streamer provides commentary and entertainment. While gameplay and commentary are occurring, a sidebar is actively displaying comments from viewers as they watch. Viewers can type comments into this sidebar and use it in a variety of ways, including communication to the streamer, others in the chat, or to simply comment on the content. User handles are displayed next to comments and allow viewers to address one another directly by using the @ symbol before the handle within the comment. This method works to address the streamer as well. Chats are often limited to followers of the channel or paid subscribers. For Twitch.tv viewers, following a channel is as simple as selecting an option found at the top of the channels page or video. Viewers can choose to subscribe to a channel, which entails paying a monthly fee that directly supports the channel's creators and allows subscribers unique access to exclusive content. A visualization of a stream can be found in the appendix.

In these chats, viewers can use images designed to represent common emotions, often of exacerbation, sadness, or jubilation. These "emotes" can be general Twitch.tv emotes, universal to all channels on the site, or streamer specific emotes to communicate and express specific, sometimes referential, expressions. These are feelings that cannot be easily interpreted through text alone and often involve comedic images and references to other forms of media. Emotes have their specific meaning and can help viewers follow the rapid pace of communication and identify pivotal moments. Streamers themselves can add unique exclusive emotes which are given to viewers who pay to subscribe and support the streamer. Streamer specific emotes can be used anywhere on the site, but only by those members who have paid to subscribe (Alexander, 2018). Each streamer can choose to limit the use of certain emotes, or ban their use entirely, but this does not stop viewers from circumventing the restriction. Viewers can choose to spell out the name of emotes instead of having them display in the comments. By purposefully misspelling the emotes, the name will display but the image will not, allowing the meaning to persist and prevent it from being deleted.

Chats also show unique forms of communication known as "Crowdspeak," or the ability for large scale communications not to breakdown, remaining coherent and enjoyable to their members. "Crowdspeak" is a key feature of Twtich.tv chats and allows for the large strings of comments to produce enjoyable and productive communication between members. This productive communication is done through bricolage and short-handing, through repetitive and abbreviated comments which allow for greater understanding within the chat despite the rapid pace and numerous messages. Given the larger scale of some chats, the number of unique voices and opinions expressed by its members is not limited. The number of unique voices was not consistent with the number of members in larger chats; however, in small scale chats, voices were all unique. Members of the chat also adapt the voice of unique emotes, and through shared opinions and knowledge of the chat, create their own shared meanings (Ford, Gardner, Horgan, Liu, Tsaasan, Nardi, and Rickman, 2017)

Typology of game streams.

eSports are not the only gaming content streamed online. Three classifications have been proposed to describe video game streaming categories: eSports, Speedrunning, and "Let's Plays" (Smith, Orbist, and Wright, 2013). Video game streams are not the only content available on Twitch.tv. However, they are the most predominant drawing in some of the largest crowds. The top five streamers as of 2018 all streamed video game content only (twitchtracker.com, 2018). On Twitch.tv the eSports community is the most popular, followed by "Let's Plays," and finally Speedrunning (Smith et al., 2013). What follows is a brief description of each.

The genesis of eSports began in the early days of the arcade. Players would compete for the highest possible score on arcade machines, leaving their mark on the high score screen. The quest for high scores became a formalized event in 1980 when Atari held their *Space Invaders* Tournament drawing 10,000 participants (Smith et al., 2013). Now eSports is an incredibly popular form of content found on multiple outlets including Twitch.tv. Twitch.tv regularly hosts its own tournaments and allows others to host on their site as well (Twitch, 2018). eSports revolves around popular multiplayer games, where highly skilled teams and players compete in organized leagues. Like other professional sports, eSports has grown in popularity among betters and gamblers who place wagers on the outcomes of matches on different sites outside of Twitch.tv (Meola, 2018).

The most diverse style of stream is the "Let's Play." The "Let's Play" is an episodic experience driven by the personality of the streamer and the narrative that is created. There is less emphasis on skill or competition and more of a focus on providing entertainment. The "Let's Play" is exclusively available on streaming sites (Smith et al., 2013). Like the other styles, the "Let's Play" (LP) did not start on Twitch.tv. Its origins are found in blog posts on the forum site "somethingawful.com" that consisted of still images and captions of a poster's progression through a game. It then migrated to other sites, such as YouTube and, finally, to Twitch.tv (Smith et al., 2013). LPs have a narrative style, relying on the personality of the streamer, as they play the game. Skill is of no importance in an LP; it is the commentary and personality of the streamer that is the main draw. Most streamers provide light-hearted dialog and poignant quips as they play. Some LPs predominantly take the form of walkthroughs of the game, providing information and entertainment as the streamer and the viewers progress (Smith et al., 2013). Others involve a single person or a group of players taking part in a competitive game, all the while providing commentary and explaining the mechanics of the game (Edge, 2012). The games played during LPs are not always multiplayer shooting games such as *Fortnite*. The digital card game, *Hearthstone: Heroes of Warcraft*, is another popular game streamed on the site. *Hearthstone* is a turn-based card game in which each player draws cards from their deck and uses them to lower the "hit points" of the other player. A player wins when the other is reduced to zero "hit points" (Lessel Vielhauer, and Kruger, 2017). Streamers for this game typically discuss deck composition and strategy for their audience, providing a more informative stream for their viewers (Lessel et al., 2017).

Finally, Speedrunning is one of the least popular forms of video game streams found on Twtich.tv. Speedrunning is the act of completing a game in the fastest possible time. Times are tracked across players and different tiers. Various restrictions are introduced to make them uniquely challenging. The goal for those who participate is to achieve record-breaking times through knowledge and skill with the game (Boluk & LeMieux, 2017). Other forms of Speedrunning allow players to achieve the fastest times by manipulating flaws in the game or exploiting inherent "glitches." Speedrunning predates Twitch.tv and streaming itself, but the ability to demonstrate one's skills live has changed the activity into a spectator sport (Smith et al., 2013).

It must be stated that there is an element of competition present in all three of these typologies, but eSports has the most overt focus on head to head competition. LPs may include the play of competitive games, but this is done to facilitate entertainment not solely to play to win. Speedrunning does involve players competing and comparing scores, but these games are exclusively single-player affairs and do not have head to head competition in a game designed to pit players against each other.

Aside from the more standard and consistent streaming types described above, Twitch.tv also hosts more eccentric events. One of the most interesting was "Twitch Plays Pokémon;" an event focused around a series of streams in which viewers worked together to play the 1998 GameBoy game *Pokémon Red*. Up to 70,000 players participated, controlling the single character by posting commands in the chat. The goal of this streaming experiment was to complete the role-playing game through crowdsourced control. It resulted in a constant struggle with interesting results. The crowd-controlled design led to participants competing for direct control of the character and did eventually force cooperation amongst the participants to make any progress. What followed was an uphill climb to pull order out of chaos.

After fumbling around without any inherent social order or rules, the viewers formed a mock democracy. Less prosocial players still attempted to subvert and sabotage progress, but the game continued slowly to its inevitable conclusion. Inside jokes and inherent mythology arose around a community constructed narrative. It took far longer than what is typical of a single player playthrough, but the game was completed by the community as a whole (Prell, 2014).

Impact.

Twtich.tv has become a major concern for companies in the game industry. Game developers have begun to integrate Twitch.tv functionality directly into their games in the hopes of boosting sells and visibility or their games. Other games have been designed around Twtich.tv, allowing viewers and followers to have direct input into the experience. *Streamline*, a game in which viewers can drastically affect the environment that players are in, allowing them to directly impact the content of the stream (Tack, 2016).

Demonstrating the influence of video game streaming on the video game industry, one popular YouTube streamer, known as Keemstar, incited controversy by publicly shaming Epic Games, the creators of *Fortnite,* for planning a large-scale tournament on the same night as an event that he was hosting for his followers. There was a statement from Epic Games to streamers warning them about the ongoing events so that they could work around Epic Games' tournaments (Grayson, 2018). Keemstar's statement did create some concern and led Epic Games to make a public response.

However, this is not the only effect streaming has had on the gaming industry. The abundance and popularity of video game streaming as a medium has begun to shape the gaming industry and game design. Major companies and developers are now moving away from expansive, single-player games, to focus more heavily on video games that facilitate streaming, such as large-scale, multiplayer, competitive games known as "battle royal" games. The production of single-player games has continued, but the genre is feeling the effects of streaming. Although some single-player video games, such as the recent *God of War,* have had massive success and proven to be popular on streaming sites, sales have still felt the strain. For story-centered experiences, such as *God of War,* watching the content unfold online has led some viewers not to purchase the game. Game publishing companies have attempted to combat this, such as Atlas, the makers of the single player game *Persona 5,* who blocked all videos of their game after the content creator reached a certain point in the story (Pearce, 2018).

Streaming services have not only impacted the gaming industry but other areas of entertainment. Both Paid and free streaming services have affected net music industry profits, taking from the revenue of downloads and CD sales. However, the overall effect on revenue has been positive, at least for the paid services, as they offset the loss from those that are free (Wlomert & Papis, 2014). Several television networks and media companies are also adopting streaming services into their business models. Following the success of Netflix, a video streaming service with over 118 million subscribers worldwide as of 2018 (Molla, 2018), other companies have begun to host internet streaming sites and content. This move has been bolstered by the improved network stability and quality of internet infrastructure (Mahanti,2014). Recently, comic book companies and major motion picture corporations have begun to enter the streaming market with DC's DC Universe and Disney's Disney+ arriving in 2019. Entire series are created exclusively for streaming platforms such as Netflix's *Umbrella Academy*. Movies bolstered by major star power are being produced exclusively for streaming services too. Streaming media content reaches a wide audience, and entertainment companies have taken notice.

Chapter Three

Review of Literature

To fully encompass and understand the point of interest for this research, a review of the relevant literature was conducted, with an emphasis placed on gaming research, media making communities, audience studies, and online communities. This literature helped to ground my research and provide a background for understanding Twitch.tv.

Video games history

The introduction of the Brown Box by Ralph Baer in 1967 brought the concept of video games into mainstream attention (Video Game History Timeline, 2018). Bear's Brown Box was an unassuming small wood-paneled box designed by the television engineer, with basic circuitry and the ability to be plugged into a television set. After further development, it could play several games, including *Ping-Pong*. By 1968, Baer and his team released their product after a successful deal with the company Magnavox (Egenfeldt-Nielsen et al., 2016). Baer's creation marked the beginnings of the video game as a medium. Following the release of the Brown Box, other companies developed and introduced their own machines. One of the early leaders of the industry was Atari, who, after seeing the potential of the Brown Box, specifically the *Ping-Pong* game, adapted the idea to create their own amusement machines to play *Pong*, their version of *Ping-Pong*.

Following the success of these early forays into video games, the industry grew rapidly and diversified. By 1974, there were an estimated 100,000 coin-fed video game machines in the United States, collecting $250 million annually. The arcade machine spread and provided the groundwork for an industry (Chikhani, 2015). While arcades and arcade games were flourishing in the 1970s, the personal computer and home console games were also making their debut, creating a new market and potential for video games as a medium. Arcade machine cabinets were large, cumbersome, and could only play a single game. This unwieldy nature made them a poor choice for the home market.

Early home consoles were much smaller and utilized cartridges to play a plethora of games. By the 1980s, arcades and video games had cemented themselves into American life. Arcade games like *Pac-Man* and *Space Invaders* were hits. One of the earliest draws for games was reaching a high score. This asynchronous competition, to have a high score displayed on the machine, was one of the earliest examples of competitive multiplayer gaming (Chikhani, 2015).

Meanwhile, companies competed for control of the home gaming market. Atari introduced its 2600 system in 1977, and, during the 1980s other companies followed (Donovan, 2010). Although the introduction of home consoles was tepid, their popularity grew. In 1983 Nintendo released the Famicom. A wild success, it forced Nintendo to contract out to other companies to make enough cartridges to fill the demand. For the American release the name was changed to Nintendo Entertainment System (NES), and it repeated its success in the US in 1985.

Coinciding with home consoles like the NES, Computer-based games were often text-based, due to the limitations of personal computers at the time. They were stored and sold on cassettes and floppy disks (Donovan, 2010). As computer power increased and new technological breakthroughs occurred in the 1990s, video games were pushed further, improving access as well as design and aesthetics. These advancements included improved graphics and sound hardware for personal computers and the increasing speeds of internet access. The CD-ROM also had major ramifications for the industry because of their ability for more information to be stored than the outdated floppy disks (Egenfeldt-Nielsen, Smith, and Tosca, 2016). Aside from home consoles that allowed for multiple players, the local area network (LAN) and later the internet, allowed for more players and more complex games to be played on home computers. These developments helped to shape and nurture the gaming community and have guided its growth to today (Chikhani. 2015).

On the home console market, there was a bitter rivalry growing between two companies; Nintendo and Sega. These two industry giants spent much of the 1990s in constant conflict and one-upmanship. Home console developers and manufacturers attempted several experiments to incorporate online play. Nintendo's 1995 release of the Satellaview, an addition to their Japanese exclusive, the Super Famicom, allowed owners to download and stream games via satellite to their consoles. This service was active up until 2000 when it was shut down. Sega also attempted to utilize the potential for online gaming with their console the Dreamcast, which allowed the player to access the internet with a built-in web browser. The Dreamcast however, was a commercial failure, but console developers would return to the idea of online gaming shortly after the demise of the Dreamcast (Chikhani, 2015).

In the early 2000s, online gaming became the dominant force in home computer gaming, with multiplayer shooters dominating the market. Massively Multiplayer Online Role-Playing Games (MMORPGs) also became wildly popular with computer game players. These games allowed large numbers of players to interact and play together in an even more expansive online world. The popular MMORPG, *World of WarCfraft,* maintains a player base in the millions and continues to produce new content currently (Donovan, 2010).

With the Xbox, Microsoft's first home console, and Xbox Live, the first successful online system for a home console, Microsoft solidified modern online gaming, and it has continued to be an ever-present fixture in the industry (Chikhani, 2015). Xbox Live as a platform included the ability to speak with other players over a network, a new concept in video games that up to that point had been mostly textual. Whereas before players either played alone or with someone in the same room, Xbox Live allowed players to interact and play together over the internet. Xbox Live marked the first major attempt in the home console market to connect players across the internet to play together. It took several years to develop and organize and overcome several hurdles, both logistically and in corporate politics. However, this platform paved the way for further development and improvement in online gaming and is still being updated and improved today (Pitts, 2013).

