the Livestreaming Game

Understanding the encounter between Twitch streamers and digital games

Kas van der Molen

Student ID: 5731445

k.vandermolen@uu.nl

RMA Thesis – Media, Art, and Performance Studies

Department of Media and Culture Studies

Utrecht University

11 June 2021

Supervisor: Dr. Stefan Werning

Second reader: Dr. René Glas

Utrecht University

Abstract

This thesis explores the relationship between livestreaming and videogames as a cultural form through a qualitative study of game livestreaming practices. Zooming in on the Amazon-owned livestreaming platform, Twitch, I present an approach to analyze this platform as a site to study players. Doing so characterizes the livestreaming ecosystem as crucial to the distribution, proliferation, and cultural form of videogames. On a microscale, livestreaming contributes to meaning-making for communities of players. On a macroscale, it reshapes business models through platformization, represented by the coevolution between game design and livestreaming practices. Studying players, in this context, has several meanings. It addresses both the streamer-player as the one controlling gameplay, as well as the audience members and supplementary players that engage with the gameplay of the stream. In the first part of this thesis, I address how livestreaming can concretely affect games as a cultural form, by providing a site to develop communities and to exchange knowledge in and about games. In the second part, I will delve deeper into the interaction between streamers and videogames, by developing a theory of *streamability*. I define streamability as a phenomenon that grants Twitch a central position in the distribution of media texts while simultaneously giving participatory users the crucial role as diversifiers of games as media texts. Analyzing which contexts, occasions, and affordances allow for the creation of content that is worthy of streaming, this second chapter develops a theory of what I call "streamable contexts." Secondly, the study of the coevolution of game design and livestreaming practices will address what makes for "streamable game aesthetics." My approach consists of a combination of the study of players on Twitch and a grounded theory of streamability for game livestreaming. This thesis displays how the livestreaming ecosystem fundamentally reshapes games as a cultural form, as an industry, and as a culture. This particular cultural form is one that gives streamers the agency to play *with* games and their audiences while creating long-lasting communities in the process.

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Introduction

In the spring of 2020, when large parts of the world went in lockdown due to the COVID-19 pandemic, the livestreaming platform Twitch.tv (henceforth "Twitch") saw a sudden increase in concurrent viewers, channels, hours watched, and hours streamed ("Statistics" n.d.). As a result, some videogames have become more relevant than ever and game livestreaming itself has received mainstream media awareness. The indie game *Among Us* (Innersloth 2018) suddenly rose to popularity two years after release, when several streamers decided to stream the game on Twitch. Even US congresswoman Alexandria Ocasio-Cortez has been streaming *Among Us* on Twitch on several occasions, for entertainment purposes, to talk about politics, and for fundraising. This popularity of games through livestreaming is by no means exclusive to *Among Us*. Other games, such as *Grand Theft Auto V* (Rockstar North 2020; henceforth *GTA V*), *League of Legends* (Riot Games 2009), *Minecraft* (Mojang 2011), and *Counter-Strike: Global Offensive* (Valve 2012) are all relatively old but usually among the most streamed games on the livestreaming platform. This thesis will delve deeper into the relation between games and livestreaming. I argue that livestreaming contributes to a common cultural understanding of games and vice versa, meaning how broader cultural phenomena are represented in games. In other words, I seek to develop an understanding of games as a *cultural form* (Williams 2003). The title of this thesis refers to both the literal games as cultural artifacts for livestreaming, as well as the proverbial "game" streamers play to transform games into content for Twitch. What I call "the livestreaming game" is thus best understood as a *metagame*, a game about games (Boluk and LeMieux 2017). This way, the practice of livestreaming transforms games as artifacts into tools for the creation of content and consequently games as a cultural form. I will define streaming as a form of player-response and develop a renewed understanding of what I call the *streamability* of games. Doing so can gain further insights into the relationship between the livestreaming industry and the game industry and how it affects game aesthetics, public opinion, and ultimately games as a cultural form.