The 2010s have brought about further changes to the industry. There has been a decreased interest in physical products and a slow move to digital downloads and streaming. "Social games" have also become more popular. These include games, such as *FarmVille* that use social media platforms, such as Facebook, to allow players to share and interact as they play. It also has been a time when independent or "indie" developers could make commercially viable games with mainstream appeal (Egenfeldt-Nielsen et al., 2016).

Video games have had a far-reaching impact on culture as a whole. They have provided Hollywood with properties to turn into films, with admittedly mixed success. *Super Mario Bros.,* released in 1993, was a miss with fans and critics, whereas the *Tomb Raider* franchise and Steven Spielberg's recent adaptation to the best-selling book *Ready Player One* have been hits (Virtue, 2018). Video games have also found their way into the world of popular music with a composition for *Civilization IV*, a real-time strategy game for the computer, receiving a Grammy nomination in 2011 (Weir, 2011) and full symphony performances of video game soundtracks selling out in a matter of days (All things considered, 2008).

Fortnite, a free-to-play, battle royale style game, has become a cultural icon. Battle Royale games are those that pit a group of players, usually 100, against each other in a large area of play where they must arm themselves and battle until only one remains. *Fortnite* did not create the genre, but it has become incredibly popular, appearing on national morning news shows and becoming a Twitch.tv staple. Celebrities and athletes have embraced it and adapted some of the in-game celebrations into competitions and performances (Brian, 2018).

Video gaming has become a massive industry, making 36.4 billion dollars in revenue in 2017 (Entertainment Software Association 2018). In that same year, 53 percent of the United States population reported playing video games with others at least once a week for an average of six hours (Entertainment Software Association 2017).

Video game studies

Video game research, as a field, is still young, with its beginnings in the 1980s, and an increased interest in the past 15 years (Egenfeldt-Nielsen et al., 2016). Early video game research focused on the impact of video games on individuals. There was a great deal of interest in the relation between video games and violence, whether between gamers and non-gamers or different genres of games. This debate was complicated by political implications and has delivered inconsistent findings (Squire, 2002). The debate has cooled somewhat in recent years, with the field moving to the investigation of other questions. However, it is still a frequent concern raised by multiple groups, as video games become further intertwined in everyday life. Recently a study conducted Oxford University found no identifiable link between aggression and video game play (Taylor, 2019).

Another area of interest in early video game research was its potential in education. The notion of video games as a tool in education, particularly with simulation games, has been tempered by the fear of promoting violence in youth (Squire, 2002). For over 40 years studies have shown that, if used properly, video games can be an effective teaching tool (Egenfeldt-Nielsen et al., 2016). This interplay between learning and playing has led to concerns for students' interpretation of knowledge, showing that some students do not trust the information imparted through games while others do too much (Egenfeldt-Nielsen et al., 2016). Gamification, the act of imparting video game aesthetics and structure on non-gaming activities, has been used to help students learn musical instruments, and to promote prosocial activities, such as recycling and obeying traffic laws. The usefulness of gamification as a teaching tool is still up for debate (Egenfeldt-Nielsen et al., 2016).

Video games have also shown the potential to help solve problems confounding researchers across various fields. When looking into the folding proteins found in neurological diseases in 2010, scientists sought help from computer engineers to design a puzzle game to help solve a problem that computer simulations could not. The result was a rousing success and has sparked an interest to implement games as a means to solve other real-world problems (Doyle, 2010).

As the medium evolved, so did the research. Recent trends in gaming studies have looked at the growing toxic gaming culture and its implications. Gaming culture has become a misogynistic, racist, homophobic, and generally aggressive environment. In 2018, an article brought together leaders in the field of gaming research, journalism, and the industry to discuss what has caused and perpetuated the ever-present toxicity of gaming culture. This trend is not new and can be seen in advertisements and business practices throughout the industry. The article described a hypermasculine and aggressive atmosphere present in all areas of the community, leading to casual racism and discrimination within multiplayer games, as well as media outlets (Campbell, 2018). Others have sought to explain the inherent characteristics that breed this antagonistic and aggressive culture. Instead, focusing on the meritocracy involved in video games and its toxic implications (Paul, 2018).

Casual or mobile games, due to their growing popularity, have become another area of interest for game researchers (Consalvo, 2017). Casual games are those with minimal or mild learning curves. These games require little time commitment or focus for players to enjoy (Egenfeldt-Nielsen et at., 2016). Mobile games, however, are games that can be played away from home and are typically found on handheld consoles or smartphones. While there has been a success with the line of Nintendo handheld consoles including the GameBoy and the Nintendo DS and 3DS, other non-game centric devices have been adapted to play games. Games were introduced to smartphone owners with new distribution sources, such as Apple's App Store and Google's Google play store. One of the first and most successful mobile games to appeal to a mass audience was *Angry Birds*, released in 2009 by Rovio Mobile. The game tasked players with destroying structures by strategically launching cartoon birds at them (Egenfeldt-Nielsen et al., 2016). The low skill barrier and rapid-fire gameplay would help make *Angry Birds* a commercial success.

Researchers have begun to investigate why people play video games together as a social experience. For a time, games were seen as a predominantly individual experience in which one player actively participated in a structured, narrative-centric, experience in isolation. Now, as seen with the popularity of online multiplayer games and social network games, such as *FarmVille*, games have become a way to connect and socialize with others (Egenfeldt-Nielsen et al., 2016). In the past, the term "couch co-op" was used to describe the act of playing with someone else in the same physical space. Now, with the wide adoption and ease of access of many to the internet, gamers can socialize and communicate with a wide and diverse population.

Finally, the growing popularity of video game streaming and the individuals who participate in it has drawn the attention of game studies (Consalvo, 2017). Twitch.tv has reshaped the video game landscape, caused developers and companies to rethink how their products are to be played, and how video games are consumed by their audience. The most popular content creators on the site bring in millions of dollars of revenue and attract millions of viewers (Consalvo, 2017).

Mass media and community

Community is a problematic, but an important, term. It originated in the field of sociology and later became central to much of communication research. The earliest conceptualization of the term has been attributed to Tonnies, with his concepts of Gemeinschaft, an intimate understanding of where individuals fit in society, and Gesellschaft, a more impersonal but necessitated association between individuals (Jankowski, 2006).

Communities can be shaped and developed by the media they consume. Newspapers have created a sense of local community, and both radio and television brought media to the masses, playing a part in the shaping of opinions on a national scale. The internet has also had its own effects on community and social relations that are still being studied.

Newspapers. During the colonial period of the United States, printed newspapers were a major source of information of both local and national import. These early newspapers would be printed on a weekly or semiweekly basis. Unlike modern papers, most of the information found therein was collected either through mail correspondence or word of mouth. Reporters were rarely able to collect the news themselves, and most international news was shared through press "exchanges" between international correspondents (Nerone & Barnhurst, 2003). Therefore, the colonial period saw predominately, news relating to England, and that was disseminated at a laborious pace, taking several weeks to months to arrive from Europe (Czitrom, 1982).

During the American Revolution and the Civil War, papers shifted from political and mercantile affairs to a form fit for mass consumption. Throughout the 1800s, papers began to side with political parties who saw an opportunity to reach the masses through the publications (Nerone & Barnhurst, 2003). These "penny papers" focused on news that people wanted to read about regardless of significance. Sensationalism and human-interest stories sold papers and companies poured their funds into acquiring them as fast as possible, utilizing any new technology at their disposal (Czitrom, 1982). By 1899, the number of papers had ballooned from 235 in 1800 to 16,000, ever-fueled by the rapid technological development of the time. The increased production did not sit well with some who longed for the simpler days when news had a personal touch and blamed the new trends in the industry on the rapid pace of industrial life (Czitrom, 1982).

Studies of print media and community began in the Chicago School with an analysis of small-scale local newspapers and their effects on identity formation in immigrant communities during the 1920s. This initial inquiry was followed by further investigation in the 1950s by Robert Merton. Merton identified two groups of residents who utilized local newspapers. These were rural localities and their cosmopolitan counterparts. Merton found that participation within the community was related to individual traits of those found therein. Further research was done on the effects of local newspapers and integration into communities and later the effects on community ties (Jankowski, 2006).

Radio. Birthed from World War I, experimentation on transmitting the human voice without wires, radio (originally referred to as "wireless telegraphy" or simply "wireless") became a mainstay of modern society in the 1920s. Founded in 1919, the Radio Corporation of America (RCA) banded together with other industry leaders, such as General Electric, in pursuing public broadcasting following World War I (Czitrom, 1982). This new technology allowed the nation to be connected over the airwaves and promised an experience of the outside world in the privacy of one's home (Hilmes, 1997). In 1922, 570 broadcasting licenses were granted. The production of radio equipment fought to keep up with demand as more people became interested in the burgeoning medium (Czitrom, 1982). The early days of radio were a conflicted time when individuals were unsure of the purpose and potential of the medium. Amateurs and competing commercial and educational interests filled the airwaves as advertising agencies and regulators battled for control behind the scenes (Hilmes, 1997). Soon, listeners called for regulation, and with regulation came advertisements to pay for regular broadcasts. In 1927 the Radio Act was established, creating a temporary commission to make meaning out of the confusing mess of the American airwaves. Stations, too, improved by focusing on tone quality instead of distance, providing a better broadcast for an eager public (Czitrom, 1982).

Through the following decades, radio continued to change and adapt to new government regulations, improving the identifiability of stations and the quality of programming. Stations fought with government censorship and government-run radio competition, finding hits with comedy and drama shows. By the end of the 1930s, radio news became a force of its own, and with it, a proliferation of ads and commercialism followed (Hilmes, 1997). Radio remained a focal point for American life as the decades passed, losing some of its idyllic, utopian appeal as it aged and tastes changed (Czitrom, 1982).

Early research on radio focused mainly on its potential use for propaganda and the spread of mass hysteria. The fear of propaganda arose from the rise to power of fascist governments and its supposed power to sway the general public. One example of the supposed hysteria-inducing potential of radio was Orison Wells broadcast of *War of the Worlds*. In 1938, Wells performed a dramatization of the novel on live radio prefacing it as a news report. After the conclusion of his program, it was reported that the dramatized reading spread fear and panic throughout the American public. Panic was allegedly caused by its depiction of a "real" alien invasion. Critics pointed to this broadcast as demonstrating the dangerous potential of the medium (Littlejohn & Foss, 2009). However, recent investigations have shown that this supposed mass hysteria was not the case, and, in fact, newspapers were attempting to attack and condemn the new medium of radio (Pooley & Socolow, 2013).

Further research into the effects of radio lagged until the late 20th century (Littlejohn & Foss, 2009). For example, Eszter Hargittai used the concepts of radio as a tool for the democratic sharing of ideas and applied it into the realm of internet studies. Using surveys of the radio landscape, the diminishing variety of choices, and the political influence, she warned against the idolization of the internet as a vessel for freedom of thought and expression (2000).

Television. Televisions increasingly began to enter American homes during the post-WWII move of citizens from the cities to the suburbs. Like radio before it, television was thought of as a safe alternative to the outside world. Families could experience exotic locals without having to leave the comfort of their private abodes (Spigel, 1992). After a period of praise for television's ability to open the eyes of the populous to the world, it came to be seen as a portal into which the corrupt and unsanitary could enter the home and infect the family. Doctors warned of its power to cause impotence and its ability to suppress the immune system and of how prolonged viewing lowers the intelligence, leading one down a troubling path of anxiety, fear, and violence (Scott, 2018). Children who watched it were labeled "bug-eyed loafs" glued to the television set. Ultimately, it did act as a source of community for individuals who fled the city and began life anew in suburbia away from their families (Spigel, 1992).

After print, the second wave of research into media and community focused on television programs. During this period, research examined programming created by local individuals with assistance from professional staff at television networks such as public access television. Studies were conducted in the United States and in Europe to understand how these technologies were being implemented. What was found was that those who initiated community-based media initiatives overestimated the desire of people to express themselves through television (Jankowski, 2006). The community-building aspect of public access television only seemed to affect communities that *already* held a sense of attachment.

For those with weak social ties and little social capital, it had no real effect (Jankowski, 2006). However, smaller-scale studies looked at how televisions sets affected and promoted interaction and sharing in families, finding that people bonded over the shared experience of television viewing (Morley, 1988).

Online technologies

Unlike research on mass media communications, online, computerized, and networked communication studies arose simultaneously with the development and diffusion of new technologies. The roots of internet studies can be traced back to 1978 with the publishing of *The Network Nation* by Murray Turoff and Roxanne Hiltz. In 1999 the Association of Internet Researchers, an academic association focusing primarily on the advancement of internet studies, was founded (AoIR, 2017). Shortly after, in the 2000s, academic departments devoted to internet research arose in universities (Jankowski, 2006).

Early studies during the first wave of internet research analyzed communication in chat rooms and group-focused applications resembling social networks (Wellman, 2004). After this interest in connectivity, the second wave of internet studies in the late 1990s shifted to studying the user (Wellman, 2004). Internet-based community research began with a hopeful look at what virtual communities could be, such as Howard Rheingold's *The Virtual Community: Homesteading on the Electronic Frontier* (2000). As interest rose, so did the desire to take a more critical stance, and the field of computer-mediated communication developed.

Studies in the structure and persistence of online communities have been used to understand how and why individuals interact in an online setting. To create a typology of online communities, Jankowski identified three different community types. Although these will not be used in my study, they still demonstrate the diversity of online interaction of different groups (2006). These three types are speech communities, discourse communities, and communities of practice. Discourse communities involve short threads of comments between a small group of members. The larger the community, the greater the risk of entropy (Arguello, Butler, Joyce, Kraut, Ling, Rose, and Wang, 2006). Speech communities are similar but with an emphasis on linguistic rules (Jankowski, 2006), and communities of practice are discussions about activities involving users of varying levels of expertise in which members share information about the topic and learn (Hanson-smith, 2012).

Questioning "community" online. There has been much debate about attributing online activities to traditional definitions of community. The lack of face-to-face interaction in online activities was used to bolster arguments in debates over the spatially oriented, close-knit idea of community (Castells, 2001). The geographically centered definition of community and the communication performed within such spaces was problematized by researchers such as Jones in *Understanding Community in the Information Age* (1995), which challenged the narrow conceptualization of the space in which individuals communicate, and other researchers soon followed (Johns, 1995). With this new perspective, the definition of a community became more fluid, and the perceived differences between virtual and physical community were lessened (Jankowski, 2006).

Some sociologists and communication scholars have moved away from the concept of community in favor of network metaphors, such as utilizing social ties. Technologies, such as the internet and telecommunication, have allowed the spread and diversification of potential ties, which in turn has allowed for the maintenance of distant relationships. The number of weaker ties between individuals has increased, but that does not mean that these are insignificant. These ties provide information as well and emotional enjoyment (Castells, 2001). The internet supports the trend towards individualism in social networks by nurturing the weak ties. It also allows for new types of ties to form through the creation of communities that form around particular interests (Castells, 2001). These online communities do not share the same restriction of the more traditional interpretation of community. Instead, they build networks between individuals that share a common interest or characteristics, voluntarily facilitating understanding between members (Castells, 2001).

Social network sites, such as Facebook, also allow for the maintenance of social bonds and resemble the concept of the networked individual. danah boyd and Nicole Ellison defined social network sites by three criteria: a system with a public or partially public profile, a list of other users with some form of connection, and a method to explore these connections and the tenuous connections within those connections (2007). These sites allow strangers to meet and build new ties, but the major use is to communicate with preexisting ones (boyd & Ellison, 2007). These sites act as a place to house and collect previously established connections (Johnson, 2014). However, recently members of Facebook leadership have attempted to change this. Facebook has introduced a new mission statement "give people the power to build community and bring the world closer together." (as cited by Chaykowski, 2017). Facebook CEO Mark Zuckerberg has stated a desire to not only connect friends and families but to allow individuals to connect using groups for common interests and goals. Zuckerberg stated, "For 10 years, we focused on doing everything around connecting people with their friends and family…Now I think that there is a whole lot of similar work to be done around communities" (as cited by Chaykowski, 2017).

In order to provide a definition of community for how it will be used in this research, community will be understood as a collection of social networks that are chosen and that provide support while reifying social identities of individual members. The above definition allows for more agency to be offered to the individual and less emphasis on the geographic location (Castells, 2001).

Audiences

The term "audience" has come to represent different aspects of a similar concept. The consistent theme is that an audience is a group participating in media use (Hartley, 2002). "Audience" has also come to represent different manifestations of that core idea, those gathered in the same physical place, but also individuals, isolated, consuming media individually (Littlejohn & Foss, 2009). What follows is an exploration into audiences. Beginning with perspectives in mass communications scholarship, adding contributions from cultural studies research, a focus on audience involvement, and, finally computer users.

Mass communication audiences. On a basic level, mass communication is the study of society-wide communication. More broadly, it is the study of how technology is used to spread and share symbolic content. The field has changed and developed along with technology, moving from printed works such as newspapers and periodicals, to broadcast television, films, music, and then the internet (McQuail, 2000). Historically to conceptualize areas of mass communication four models have been used (McQuail, 2000). In the transmission model, the sender controls the message and delivers it to the receiver. This sender-to-receiver process depicts a linear system of self-regulation (Shannon, 2001). James Carey offered another model that was less concerned with the transfer of information and instead looked into the celebratory nature and the feeling of fellowship attained through communication. To Carey, the purpose of communication was to help maintain society and the satisfaction of the sender and receiver. Also known as ritual or expressive communication, this form relied on a shared understanding of symbols and emotion between the sender and receiver and the comradery the act inferred (Carey, 2002). Third, the publicity model is a more critical understanding of mass communication that perceives the end goal as merely attaining viewership and thus profit. In this model, attention is a zero-sum process where attention given to one source cannot be given to another. It is also resigned to the present and is an end in and of itself (McQuail, 2000). The fourth model is the reception model. Proposed by Stuart Hall, this model deals with the encoding and decoding of symbolic messages. Senders attempt to encode a message into the media they deliver to receivers, but receivers can decode a potentially different message from the media than what was intended, this new message then affects the sender creating a cyclical system of encoding and decoding (Durham & Kellner, 2006).

"Mass society," as a concept, can be summarized as the homogenization of individuals due to mass media. The audiences of mass media are theorized to experience increased isolation and estrangement despite an increase in physical proximity (Bell, 2002). This interpretation takes a critical look at mass media, those who produce it, and its audiences. In their book *Dialectic of Enlightenment*, Max Horkheimer and Theodor Adorno (1944) devote an entire chapter to the cultural industry. In it, both high and low forms of art are given credit as legitimate, but the mass-produced commercialized culture serves as a means of domination (Peters, 2003). In this way, the audience acts as part of the culture industry and loses their agency to the media producers. As components in the process, audiences consume this mass-produced media and readily accept any deviations from the prescribed norm as original and innovative, when they are calculated, strategic moves by the producers. In this view, the media reproduces itself and perpetuates the hierarchy and the status quo, like the mass-produced products from an assembly line. To Horkheimer and Adorno, the audience was a captive piece of the machine and entranced by what was put before them. Audiences in this paradigm are easily malleable and controllable through what John Durham Peters called “soft domination” (2003). Being easily malleable made the audience susceptible to the will of the powers that fuel the cultural industry. The audience were willing pawns, taking in the homogenized media being delivered to them without question or complaint (Horkheimer & Adorno, 1944).

In their work “Mass Communication, Popular Taste and Organized Social Action” Lazarsfeld and Merton (1948) describe the power of mass media as shaping and enforcing social norms, supporting the claims of Horkheimer and Adorno. Lazarsfeld and Merton identified three social functions mass media performed: providing status conferral to individuals and causes, enforcing social norms, and a narcotizing dysfunction. This third function echoes the thoughts of Horkheimer and Adorno. Individuals are presented with a flood of media to consume and, as they attempt to consume it all, they take in much but understand very little. The most disconcerting aspect of this dysfunction is that individuals equate reading and knowledge of issues with action, and then do not act (Lazarsfeld & Merton, 1948). Ownership is another issue that is identified in Lazarsfeld and Merton, stating that the private companies that control the media in the United States are different from the government-run media of other nations. This corporate control, according to Lazarsfeld and Merton, creates a vacuum in which similar ideas are perpetuated, and new ones have difficulty entering (1948).

Media's effects on individuals were of great importance during the early years of television and have continued to be of interest to researchers. George Gerbner and Larry Gross investigated the effects of television portrayals of violence on different levels of viewership. Heavy viewers showed the most effect, demonstrating increased uncertainty and negative appraisals of others, due to the disproportionate amounts of conflict and violence witnessed on television (Gerbner & Gross, 1976).

Studying television into the internet era, Victor Costello and Barbara Moore used internet surveys to study the characteristics of online television fans. Some fans were not content with passively watching programs but sought out more information and immersed themselves within the program and its intricacies (Costello & Moore, 2007).

Cultural studies and audiences. In its earliest incarnation, cultural studies began as literary analysis and criticism. As it developed, it adapted critiques from critical schools of thought, such as Marxism and feminist studies. In cultural studies, the producer is of interest and the message that is encoded into the product is the focus (Johnson, 1986). However, culture is understood as a continuous process that all members of a collective help to define and imbue with meaning. The subjective meanings ascribed by the group are used to navigate social relationships through shared understanding (Johnson, 1986). When addressing the audience, cultural studies scholars analyze the text, or cultural artifact, as well as how the audience creates meaning of it. The artifact in question can have multiple meanings, and different audiences can also ascribe various meanings simultaneously (Littlejohn & Foss, 2009). Active involvement in meaning-making by the audience, coupled with power and cultural production, are fundamental components of the cultural studies approach.

Guided by the framework of encoding and decoding, David Morley conducted studies of individuals from differing social groups and how they interpreted programming. Morley found that social class may affect interpretations of television programs (Seiter, 1999). Another prominent example of cultural studies was *Reading the Romance* by Janice Radway (1991). In this study, Radway looked at the romance genre of novels popular with female readers. In one significant part of her work, she shifted attention away from the text and the powers that produced it, to how the reader internalized and interpreted the books. To do this, she asked readers to explain their reasoning for purchasing and reading the books despite their perceived hegemonic, masculine influence. She conducted interviews of 42 women in a small town, finding that the relationship readers held with the books was complicated and contradictory to analyses of the texts that argued they simply supported dependence and subjugation to men (Radway, 1991). More recently, cultural studies researchers have also used textual analysis to create models for online amateur critiques of films. Amateur critics were found to increase the level of their critique as their status increased and paid greater attention to genres that were not popular with professional critics, such as horror and sci-fi (Beaudouin & Pasquier, 2017).

Critical theory has also changed to incorporate the internet and computer-mediated communication. Postmodern concepts have been adapted into critical cultural theory to address the fluid nature of culture, community, and the global interconnectedness brought about by the internet (McQuail, 2000).

Users.

"User" is a term applied to those who perform various activities, from entertainment to work, through the use of electronic communication technologies (Scott, 2018). Due to the autonomous and individualistic nature of users, they have typically been placed in a position separate from the audience. Interactivity is more associated with users and the internet, and passivity with audiences. However, users can be viewed as an extension and evolution of audiences, exaggerating qualities that were thought to be exclusive to the audience. Even interactivity, a quality central to the construction of the user, has existed in the audience through their actions and responses to the media they have viewed (Scott, 2018).

The growth and spread of computer technology gave rise to the field of computer-mediated-communication (CMC) and the study of users. One of the first concerns for researchers was what would be lost through the adoption of computers in communication and its impact on organizations (Kiesler, Siegel and McGuire, 1984). As further research and an understanding were developed, CMC shifted from a conceptualization of highly impersonal systematic communication into a personal and eventually hyper-personal means of communication (Walther, 1996). One example of CMC regarding users was a study on the motivations for users to join online "firestorms." Participation was driven by moral panic and a desire for social recognition by the group, and, the larger the number of participants in a discussion, the less inclined users were to participate (Johnen, Jungblut, and Ziegele, 2017). Another looked at the effects of group identity on the users of imgur.com, an anonymous image-sharing site. Researchers found a more complex interaction of different levels of use. For example, choosing to access the site directly and simply reading the comments of others on an image created a greater sense of group identity and deindividuation, while posting one's own content did little to improve a sense of group identity (Mikal, Rice, Kent, and Unchino, 2015).

Users have also been studied as groups, especially as part of online communities. However, the interconnected and interlaced nature of the internet, coupled with the fluidity of the individuals populating it, has created a problematic focal point of analysis. The internet has shaped and continues to shape both the individuals and the organizations that use it, and thus the meanings are constantly in flux and redefined. There is a need to avoid narrow conceptualization and understand the complex fluidity of the subject of users and usership (Yuan, 2013).

Audiences and users: Understanding the Twitch.tv viewer

Both audiences and users have existed in parallel and have been entangled with one another. Rob Cover, for example, addressed the interactivity of the audience in the realm of internet technology. Audiences, he argues, have always desired and used interactivity in their media, from reactions to a play on-stage to the power gifted to the audience through the video recorder. The internet has made available the text for creative reimagining and is a continuation of a trend of the interactive audience. Cover also goes further to tie the audience and user together,

> to re-sequence the text, re-order it, change its quality, and so on, all in accord with the imaginative requirements and gratifications of the audience-user. It is, of course, digital technologies which are then to be understood as the culmination of this cultural desire (Cover, 2006, p.150).

Others have called for a reintroduction of audience studies into newer studies of digital media, investigating Netflix, Amazon Prime, and other means of watching programming online. After a dwindling of the field of audience studies for several decades, a need has been seen to reinvigorate it and study the new platforms and methods of media consumption by online user-audiences (Gray, 2017).

Typology of eSports viewers. A study on the StarCraft eSports audience developed a typology of viewers and their motivations for watching. StarCraft is a popular "Real Time Strategy" computer game in which players construct buildings to draw on resources and recruit units in a "top-down" perspective, while they manage and control an army. Players then compete for resources and attempt to destroy each other's base of operations (Cheung & Huang, 2011). The following viewer typologies have also been used to study Twitch.tv viewership and eSports audiences (Smith, Obrist, & Wright, 2013).

The first is the Bystander, who can be either knowledgeable about the game or know nothing at all. They can either be uninformed and know absolutely nothing about the content of the game or be uninvested, knowing the game and its mechanics, but not the details about the teams or players (Cheung & Huang, 2011).

The Curious watches to better understand the game, not for the enjoyment of it. Those who fall into this category enjoy learning the depths of the game through the play of professionals. The Inspired wishes to play the game and attempt the new techniques and strategies he has witnessed. For The Inspired, the act of watching creates motivation to play the game. The Pupil also wishes to understand the game, but, unlike the Curious, they wish to adapt what they have learned, not simply understand it (Cheung & Huang, 2011).

Next is the Unsatisfied, who sees the act of spectating a poorer substitute for experience when compared to playing the game. The Entertained is the opposite, finding more enjoyment in the act of viewership then actually participating in the game (Cheung & Huang, 2011).

The final types align more closely with eSports spectatorship than with streaming, but they should be addressed. These include the Assistant, who aids the players either by maintaining equipment or helping players. The Commentator plays a dual role of spectator and performer by providing entertaining and informative commentary while watching the game (Cheung & Huang, 2011). Overall, this typology can be used to understand and interpret viewership on Twitch.tv and have been adapted for other studies on video game streaming viewership (Edge, 2013).

There are also typologies for online message posters. The Tourist has no strong ties to the group and posts casual comments or questions, juxtaposed to Minglers who do have strong ties but have only minimal interest in the topic. Devotees have a strong interest in the topic but have little attachment to the online group. Insiders have both a strong attachment to the group and a strong interest in the topic (Kozinets, 1999).

Streamers on Twitch have discussed the importance of creating a sense of community and providing a "service" to the viewers (Bingham, 2017). Streamers who have been interviewed have noted the importance of creating a supportive and positive community. The streamers know that their actions and demeanor help to shape and encourage the prosocial behavior of their viewers. Streamers have also acknowledged the importance and significance of identifying individual viewers during their stream. Personal identification is a way to bring viewers closer to the experience and attempt to get them more invested in the stream (Bingham, 2017). Aside from simply participating in the on-screen chat, some streamers have introduced polls to help bring viewers into the experience and to make them feel that they are participating and have agency on the events that unfold (Bingham, 2017).

Chapter Four

Theoretical Perspectives

What follows is a discussion on the theoretical perspectives that were used in the analysis of the comments and their motivations. First, a depiction of engagement is provided, followed by commitment and involvement. Finally, the participation of users and more antisocial behaviors provide further foundation for the analysis.

Engagement in online communities

Engagement can be defined as "a holistic psychological state in which one is cognitively and emotionally energized to socially behave in … positive ways in which group members prefer to think of themselves" (Ray, Kim, & Morris, 2014, p. 531). Engagement can lead to prosocial and supportive behavior in a community. In the case of online communities, the most studied form of this is the act of knowledge contribution (Ray et al., 2014).

Three factors that motivate engagement are community identification, self-identity verification, and social status. Community identification has a powerful effect on people's engagement in online communities specifically (Ray et al., 2014). Because online communities do not tend to have formal penalties for nonconformity, it is important for individuals to join voluntarily. Members need to share similar values and interests with those already in the group. Some researchers have found that this shared identity leads to a sense of community and prompts members to participate in usually prosocial ways (Ray et al., 2014). However, all interactions in online communities are not so benevolent as described above. A prime example of antisocial behavior is the activity of trolls. Donath defined trolls, in her research of deception in online communities, as individuals who feign legitimate participation in a group only to cause disruption (1999). Although this is a simplistic definition for a much more complex issue, it will serve for the purpose of this analysis. Trolls can be identified by the language they use and differ in their posts when compared to the average, prosocial, user (Chang, Danescu-Niculescu-Mizil, & Leskovec, 2015).

The second factor is self-identity verification. Participation in a community allows an individual to measure if their self-concept matches the concept created by others within community. Members engage and act in a community because they feel that their unique contributions will be appreciated within the group. When this validation and acceptance is not present, members abandon the group or worse, lash out and deride the very community they were in (Ray, Kim, & Morris, 2014).

Although engagement with virtual communities may be voluntary and beneficent, there is evidence to suggest that there are other mechanisms at play. The very act of contributing to discussions and sharing knowledge may be nothing more than a means to improve reputation and social status among members (Lampe & Bhalla, 2007). Online communities do provide some anonymity to their members, but some members have garnered attention and status even while maintaining pseudonyms. User reputations have been seen in product reviews by individuals that received attention and approval from online shopping communities (Lampe & Bhalla, 2007). In opposition to this more cynical perspective, sharing knowledge and providing information is viewed as a form of gift-giving and can help to improve the social status and reputation of the giver. As opposed to offline communities, a user's reputation and status are of heightened significance as one of the few attainable resources in the virtual space (Lampe & Bhalla, 2007). This need for status and reputation explains the extensive commitment and time displayed by some members as they strive to improve their status in these virtual communities (Lampe & Bhalla, 2007).

Commitment to online communities

Member commitment is another important quality of a healthy online community. Three forms of commitment originating in organizational research have been identified and used in the context of online communities. These are continuance, affective, and normative. Continuance commitment has been identified as a form of commitment in which members measure the costs of leaving the group. This form of commitment leads individuals to stay with certain groups because of the unique benefits that come with membership (Bateman, Gray, and Butler, 2011). Objective costs and benefits are the loci of continuance with less significance placed o emotional gains.

Conversely, affective commitment occurs when there is a strong emotional attachment to the community. The bonds between members drive affective commitment and provide a sense of belonging with the group (Bateman et al., 2011). The third form is normative commitment, with which members feel a sense of obligation to remain with the community either from a sense of indebtedness for the knowledge gained, or the emotional support received by coworkers (Bateman et al., 2011).

Three online activities embody these various forms of commitment in online: reading comment threads, posting comments, and voluntarily moderating the community. Those with strong continuance commitment find benefits from reading comments and may be discouraged when comment threads fail to align with their beliefs or interests. Those with strong affective commitment are more willing to help other members and provide answers or attempt to aid them by posting solutions or comments. Those with higher levels of normative commitment tend to act as moderators and manage the discussions in the group. Additionally, these members may act in leadership roles for the group (Bateman et al., 2011).

Audience involvement and motivations

An emotional connection drives viewership. No matter how tenuous or insignificant, viewers enjoy watching those with whom they have an emotional attachment (Brown, 2015). A Persona is a television personality with whom viewers form an attachment (Brown, 2015). This attachment can manifest in four different ways: transportation, parasocial relationships, parasocial attachment, and worship. Transportation occurs when the viewer becomes invested in the narrative created by the persona and finds themselves emotionally involved in the story. Viewers may identify or connect with the character on screen and feel that they share core values. In this form the character is the driving force and viewers become emotionally attached to the persona and see them as friends. These bonds can manifest in parasocial interactions with the persona or imagined interactions between the viewer and the persona (Brown, 2015). The next level is the parasocial relationship, in which the viewer develops a sense of false intimacy with a persona through the very act of watching them. This one-way fictional relationship can eventually develop into an attachment. Parasocial attachments have been shown to shape adolescent development and even evolve into fictional perceived romantic relationships (Brown, 2015).

Identification is a form of empathy, with personas leading the viewer to adopt the interests and opinions of the persona as their own. The adoption of the persona's opinions has been used to explain why viewers seek out specific media personalities. Viewers seek out those personae that mirror their own opinions or the opinions they have adopted as their own.

Parasocial interactions have been used in video game research. Researchers have found that the association and connection between the player and the player avatar in massively multiplayer online games does affect the player's ability to suspend disbelief and self-deindividuate allowing the avatar to be seen as its own social agent (Banks and Bowman, 2016).

User participation

The study of online user participation has been exploratory and focused on the generalizability of findings as the field is developed (Gallagher & Savage, 2013). However, there has been work on the characteristics of users and ways that participation can be bolstered. One of the archetypical members of an online community is the lurker. These members are present on message boards and online communities but do not post (Preece, Nonnecke, and Andrews, 2004). Although seemingly pointless, this behavior can be beneficial to an online community. Membership of communities can be tremendous, in the hundreds of thousands, and if information was shared at this rate, there is potential for information overload. A balance must be struck between posters and lurkers as a community needs comments and participation to survive, but not every member needs to do so for fear of oversaturation (Ridings, Gefen, and Arinze, 2006).

While the lurker observes the poster contributes. This individual adds meaningful content to the community through discussion threads and posts (Ridings et al., 2006). The reasons for visiting online communities are different for these two typologies. Posters tend to have a desire to share and collect information in addition to finding social support. Lurkers, however, still desire to seek knowledge, but do not share the same level of trust as posters (Ridings et al., 2006). Trust in the benevolence of the community was found to be a significant factor in both lurker and poster behavior. Posters had trust in the community and felt that those on it had good intentions. Lurkers lacked trust to that level, only having enough to visit the community, but not enough to contribute (Ridings et al., 2006).

Characteristics of an online community can also facilitate and encourage the participation of users. A clearly stated purpose, clearly defined and differentiated roles for members, leadership from moderators and community members, and a combination of on and offline meetings can all encourage participation within an online community (Koh, Kim, Butler, and Bock, 2007). Leadership is a crucial component needed to increase participation and encourages members to be active, and active members create content that helps to support the community (Koh et al., 2007). In the case of Twitch.tv, the streamers themselves can be viewed as acting in a leadership role and nurturing their community of viewers (Bingham, 2017). In this way they help to support and bolster a community of active users and lead them to comment, contribute, and create emotional support throughout the stream.

One thread that binds the false dichotomy of audiences and users is emotional support. The goal of this research is to understand what motivates viewers to participate in an online chat shared by potentially thousands of viewers. In this research, the direction I have taken is that viewers develop emotional bonds with those they are watching and desire to interact because of that perceived relationship with the streamer, and simultaneously they also build a connection to and receive emotional support through the community. Streamers on Twitch.tv commonly practice the intentional act of recognizing individuals in the chat throughout the stream (Bingham, 2007). They comment and address viewers directly, strengthening the parasocial bonds with their audience. A potentially long-term belief in reciprocity with the persona can develop and maintain the parasocial relationship (Dibble, Hartmann, Rosaen 2016). This relationship is similar to the behavior of stream subscribers.

Hype and verbal venting

The building of hype is a normal occurrence in live eSports events and occurs when the crowd becomes engrossed in the current match. Hype often takes the form of short comments mimicking the sound of impacts and general excitement for the event. However, it can also take the form of trash talking and territoriality. Trash talking is the act of making comments against competing players and teams intended to give the speaker an edge. Not intended to be aggressive or mean spirited, these comments are thought of and portrayed as friendly banter between players (Su, 2010). To some, it has been identified as a perpetuation of the toxic meritocracy of video games. Trash talk is often sexist, racist, homophobic, and aggressive. Players have used the guise of competition in addition to other player's lack of ability to justify their toxic actions (Paul, 2018). Trash talking is not only found in eSports but has been studied in adolescent team sports players with similar characteristics and a similar understanding that it is not intentionally meanspirited but a part of the game (Kniffin & Palacio, 2018). Territoriality, another form of hype and similar to the supposed jocular trash talking, involves defaming the region or nation of a team or player and supporting one's own (Su, 2010). This support for the ingroup and disdain for the outgroup has been seen in other areas as well. Social identity and inter-group stereotyping have been studied in brand communities showing, that if loyalty and identity with a brand are high, there is increased use of trash talk and negative appraisal of those who are fans of opposing brands. Also confirmed was that those who participated more frequently in trash talk or accepted negative inter-group stereotypes also derived pleasure from it, similar to schadenfreude (Hickman & Ward, 2007).

Venting has been studied online and is the expression of emotion. Although it can take many forms and encompass a variety of emotions, one form is aggression. Verbal aggression is the use of contentious words or language to attack others. A previous explanation for this behavior was the anonymity of online spaces. However, it has been shown that the behavior of the group and individuals' social identity with that group have more of an impact on the use of verbal aggression (Rosner & Kramer, 2016).

Chapter Five

Research Design

Methods

Two schools of thought have come to shape player interaction research. The first is formalism. This group is interested in looking at the philosophical questions and the individual works themselves. The second is situationism, which addresses the player and the culture around gaming at large. The boundary is permeable between these two schools and most gaming studies researchers use aspects of both depending on the guiding research question (Egenfeldt-Nielsen, 2016). Ethnographies have been used to study players and their interactions for example, but it has also been used to study players who choose to play in isolation. Ethnographic case studies were used to discover what differentiated those who played in isolation and those that played together in groups. This research complicated the concept that players identify with their avatars and how they vary between players (Shaw, 2013).

For this project, a method similar to ethnographic research, netnography, will be used to analyze Twitch.tv viewer comments. Traditional ethnography situates itself in the physical. Fieldwork is conducted from within a physical community as researchers conduct participant observations by interacting and studying the individuals therein (Conquergood, 1991). This fieldwork requires researchers to immerse themselves in the community and allows researchers to participate in their own research to construct a fuller understanding (Conquergood, 1991). Ethnography is an active, participatory, and time-consuming method of research. It is a more involved method that is in opposition to the armchair and hands-off approach to other methods. Rigor and authority in this method reside in the immersion into a community and the time dedicated to it (Conquergood, 1991). The purpose of ethnographies is to provide detailed descriptions of the everyday life of individuals.

Additionally, there is a focus on the communication between those in the community and with the researcher (Conquergood, 1991). Conversation analysis is a direct application of the principles of ethnographic research in the field of communication studies. Dealing mainly with how conversations occur and their structure, conversation analysis also draws on concepts of formal rules in conversation and overarching order (Lindlof, 1995). Mass communication scholars have adopted the concept of conversation rules in studies of television, finding that television viewership was used to stimulate conversation between the couples (Wolf, Meyer, and White, 1982).

Critical-rhetorical ethnography is another form of ethnography that looks at the discourse of group members. It focuses on identification, advocacy, and persuasion through the immersion, participant observation, and interviews (Hess, 2011). This style of ethnographic research takes characteristics from the critical and Marxist schools by addressing class differences and the issue of power stratification between groups. Like other critical perspectives, the goal of this style of ethnographic research is to produce knowledge that addresses the inconsistencies in a value-focused society (Foley, 2002). The fluidity and adaptability of ethnography lends itself well to this style of research. It is, in a sense, a prolonged exposure into a culture in an attempt to better understand the material and social aspects found therein (Lindlof, 1995). Hess provided guidelines to adapt rhetorical ethnography in research. According to Hess, the researcher should conceptualize themselves as an advocate and participate in the vernacular of the communities. This advocacy should arise from engagement with the logics already in place in the community. The timing of the communication should be taken into account during fieldwork, and, finally, the research should be ethical and practical (2011).

Media ethnography does not have a strict physical environment to immerse oneself in but still holds to many of the tenents of traditional ethnography. Researchers have taken to adopting a more fluid interpretation of conducting work in the field. Not needing to be rooted in a physical locality, researchers have taken ethnography to new settings. A prime example of this is the adaption of ethnographic practices in online communities (Murphy, 2011). The areas that have been addressed by media ethnography are the audience, the cultural context of media, and the production of media. This research has been conducted once again through participant observations, analyzing meaning-making of the media and its reception (Murphy, 2011). While traditional ethnography is an involved and time-consuming process, media ethnography has allowed for a broader range of diverse studies (Murphy, 2011).

Ethnographies have traditionally been used to study groups in social settings, but it has been adapted to study online groups as well. Known as Cyberethnography, this form of ethnographic research acknowledges that the distinction of online and offline is blurred and that individuals present themselves through the act of typing and other facets of computer-mediated-communication. This cyberethnography does not look at the technology alone, but at the cultural and social context and construction of artifacts (Rybas & Gajjata, 2007).

Although netnography has adopted characteristics from ethnographic research, there are some fundamental differences. Online sociality is the primary focus of netnographic research and to study this phenomenon; it relies on large collections of online data supplied by individuals and online groups. Digital ethnography contains more traditional methods, such as the addition of some offline data collection. Netnography exclusively uses data collected online. There is a need for interpretation and analysis of communication in an online setting not found in traditional ethnographies, but netnography does adopt participant observation as its primary means to study phenomena. Given the similarities, there has been much discussion over the difference between digital ethnographies and netnographies. However, there is a clear, distinct methodological difference between the two (Kozinets, 2015).

Netnography began in the 1990s with a growing interest in the internet. For this paper, cyberethnography and netnography can be understood as the same process. With an origin in the study of online fan cultures, netnography soon evolved with the introduction of the Web 2.0. Web 2.0 was envisioned as the next-generation of internet content and has been heavily criticized as nothing more than a buzzword or marketing gimmick (Scott, 2009). Kozinets described Netnography in 2002 as "a new qualitative research methodology that adapts ethnographic research techniques to the study of cultures and communities emerging through electronic networks" (p.62). Netnography looks at how users interact and communicate in different online settings including blogs, podcasts, videocasting, and other forms of social networking (Costello, McDermott, and Wallace 2017). Comments and communications in online communities and social media spaces are the areas of analysis for netnographic research. Some forms include observational netnography in which the researcher passively studies the communication between members of a community without directly interacting themselves. This text-based study differs from the participant observation done in more traditional ethnographic studies (Costello et al., 2017). Netnography is particularly useful in the study of personal or politically sensitive topics, due to the anonymity offered by the internet. It is also well suited for the investigation of meaning-making within communities. Netnographic research maintains the concept of thick descriptions used by ethnographers and provides insight into communication in virtual communities (Costello et al., 2017).

Netnographies share the inherent versatility and flexibility of ethnographies with the added benefit of the power of internet searches to provide background and context for potential communities for study (Kozinets, 2002). Kozinets provided certain conditions to consider when conducting a netnography. The site in question should be relevant to the research. It should have a large number of messages and posters, rich descriptive data, and between member interactions (2002). Netnographies yield two types of data; the content copied directly from the source or site, and the data researchers inscribe during their observations of the community. Compared to traditional ethnography, netnography can provide a wealth of data with lesser expenses and time (Kozinets, 2002). Moreover, netnography looks at purely text-based exchanges and communications. Comments and responses may be more thought out and developed by the individual when compared to spontaneous comments made during ethnographic research (Kozinets, 2002).

While the use of netnographies incorporates a wide array of data types, sizes, and scopes, one issue of particular note is the debate over passive or active netnographies. A purely passive approach looks at the content of postings and takes the researcher out of the community. The active sees researchers participating in discussions and making posts of their own. Although there are benefits to becoming a part of the community of study, it is not always possible or advisable, such as when dealing with sensitive groups or topics (Costello et al., 2017).

For my research, I used thematic analysis to analyze the comments during streams. Thematic analysis is a qualitative tool used by researchers to identify and study themes in a given data set as defined by Braun and Clarke (2006). It can provide a more accessible, flexible, and detailed analysis. It also eases the burden of summarizing large collections of data (Nowell, Norris, White, and Moules, 2017). This method does have disadvantages. There is limited literature on the subject and, given its inherent flexibility, there is the potential for inconstancy with the method (Nowell et al., 2017). Guidelines have been introduced to help improve the trustworthiness of thematic analysis. These include familiarizing oneself with the data and constructing multiple rounds of coding, adjusting them as needed (Nowell et al., 2017). A qualitative technique that has been applied to improve thematic analysis is the thematic network. The thematic network is a visualization of the associations of themes and how they relate to the text under scrutiny (Attride-Stirling, 2001). Thematic networks draw on the basics of argumentation theory, which attempts to identify the implicit meaning of explicit statements in communication. Thematic networks also share some similarities with grounded theory (Attride-Stirling, 2001). This tool provides a systematic, visual depiction, of the multiple levels of themes found in the text, from basic themes to global themes (Attride-Stirling, 2001).

Thematic analysis has been used in gaming studies in the past to study massively multiplayer online role-playing game (MMORPG) players. A repeated close reading of the transcripts of the 71 interviews led to the development of themes for attitudes and feelings of these MMORPG players. These interviews were conducted over e-mail and through MSN Messenger, producing a large amount of text needing to be coded and analyzed. The interviews were unstructured and allowed players to construct their own narratives. A software program was then used to code the data. Six different themes emerged from the thematic analysis (Hussain & Griffiths, 2009). This study illustrates the usefulness of thematic analysis as well as its flexibility when addressing large amounts of text-based data.

For my study, I conducted an iterative analysis. Through my participation in the live streams themselves, I could take an emic approach to interpreting the comments made by the viewers and an etic use of existing explanations to understand the motivations behind the comments. After participating in the selected streams, I then coded my data. I did this through a color-coding system in which different comments received a unique color Tracy, 2013).

After the data immersion phase, I performed primary-cycle coding. This process involved close reading of the transcriptions form the chat and highlighting each comment in the chosen color. The end result of this primary-cycle coding were comments placed in several categories that ultimately collapsed into the final themes in the secondary-cycle coding (Tracy, 2013). Some of the themes that collapsed include "comments about the stream" and "comments about the streamer." After returning and recoding the comments, these were added to "general comments" as they shared similar purpose and motivation as other comments that fell under the "general comments" theme. During the second-cycle coding, I created hieratical codes with the three dominant motivations being "social maintenance," "informational" and "aggressive/competitive." Underneath these three the different coded comments fell (Tracy, 2013).

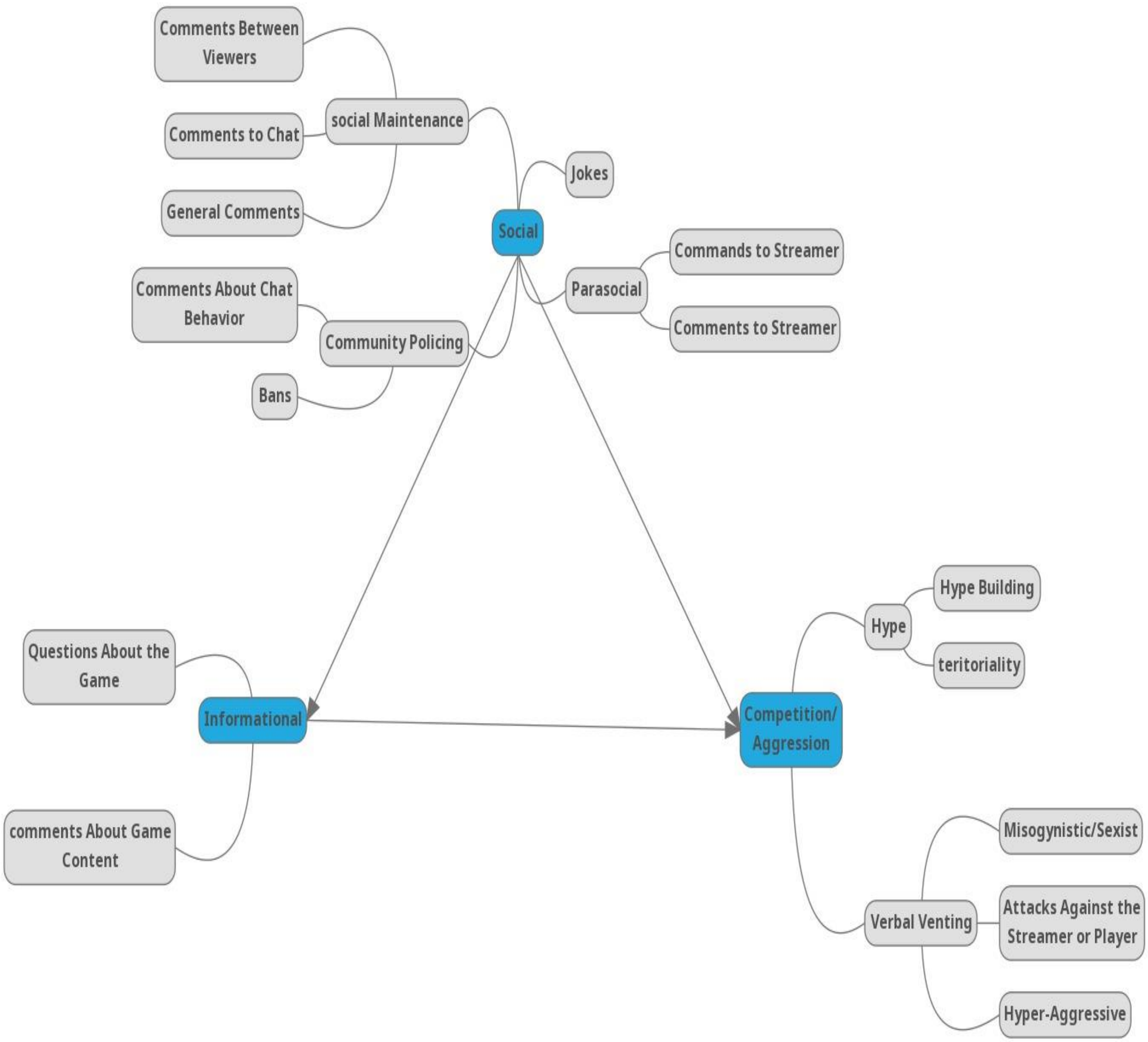


Figure 1. A thematic network of comment motivations for twitch.tv live streams.

Chapter Six

Data Collection

To collect my data, I went to the Twitch.tv main page and searched for streams that fit the three categories identified (Speedrun, eSports/competitive, and Let's Play). These three typologies of stream were adapted from previous studies on Twitch.tv. These are not the only available categories of streams available on Twitch.tv, but they were selected for this study based on previous studies and personal interest. In addition, the choice to investigate Speedruns, a less prominent style of stream, was based on a personal interest in Speedrunning culture and communities. The act of Speedrunning is, to me, a unique form of playing games and personally I find this form of stream to be the most interesting of the three. There are a variety of other types of game related streams, as well as nongaming streams on Twitch.tv. However, because of its use in previous studies and the focus on gaming streams, this typology was chosen for this research. When searching for streams of each type, the search returned a page of live channels that matched the term. From this collection of channels, I looked for channels that had at least 300 current viewers. This number was chosen after looking at the activity of channels with fewer viewers. While these lower-viewership channels are still relevant and provide useful data, the limited number of viewers meant that there was often little activity in the chat.

Once a channel was selected, I then connected the third-party application Chatty to the stream. This application is one commonly used by moderators on Twitch.tv and allowed me to build a chat log with timestamps for each comment and the username of the user who made it. Chatty also allowed me to collect the emotes used by each commenter. By immersing myself through participation in each of the streams allowed me to understand the nuances and purpose of these emotes. Throughout the streams I participated in I was able to witness the subtle differences in phrases and colloquialisms in each stream. This active netnographic style also gave me the hectic and time-sensitive nature of commenting on live video. I experienced the joy of having my comments acknowledged by the streamer and the communal sense of having direct communications with others in the chat.

I worked closely with a well-versed member of the Twitch.tv community to better understand the subtleties of Twitch speak. However, Chatty only saved them as text. Twitch.tv has a database of all emotes, both general and stream specific, that are accessible to the public. With this database, I was able to look up any emotes that were unfamiliar. After Chatty was connected and logged the chat, I preceded to watch the stream and monitor the chat. While watching the streams, I took notes on the general behavior and any interactions that occurred between the streamer and the chat. I participated in chats as they occurred, commenting on what I felt was appropriate and when I felt that I could participate. I watched three Let's Plays, three eSports/competitive streams, and Four Speedrunning streams. Four Speedrunning streams were used because one streamer had to end his stream early and I felt the need to compensate by watching an extra stream.

During the data collection period, the semifinals for the international *Tekken 7* (a competitive fighting game) was streamed on the site, allowing me to collect data on a large scale, organized tournament. The final rounds of the *Cuphead* (an action platforming game) Speedrunning competition were also available for streaming during my data collection and provided further unique data. These events provided me with an opportunity to collect data on both a global tournament and a popular Speedrunning event. The others were smaller in scope and with lower viewership overall. Due to the large number of comments and viewers for these two events, I focused my analysis on the first fifty pages of comments, because, as was the case with many streams, this encapsulated significant events and many of the themes and content of the comments repeated leading to clear saturation.

In total, I viewed ten hours of streamed content consisting of three Let's Plays, three eSports streams, and four Speedrunning streams. These streams resulted in 9084 total comments collected. The Let's Plays were: a stream hosted by a streamer known as Shenpai who played the most recent iteration of the long-running Pokémon franchise *Let's Go Pikachu*, a stream by Elajjaz who played *Ashen*, a recent action adventure game, and a review of recent patch notes (game updates) of the game *Fallout 76* (an online cooperative shooter) hosted by Link, a member of the streaming group Sreamhouse. The eSports streams included: the semifinals of *Tekken 7*, a match between professional teams in *CS:GO* (a team based first person shooter), and a professional match between two teams in *DOTA 2* (a multiplayer battle arena game). Finally, the Speedrunning streamers were: the final match of a national competition for the game *Cuphead*, MozzarellaCheez a member of Speedgaming3 who played *Pokémon Super Mystery Dungeon* (a game where players traverse randomly generated dungeons with teams of Pokémon), Bawkbasoup who was playing *Resident Evil* (a horror action game), and Demon who played *The Legend of Zelda: Twilight Princess* (an action adventure game).

I watched each stream for between one hour and one hour and a half; this yielded an average of fifty pages of comments per stream. After this, I copied the text file of each stream's comments into a Microsoft Word document. These documents allowed me to analyze the comments for themes more thoroughly. The streams were saved to the pages of the respected streamers, allowing me to reference the actual video, with recorded chats when needed.

Chapter Seven

Findings

This project set out to answer three questions: What do viewers comment about on streams? What do these comments reveal about their motivations for participating? And how do these comments vary across stream types? After viewing the 10 streams and collecting 9084 comments, they were placed into six different motivation categories. The first of these categories is social maintenance with contained comments between viewers, comments directed towards the chat as a whole, jokes, introductions, goodbyes, and general comments. The second is parasocial interaction which consisted of comments to the streamer directly and commands for the streamer. The third was information sharing. These comments were about asking questions about the game and discussing detailed information about the game such as its lore and plot, its impact on culture, and its mechanics. The forth was hype with comments dealing with trash talk and territoriality. The fifth was verbal venting comments. These comments occurred in tandem with hype, but I deemed them different with their more caustic nature. Finally the sixth category, community policing, which consist of comments made about the chat's behavior and bans. Most comments were social maintenance comments with 4590 in total across streams followed hype comments with 2232 total comments, most of which were in eSports streams. There were 644 comments for information sharing, 550 for parasocial interaction, 109 for community policing, and 105 for verbal venting comments. Most social maintenance comments and parasocial occurred in Let's Plays, with eSports containing the most hype, aggressive, and community policing comments. Information sharing was evenly split between Let's Plays and eSports with Speedrunning having the least of all categories.

Comments

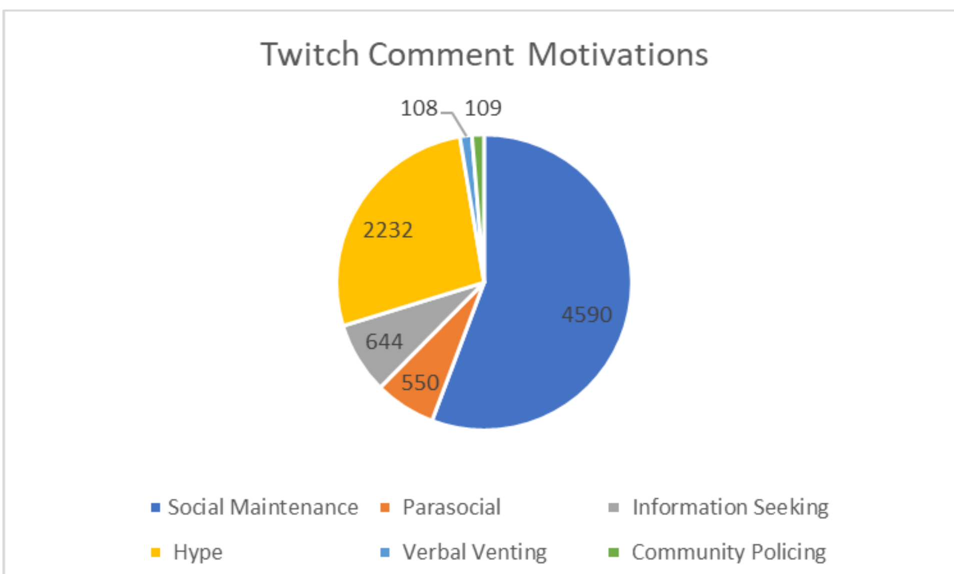
Overall the types of comments fit into three categories: socializing comments where viewers were not commenting on the game but simply communicating with the community or streamer, Competitive and aggressive comments where they were mocking players or teams and their fans such as, “gambit fans on suicide watch LUL” and “NA BAD AT EVERY GAME LUL.” Others were information related comments which focused on the mechanics and design of games and game series. One example of this type of comment would be, “that boss is really precise it is way way harder than it looks, there is a lot of damage output controlling behind [it].”

Throughout all the streams there was a consistent thread of misogynistic comments made. Most often these were about female game characters and their appearance. In the Shenpai stream, hosted by a female streamer, this was still present with the addition to some comments about the male characters. It was also in the Shenpai stream where viewers for a brief time discussed the current status of the streamer’s relationship. This prying was either ignored or dismissed quickly. In several of the streams, there also seemed to be some disdain, although most likely sarcastic, for “weebs;” a derogatory term used to identify fans of Japanese popular culture. In several chats, viewers would call for all weebs to leave, occasionally prompting a rebuttal. In the Elajjaz stream the exchange was usually prompted by a comment similar to “weebs out” and was met with either a repost of “(◕‿◕✿) Dear Weebs in the chat, you are sugoi. Whatever is going on in your kokoro right now, please know that you are kawaii and your story is not a filler. You are loved (◕‿◕✿) KonCha AYAYA” or similar retort. There was also an interesting habit for viewers to disclose their personal routines and recent mundanities in the chat. In one instance chat members shared their time zone. Generally, this discussion of personal lives was superficial, but there was a predisposition in the chats to share unrelated, personal information. In a conversation between two viewers, one shared their experience with a recent surgery, "@Thieffie had surgery myself last week, i know how much post op sucks, still living with it. Get welll soon my dear." This comment prompted others to share their condolences.

Motivations

From these comments in this study, the major motivations for viewers that could be discerned were: Social maintenance, parasocial interaction, the sharing of information, hype, verbal venting, and community policing. A distribution of comment types is shown in the pie chart below followed by a description of the different types of comments.

Figure 3.1



Social maintenance. The motivation of social maintenance was indicated by comments that included jokes, comments made directly between streamers, comments to the chat overall, and general comments about the stream itself such as, "CUTENESS OVERLOAD CANT HANDLE" and "another patch day means another 300 subs". In this sense, streams often mimicked the style of salons in which patrons would gather to talk amongst themselves while some form of entertainment occurred separately and simultaneously. This style of interaction was most apparent in the general comments that would at times be statements about what was on screen or strings of statements about irrelevant topics such as the quality of available emotes or even the "strangeness" of time zones making up 2624 comments across the streams. This social maintenance can also be witnessed in the direct communication between viewers. Direct comments would either appear as jokes or actual discussions occasionally delving into personal issues. 832 comments were those between viewers. Jokes themselves, were also incredibly prevalent and seemed like a major point of the platform accounting for 716 comments. In the more active chats, this became nothing more than an open mic night for viewers to attempt to get a response from others in the chat or the streamer themselves. This social maintenance motive was also expressed to comments to the chat overall including polling questions and declarative statements which accounted for 363 comments. Introductions and farewells to the chat appeared 55 times during the streams.

Parasocial interaction. The motivation of parasocial interaction was indicated by posts that included requests and commands directed to the streamer. These were about how the streamer should play, either as technical suggestions or more narrative driven directions. Sometimes these commands would be joking, but most were sincere "you could use ice fangs on your gyarados @Shenpai." Commands consisted of 94 comments. More prevalent were comments to the streamers themselves. These were social, or content related and often were posted without the @ symbol which informs the individual that a comment is directed towards them. "@Elajjaz I actually saw the easter egg in vod Pog definitely gonna stroll around with my car in my city in the Philippines at 2 am elaOk 🤙 gonna be insane" is an example of this type of comment. 456 comments were made to streamers directly. On several occasions, these comments were addressed to "you" or referred to "we" indicating a connection with the streamer beyond simply a performer such as, "did you upgrade your armor after you equipped it?" Although infrequent, the streamer attempted to respond and communicate with chat, sometimes by calling the handle out and answering the comment or simply by talking about the chat collectively. This may have been infrequent due in part to the large number of comments.

Sharing information. The motivation of information sharing was the most straight forward motivation to identify. Information sharing was indicated by posts that included members of the chat asking a question about the game mechanics, plot, lore, or other systems. An example of this would be, "how do you maga evolve the mons in this game" and "I think Pokémon Rumble was the only WiiWare game besides Ranch we got." Comments like this would prompt discussion amongst the chat. During the eSports streams, this type of information sharing would revolve around character "builds" or the player-chosen qualities of the character in the game. Information seeking comments were 185 of the total and 459 were either providing information or discussion.

Hype. Hype was indicated by short reactionary comments or statements about opposing teams and players. Hype comments come in streams and are often similar in content and mirror the flow of a match. It can manifest in positive or negative ways such as, "LETS GO JDCR LETS GO *clap clap clap*," or "this am eat sh1t". Hype can be trash talk which can manifest as insults or simply short often one-word statements about moves in the game like "GG." Hype can also take the form of territoriality, comments that often defame or support nations and the nationality of players such as "all usa knows is jack and paul and they think theyre good lmfao MingLee." Much of the territoriality that appeared in chats were often quite harsh and extreme. Trash talk made up 2099 and territoriality 133 total comments.

Verbal venting. The motivation of venting is evidenced by comments that are hyper-aggressive and often attacks against a specific individual or other derogatory comments such as, "Aris is the fat virgin that wears black only." While most occurred with hype, others were misogynistic in nature and usually referred to a character in the game; "Tig ol' bitties," was a common style of comment in streams. These comments appeared in all but two streams. Similar to trashtalk, there were some comments that were more aggressive in tone and content. These took the notion of trash talk a step further by using profane and hateful speech. These comments also appeared in streams with little activity from the moderators and streamers. 24 comments were misogynistic, 44 were negative comments about streamers, and 40 were generally hyper-aggressive comments.

Community policing. Finally, there was the motivation of community policing, evidenced by both informal statements made by viewers about the behavior of the chat and formal bans made either automatically by computer-controlled moderators or manually by living moderators. While the informal sanctions made by chat members were directed at the behavior of the chat overall or specific members of it such as, "Jesus Christ this chat is full of bigots my god danWut," the bans were almost exclusively related to messages considered spam (repeating the same phrase or emote in a single comment), using a language not approved by the stream, or having messages that were too long. These bans on average lasted between five and 20 seconds with only a few going beyond that. There were 44 bans and 65 comments about the chat's behavior. Moderators also varied their activity in the chats, with some being proactive and helpful when any misconduct occurred, or participating in the conversation, to almost nonexistent.

Variations by stream type.

As noted previously, themes of social maintenance and information sharing were present across all chats. However, each of the three stream types had unique variations in the content and numbers of comments.

Let's Plays. Let's Play streams were often highly communal and revolved around conversations between viewers with a sweeping range of topics. In these streams, viewers would often erupt into tangents about completely unrelated issues, on occasion sharing details about their own lives. Let's Play viewers also interacted with the streamer more than most other stream types with 341 comments directed at the streamer. Viewers often used pronouns such as "you" to directly refer to the streamer without using the @ symbol to direct their comments. In Let's Plays, viewers would also use "we" when discussing progress through the game as if they too were playing. For Let's Plays, messages between viewers were specifically directed at other viewers and would mainly consist of jokes or questions and responses. Other comments made, though not specifically identifying the original poster, would reference or react to a comment that was made recently. With the high number of viewers per stream, some of these referential comments and reactions would be delayed, but when reviewing the chat log, it was an easier task to trace references between comments.

In the case of the Shenpai stream, a notable conversation that occurred began after one viewer received a warning from the moderator about the use of an inappropriate phrase. After questioning what they had said wrong, others in the chat asked the viewer what was said. What developed was a three-way conversation, with the offender attempting to understand their offense, a few helpful members attempting to explain the transgression, and others in the chat mocking the offender, whether purposefully or not. Additionally, during the Shenpai stream, several viewers posted references to another game throughout the stream. These would often come in waves, prompted by one viewer and followed by others joining in.

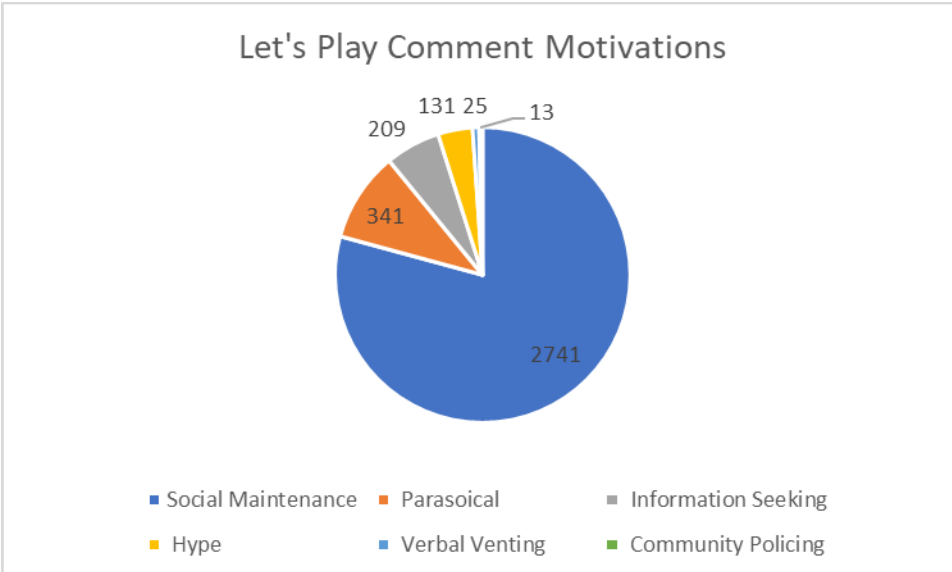
In the sometimes chaotic stream of disjointed statements, there would be moments where the chat became hyper-focused on the game. Once again on the Shenpai stream, who was playing a recent iteration of the Pokémon franchise, a Pokémon resembling a snake appeared in the game. The streamer herself reacted excitedly at the appearance (it being her favorite animal). Concurrently in the chat, viewers began posting the word "snake" or purposefully, comical misspellings of the word. This style of comment went on for some time with several members of the chat participating. The second occurrence of this was when the streamer herself made a joke about the name of a specific Pokémon. The chat replied in kind with playfully mocking remarks about the joke such as, "twitch dot tv slash shenpai has been cancelled" and "your a disappointment to the family." A similar series of events played out in Elajjaz's stream while playing a recently released action game "*Ashen*." The chat, for a time, seemed disjointed and somewhat inconsistent, but as the streamer entered an engaging combat scenario the chat once again homed in on the activity, and a long string of comments was devoted to the game. This focused commenting was coupled by a few viewers jokingly advising the streamer, "Just dont die 4Head."

Ironically, in these streams, there was less discussion about the game and the gameplay mechanics than off-hand jokes and irrelevant discussions. At times players would discuss the rock, paper, scissors style of Pokémon typing or the general aesthetics and similarities to other games in the genre for "*Ashen*." However, more interest was placed on making jokes at or about the game or the streamer. In the Streamhouse stream, due to servers for the recently released *Fallout76* being down, the main focus of the stream was to review and discuss the recent patch notes that provide information about updates and changes to the game. In this stream, some conversation focused on the changes, but it was quickly outpaced and outshined after one viewer, seemingly a friend of the stream, gifted 100 subscriptions to 100 viewers. This gift-giving episode highjacked the stream and forced the streamer Link to write the names of every new subscription holder onto a Christmas ornament for a fundraiser that was in progress. The chat erupted into jokes and comments about and to the streamer while the same five-second loop of Randy Newman's "You Got a Friend in Me" played for each new subscriber. A few viewers were upset about the lack of content relating to the game, but most reveled in the absurdity of the events, more so after the second batch of new subscriptions was gifted.

For a short time, the Streamhouse stream chat revolved around a conversation on smoking. This discussion occurred after the streamer made a joke about throwing the cigarettes of another member of Streamhouse into a pool. Many viewers shared their personal experience with smoking. Such as one individual in the chat who posted, "stole my first pack of cigs from my mom when i was 11" and others discussed the health-related concerns of electric cigarettes compared to traditional smoking.

Let's Play viewers used humor, sharing jokes about the game itself and sometimes society at large. On occasion, these jokes would ignite the stream and would end in a string of referential and adapted forms of the same comment. In the Let's Play streams, I felt somewhat like an outsider. It felt as though many of the members already knew one another and there was a sense of an already established ingroup. This familiarity was most apparent with members that were subscribers. These viewers were identifiable by a small icon next to their screen name. That is not to say that these streams were hostile to new members, but upon first viewing of these streams, I felt unaware of expectations and norms. Because of this if I made comments. They were often short and generally benign. In general, these streams were more social and less informational, focusing mainly on shared in-jokes and interacting with the other viewers and the stream, not concerning the game, but through it. Below is a visualization of the division of comments for Let's Plays.

Figure 2.2



eSports. Let's Plays acted as a social hub for individuals to connect through a shared interest in the streamer or content. The competitive esports streams were something different. These streams tended to be aggressive and filled with trash talk. Most comments would berate either a specific competitor or an entire team. During the stream for *Tekken 7,* most consistent conversation revolved around the supposed nationality of players and the apparent inferiority of their countries. On occasion some viewers would address the negative conversation of the chat itself with comments such as "A lot of bigots in here atpBigot," but it was either ignored or overwhelmed by the constant barrage of comments. The chat itself had racial undertones Even when a conversation was between viewers it revolved around the ethnicity of the players themselves "JIMMY | BORN IN AMERICA / TISSUEMON | BORN IN JAPAN / HOW DUMB ARE YOU EUROSHITS? MingLee MingLee." There would also be aggressive and spiteful comments about different regions, mainly focusing on North America and the European Union such as, "LUL imagine not gettin shot at school

LUL fokin eurotards LUL." It is also interesting to note that the most and longest bans of chat participants in streams occurred in the competitive streams. Viewers were banned when using languages other than English or having a string of the same phrase or emote. Most of these bans lasted from one to ten seconds, but a few went for 600.

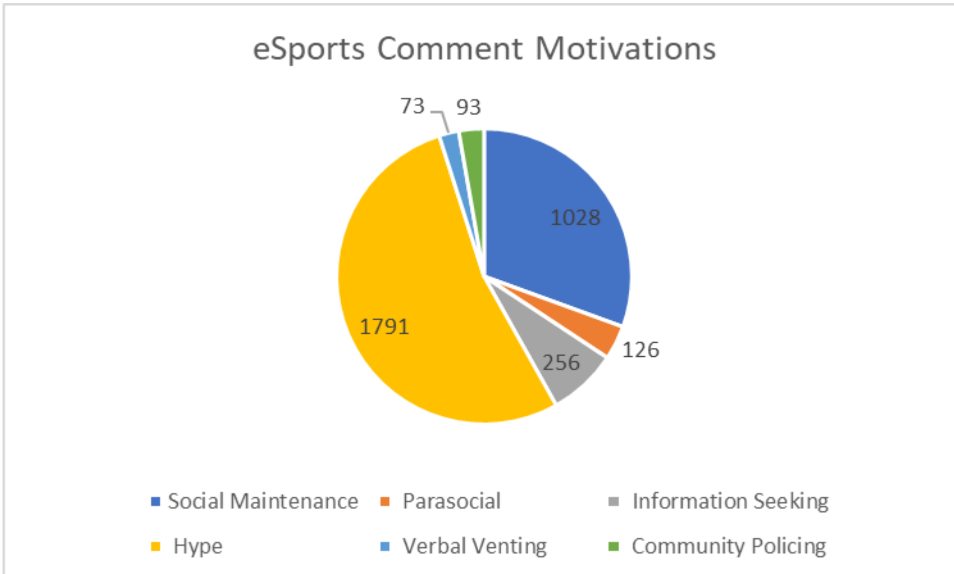
Although still aggressive, the BeyondSummit Stream's viewers focused their disdain on the announcers with comments such as, "this game would be really nice to watch if it wasn't for Kyle commentating. Bad enough we have to listen to his garbage between games, but now you have him ruin the games too? Come on GabeN." Most of the comments made about the announcers were mocking, asking for certain commentators to leave and decrying the irrelevance of their commentary. Some viewers came to the defense of the announcers, but little discussion occurred beyond a scattering of remarks. More comments focused on core gameplay mechanics in the BeyoundSummit stream. In this chat, viewers would discuss and judge the character builds of the competitors, ignoring the announcers entirely in favor of their own discussion.

Comments were still harsh towards players and builds but were less frequent than in the *Tekken 7* stream. Some conversation strayed to nationalities and the inferiority of some compared to others, but more were focused on the current game being played. Like Let's Plays, the viewers in the BeyondSummit would play off of the comments made by announcers. When the announcers began discussing different types of bread the chat ran with the topic. A short string of comments was about bread and breakfast food ending in a definitive statement, "potato bread is amazing." The chat would also comment directly to a preferred announcer and make jokes to him in addition to commenting on the less favored announcer. When there was an intermission between matches, the chat would fall into random comments often referencing ads that appear and their content. The BeyondSummit stream, while less overtly aggressive than much of the *Tekken 7* stream, was still marked by a tinge of aggressive commenting.

The final competitive stream was also the most aggressive. It was a stream of the game *Counter-Strike Global Offensive* (CS:GO). Interestingly, it was the only stream where players actively admitted and discussed betting on matches. This overt gambling may have contributed to the aggressive air of the stream. Some viewers mockingly demand that only high-ranking players should participate in the chat while others attacked players and teams for being unskilled, “If you're not high rank in CS:GO (Gold nova 1 or higher) do not talk noise in chat !!” Most of the game related comments were either statements of frustration for poor performance or cheering. When anything exciting unfolded in the match viewers would often debate the skills of the players and the strategies employed. There were also those in the chat who had seen other streams of the same match and began posting the end score. Seemingly prompted by the posting of scores, others took the liberty of posting fictitious scores. Near the end of the stream, when the match seemed most critical, players began to claim that teams were throwing the match. An accusation that has been shown to be true in the past. Other comments attacked the fans of opposing teams and the nationality of the announcer. Of the chats, this was the most uninviting and aggressive. The chat was filled with personal attacks against other viewers and players alike. What remarks made about the game itself were limited to cheering and jeering of teams.

Much like the Let’s Plays, viewers in the competitive streams would become focused on the game's content for extended periods during the stream. This attention often happened when a match heated up or when something significant occurred such as an upset for a favorite or an impressive maneuver. Below is a visiualizaiton of comments in eSports streams.

Figure 2.3



Speedruns. The final content type viewed was the Speedrun. Although Speedrunning may not be a prominent type of stream, it is the one that I felt was most unique and interesting of the three chosen typologies. Speedrunning is a unique blend of competition, raw skill, and in-depth knowledge about the game. It is also the group of streams with some of the most intriguing viewers with the most apparent difference in behavior.

Of the three this was the group that felt most inviting and supportive. In the Speedrun competition for the game *Cuphead,* I found myself asking questions about terms as the use of Speedrun specific phrases was prevalent. Like others who posed questions, I received quick, polite responses from others in the chat. This willful sharing of information was not the only evidence of a supportive community.

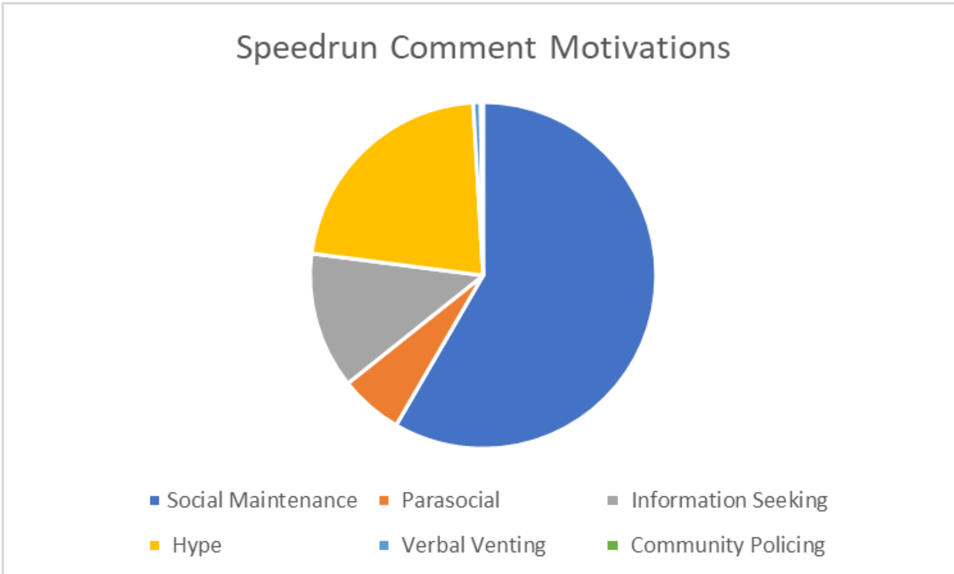
During the final match of the *Cuphead* Speedrunning competition, one competitor had an issue with a glitch that halted their progress in the game early on. It looked as though there would be no way to recover as the other player continued at a blistering pace. Several individuals in the chat offered their support to the competitor, but shortly after that, the lead player agreed to stop to allow both to restart. This display of sportsmanship was met with overwhelming praise, support, and admiration as the chat erupted in positive comments. "Cuphead people are good people" one comment read in response to the gesture.

In something that can only be described as a long-from Speedrun of a lengthy Role-Playing Game, *Pokémon Mystery Dungeon,* the chat was mainly focused on communicating with the streamer. During the marathon session, the streamer recounted stories, and the chat responded to it with appreciation. One viewer stated, "I dont like the game as much as you tell stories :D" in response to a somewhat touching story by the streamer. It was during this Speedrun that one of my comments was acknowledged and made mention to by the streamer. It was surprising how excited I was to have my comment addressed. I enjoyed knowing that what I said was significant enough to be read by the streamer. I also had a brief discussion with someone else in the chat about the game's genre. Like the *Cuphead* stream, there was discussion about the game and its systems with several asking questions to the streamer and the chat in general. Unlike the *Cuphead* stream, this one was more focused on interacting with the streamer as he played. The *Pokemon Mystery Dungeon* stream had a very relaxed feel to it that was overall not apparent in other streams to the same degree.

Similarly, those who were commenting on the Bawkbasoup stream focused their comments and discussions on the streamer himself and making jokes about the game. I commented on the poor quality of voice during one of the game's scenes. Once again, my comment was recognized by the streamer and even got a laugh. Afterward, I felt the need to be more involved in the chat in hopes of delivering another gem. My short comical statement also started a brief string of comments relating to the voice acting caliber. At the end of the Bawkbaosup stream, the streamer stated that he was tired and had to stop to get some sleep before his “real” job. This statement was met with support and pleasant farewells by those in the chat ending with the appropriate comment, “good night mr soup.” Because this stream ended prematurely, I chose to view an additional Speedrunner, this one known as Demon. Like the others, aside from the *Cuphead* stream, the conversation was mostly directed to and about the streamer. There was also a brief exchange about various emotes that were made available to subscribers. The Demon stream consisted of a small group of viewers whom both appeared to know the streamer and each other personally. These viewers dominated most of the chat as the streamer played.

Speedrunning streams had the lowest amount of comments for their respected number of viewers. The comments were more focused on the game and its mechanics than either the competitive eSports or the Let’s Plays. The community of the Speedrunning streams was also more prosocial and supportive to its members. It felt as though I was more welcomed in these chats and because of that, I found myself participating more than the others. Below is a dipction of the breakdown of comments for Speedrunning streams.

Figure 2.4


Speedrun Comment Motivations
Social Maintenance
Parasocial
Information Seeking
Hype
Verbal Venting
Community Policing

Chapter Eight

Data Analysis

Comments

The findings of this study agree with previous investigations into the behavior of Twitch.tv chats. The majority would appear to be "crowdspeak," a style of communication identified in previous studies. This style of large-scale communication is no different from large chat rooms where members cluster together in conversation and create coherence in large scale conversations. There is still logical, coherent, and productive communication in these massive collections of voices. Twitch.tv viewers utilize the same techniques identified by previous studies such as using short, simple comments and well-known abbreviations to keep up with the rapid pace of chats. This study supports this positive view of chat behavior. It is not a random collection of unconnected thoughts, but a sometimes jumbled and surprisingly coherent collection of conversations between viewers. Many of the behaviors and tendencies are like those of large online communities with members commenting and posting with the hopes of being noticed by their peers or the streamers.

Community attachment through emotional support and a shared group identity best explain the behavior of chat members. Many of the same behaviors found in successful online communities are mirrored in the communities that form around these channels. In these spaces, viewers feel that they are validated and are free to speak and joke with others without fear of reprisal or judgment. They know that their contributions will be appreciated either by the chat or the streamer. These viewers are far from the purely passive audience of traditional mass communication studies and share some characteristics of users. Chat members would act as traditional spectators at a performance but would also add to the performance through their interactivity with the streamer.

Motivations

As discussed in the findings section, the most prevalent comment found in all streams was that of social maintenance, demonstrating the importance of maintaining social bonds and creating a sense of community. Although not the only motivation, this was the main appeal of most streams. The content of the stream may have been the initial draw to begin watching, but it was secondary to the chance to interact and perform for the streamer and the community. Most communication towards the streamer was one-sided, such as the parasocial relationships found in previous studies, with fans presenting an intimate and indebted connection to the streamer with little direct interaction. This behavior may have been due to the streams that were viewed, but the interaction on behalf of the streamer was minimal and superficial. Unless a subscriber was involved, complicating the idea of a parasocial relationship created by the viewer and shifting it more towards a service that is provided by the streamer. A sentiment some streamers agree is the goal of a successful stream.

Information seeking and sharing was a perfect example of a community of practice. With more knowledgeable members sharing with those who were novices, with both parties gaining in the end. This gift-giving of information was not done to improve reputation as some have identified in online communities (Lampe & Bhalla, 2007). Similar to most healthy online communities, it was done with benefices and little expectation of reprisal. Members of Twitch.tv streams show trust in their fellow members to provide accurate and useful information, demonstrating once again the strong sense of community identity and affective attachment found in Twitch.tv communities.

The appearance of hype was of no surprise and its more prevalent appearance in eSports streams was also to be expected. As previous research has identified, the hype on Twitch.tv came in waves as the games reached pivotal points. The content of those comments coded as hype also aligned with previous research, being punchy, short, and reactionary. What was a surprise was the harsh territoriality. Although a normal part of hype, on Twitch.tv it would take a hateful turn. Not simply focusing on the teams of each country but attack the nations themselves. This, almost nationalist behavior, went beyond what was identified by previous research (su, 2010), but still resembles the derogatory trash talk found in young athletes. It is interesting how these appear in viewer comments on eSports in similar ways as it has been seen in team sports players. With their high levels of investment, they become engrossed in the game like patrons of a sports bar.

These comments do sometimes go a step further and become noticeably more aggressive, acting as verbal venting. It is important to note that this category of comments was the smallest. Video game culture has become a place where aggressive behavior and toxic masculinity are tolerated, and Twitch.tv streams are no different. This acceptance of a racist, masculine, toxic culture has been well documented throughout video game culture both in academic circles and the popular press (Paul, 2018) These more aggressive comments were in the minority, but they appeared in almost every stream, with streamers occasionally taking part. The tolerance and use by the community have made it an acceptable form of expression and has been adopted by viewers into the group identity. As discussed in previous research the behavior exhibited on the stream is indicative of the norms and guidelines of the channel as well as the behavior demonstrated by the streamer. Previous research has looked at these instances of aggressive venting in the context of online interactions and shown that it is most closely tied with the behavior of group itself and often occurs in small amounts, while a majority of the comments remain more docile by comparison (Rosner & Kramer, 2016).

The smaller amount of community policing and moderator involvement can also explain the variation in comments. Those chats with higher moderator activity, or those with clear guidelines and members that take action by chastising those who comment in negative ways, are the same streams with high levels of attachment to the community.

As identified in the first academic book on the subject of Twitch.tv by T. L. Taylor, there are multiple motivations for viewership for the platform and these variations are not fixed or mutually exclusive, but instead are fluid; fluctuating in amount and strength at any given time (2018). While Taylor dedicates a small portion the book to focus on the audience, this research takes a more in-depth look into what motivates viewers to comment, and it is clear that while there are multiple motivations similar to ones previously identified, the major draw for viewers is social interaction, bonding, and maintenance. The overwhelming number of comments relating to social bonds across every stream show that this is the primary appeal of the platform. It is a place where enthusiasts and fans can come together and interact around a shared area of interest.

Variation by stream type

The variation in frequency of comment types across the different streams (Let's Plays, eSports, and Speedrunning) was not surprising. Like the constantly shifting motivations for viewing described by Taylor (2018), and the various eSports viewers identified by Cheung and Huang (2011), each of these content types draws on a specific motivation. That is why there are more competitive and hype related comments in eSports streams and a greater focus on parasocial interactions in Let's Plays. Viewers select these different content type for various reasons. What is significant is how the streamer can affect this. The personality and activity of the streamer can change the behavior of the chat, shifting focus away from a competitive match to jovial interactions with hosts. Or shifting the informative discussion found in a Speedrunning stream to an idyllic fireside chat.

Twitch.tv as a community

Communities form when there are clear expectations and boundaries set in place and with good leadership. Twitch.tv streams are no different. These communities do not form around a content type but around individual streamers or shared channels. This focus on the streamer is most apparent when looking at the large number of channels, each playing the same game, but with different levels of viewership. However, major eSports events do draw large crowds, but these chats are often less prosocial and often more focused on hype and less about social maintenance. These eSports events do not maintain a consistent community, but smaller or more personal streams do. That is why it is best to understand each channel as its own community where viewers form strong parasocial attachments with streamers which, they feel, share their ideals. Like other online communities, these viewers are not beholden to stay and can leave at any time but choose to return and support these individual streams. Their attachment to those in the chat and their parasocial bond with the streamer kept them engaged and committed to that particular stream. Some streams had viewers who had been subscribers for years. Viewers can choose to follow channels and receive updates when new streamers are occurring. They can also choose to subscribe and directly support streamers they enjoy. Viewers can join any stream, at any time, and lurk to see if they like the streamer or the community. They can post, even without subscribing or following, and participate in the community if they feel that it is one that they can trust. The content type or the game being played may be the initial draw to start watching, but the streamer and community are what keep viewers committed and participating. Twitch.tv itself is not a community in the same sense. It is a platform that allows users to create and distribute their own content, allowing viewers into their lives to varying degrees, and interact directly with their audience. Each individual channel is a community of viewers who have a shared, vested interest in the streamer and their fellow viewers. Twitch.tv provides the groundwork for streamers to foster and grow communities, as they see fit, through the interactivity and participation of the active user-audience.

Chapter Nine

Discussion

Games have always been a means for individuals to bond. Whether playing on the couch with a sibling or playing online with a friend on the other side of the globe, gaming is a social experience, and the ways we engage with that experience is changing. Nothing has made that more evident than the rise of Twitch.tv. Now gamers can interact, socialize, learn, and enjoy the narrative without the need to play or even purchase the game. With its live, user-created content and audience interactivity, it has changed gaming culture. That is why it is an important area of study.

I have been a gamer for most of my life. I have spent countless hours playing, researching, reading about, and now watching video games. I have also become fascinated by the culture that surrounds video games and the creators who make them. Twitch.tv has always been something of an enigma to me. Until recently it was nothing more than a name I heard thrown around and referenced in a great deal of articles. However, following my time analyzing Twitch.tv, I see it as an influential platform that, not only, has brought video games and video game culture into the mainstream, but also become a major player in the industry. Twitch.tv serves as a hub for all levels of gaming fans to gather around and interact in a safe, neutral space where everyone is in the ingroup. References and inside jokes can be thrown around with the understanding that everyone knows.

Beyond this basic understanding of norms, streams provided a safe space for individuals to gather and communicate while in the presence of entertainment. In this way, streams resembled salons, with the streamer performing for a collection of viewers predominantly engrossed in their own conversations and only tentatively paying attention to the performance taking place. Conversations can swing wildly and sometimes stray to irrelevant talk, but the stream itself provides the atmosphere and backdrop for socialization of the viewers. In a sense, the streamer and the content draw people to a stream by laying the foundation, but the chat itself performs the work of community building along with the generation of productive communication. The salon atmosphere was apparent in a number of streams, predominantly in Let's Plays and some Speedrunning streams. However, this is only one side of Twitch.tv video game streams. The other is the sports bar atmosphere of eSports and other competitive streams. The sense of a collective of dedicated fans sharing the same space as they watch intently at the same game. Some in groups, others alone, but all making quips or short comments on players and gameplay. In some ways, this behavior is less social than the salons of Lets Players. eSports streams were about the game, and thusly the sports bar atmosphere is dominant, as viewers shame their rivals and cheer for favorites.

As a gamer myself I came into this research with the belief that the toxic, aggressive gaming culture was nothing more than a misconception held by the public at large. After spending time in the chat for each stream and analyzing the comments, it has become apparent that although it is not a majority, it is a consistent and prevalent behavior on Twitch.tv. It was shocking to see these types of comments pop up and either be encouraged or simply unaddressed in the streams.

Previous work on Twitch.tv has focused mainly on streamers, their productions, and the platform itself. This study, however, chose to focus on the viewers, the motivations to comment on streams, and what they are commenting about in those streams. By focusing on the viewers, this study provides a unique perspective on Twitch.tv and how it is actually being used.

Twitch.tv is a place where small communities are built around unique and interesting personas who benefit from an active, engaged community. It is primarily a place for fans to gather and socialize, providing small hubs much like salons where patrons can chat while a performer or poet provides ambiance. It is also a place to gain and share knowledge. Where someone who is interested in a game can go, get a look at it, and ultimately make an informed decision. Finally, it is a place for competition spectatorship, where fans can trashtalk and share elation for their teams. Moreover, the comments analyzed reflect this. Those who come to Twitch.tv and comment do so to interact with close friends and acquaintances. Some do wish to learn either about the game or the systems behind it and others come to watch eSports and follow their player or team. I also feel that it is representative of gaming culture as a whole, with all the blemishes intact. Misogyny, racism, and toxicity are all present and widespread in the larger gaming culture, and they are tolerated and on occasion supported. This trend is nothing new, but it has been growing and seeping into every corner of video gaming, and Twitch.tv is no exception. As a gamer, I entered this study believing that the popular portrayal of toxic, sexist, and racist gamers was hyperbolized, but as I uncovered in my analysis, it is not. Although, not a large component to the comments overall, there was a consistent prevalence in nearly every stream. It was shocking to see it ignored or placated by others in the chat with few attempts at correction by the community or the moderators. Though this prevalence and acceptance are troubling, it is not all negative and antisocial behavior. Most streams were populated by pleasant chat members, and the interactions were supportive and beneficent.

In some cases, it was heartwarming and encouraging. Twitch.tv has a power to do good for gaming, with the strong draw of unique personas, clear guidelines of expected behavior, and with active moderators, these channels could be a place of change in gaming culture. However, it could also be a place where these toxic behaviors are nurtured and grow. Streamers could do more to present prosocial behavior, knowing the impact and impression that they make to their viewers. They could promote appropriate behavior to help curb the toxic comments. Twtich.tv is a major player in the video game culture. It is a major draw for casual and serious fans alike. Because of this, Twitch.tv can be a driving force in taking video games into the mainstream. However, there needs to be more done to monitor and demonstrate positive, supportive behavior. As an influential platform in gaming Twitch.tv can help demonstrate and encourage positive behavior both to those not immersed in gaming culture and those within it. That is not to say that it will be able to produce this monumental change overnight, it will be a long process and require effort by both Twitch.tv and the streamers themselves.

Moreover, it may be that some of this hype and aggression is inherent in the culture such as in eSports. Like other professional sporting event scenarios, it may be built into the norms of that community, but there still can be a correction for those comments that go beyond simple hype. Finally, it may be a matter of active moderation. Those streams that had active and visible moderation activity and engagement often had more positive and supportive communities.

Studying Twitch.tv chat member behavior and the motivations behind them can help researchers understand the current climate of the gaming community. It is undeniable the prevalence and significance of Twitch.tv and its place in gaming. Because of this, it needs to be studied further as well as its communities. Not only would study further enlighten content creators, allowing them to develop content more in line with viewer motivations. It can also help researchers study gaming culture, online communities, user-created content and how we communicate around it.

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Appendix

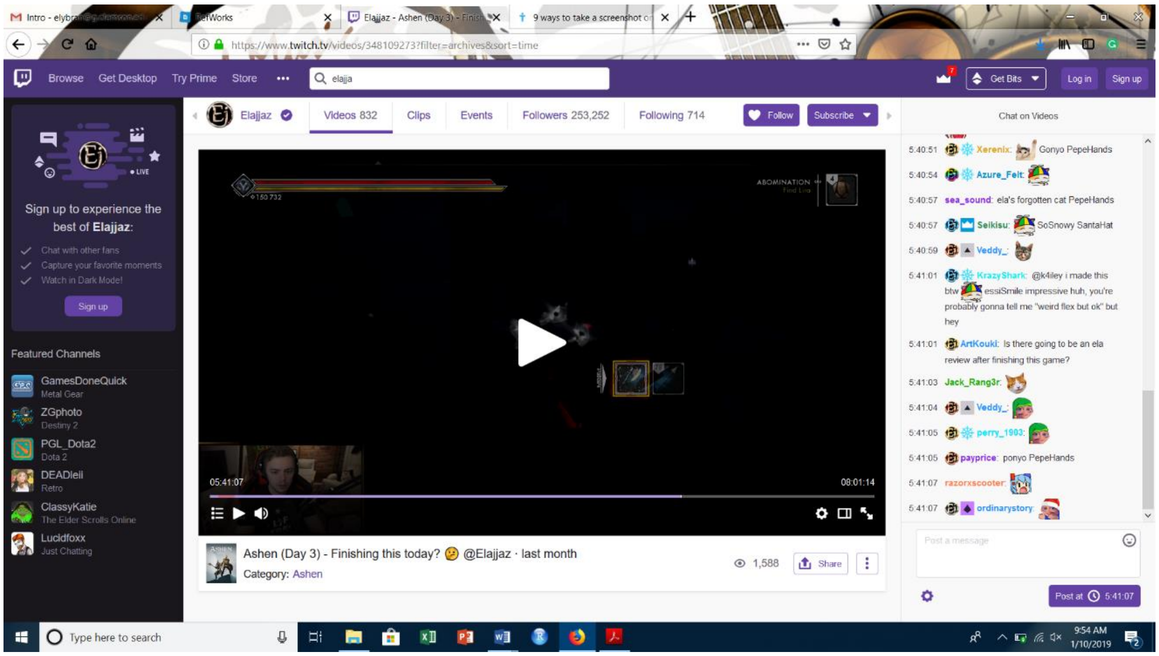

Figure 3, A screenshot of a game stream and the accompanying chat.