About Twitch.tv

As of 2011, Twitch was the game live streaming sub-branch of a general interest livestreaming platform called Justin.tv. In 2014, Justin.tv was rebranded into Twitch and the service was later acquired by Amazon. The platform has since been growing steadily, averaging over 2 million

daily concurrent viewers in 2020 ("Statistics" n.d.). Despite some large-scale professional productions with significant viewership numbers – mainly in esports (formalized competitive gaming competitions) – user-generated content (UGC) is Twitch's main feature and has allowed for numerous microcelebrities to emerge. Content creators can stream various forms of live creative content, ranging from podcasts to gameplay. The majority of content centers around digital games. Twitch orders content primarily utilizing "categories." Each game has its own category and there are several other categories on Twitch, ranging from "Just Chatting" to "Cooking" and "Music." Content creators can stream from their computers or game consoles while relaying their audio feeds, with or without webcam footage. Succesful content creators – those who achieve the "Affiliate" or "Partner" status on the platform – can receive donations through audience subscriptions and donations. Twitch Partners can generate revenue by activating advertisements and accepting sponsorships. Audience members can subscribe to a streamer, which can grant them access to exclusive content, or they can donate "bits" – Twitch's donation currency – to a streamer. Oftentimes, receiving a donation, subscription, or even a follower will result in a notification displayed on screen to which streamers commonly react by thanking the audience. The nature of Twitch as a platform for UGC dictates that the content creators become crucial players within this codependency. The streamers are the ones responsible for the transformation of "private play" into "public entertainment" (T. L. Taylor 2018), therefore changing the very nature of the videogame as a cultural form.

Even though Twitch now also welcomes non-gaming livestreaming content, game livestreaming remains the platform's core characteristic. For the contemporary game industry, livestreamed play has become a significant practice in the reception and lifespan of videogames, causing an increasing state of codependency between Twitch and the game industry (Johnson and Woodcock 2019b). We find the cultural producers of Twitch in between these two industries taking up the crucial role of facilitating the interaction between the consumers and the two industries. These platforms, as connective platforms, "are dependent on 'complementors' – organizations or individuals that provide products or services to end-users through platforms, interlinking different 'sides' and hence constituting multisided markets" (Van Dijck, Poell, and De Waal 2018, 17). This dependency on content creators as complementors thus highlights the important role of UGC for two sides of the market: Twitch on one side and the game industry on the other. Before the rise of digital platforms, the gaming industry functioned as a two-sided market where game consoles – such as Microsoft's *Xbox* and Sony's *PlayStation* – functioned as venues to reach players (Nieborg and Poell 2018, 4284).

The introduction of digital platforms has since completely reshaped how the game industry operates, which has made it so that the dominant revenue stream for the game industry has been the commodification of content. This commodification of content can be by distributing cosmetic content in-game, by selling seasonal membership in games (e.g., "battle passes"), or by finding a way to commodify Twitch streams as paratexts. Previous research in the field shows that with "free-to-play" business models (Nieborg 2015) and "games as services" (Sotamaa and Karppi 2010), digital platforms have become central players in the distribution of videogames through the commodification of (secondary) gaming content. This thesis proposes to zoom in on the Twitch streamers, the content creators, as a central player within this market structure.

As highlighted above, there are several dimensions in which there is a concrete interplay between livestreaming and videogames that significantly affect how we perceive games as a *cultural form*. This is a term derived from Raymond Williams' (2003) seminal work on television's cultural form, in which he developed a social understanding of technology beyond determinism by accounting for television's technicity, its social use, specific contents, and even regulatory contexts. Similarly, such an approach for the study of games would have to take into account the interplay between games' technical properties, its social use (i.e., livestreaming), and the (platformized) context from which it happens.

Research questions

The main research question will address the relationship between players and games. These "players" are both the streamers as players, as well as their audiences and larger gaming communities. The following research question will be central in this thesis:

How does digital game livestreaming reconfigure the player-game relationship and games as a cultural form?

This question will be addressed by discussing the streamer–game relationship that emerges between different streamers and different games. As such, it will provide a deeper understanding of videogames as a cultural form in which livestreaming plays a central role. The term *cultural form* has a specific implication here and is deployed to address the particular institutionalization of culture. The term is thus a continuation of Williams' (2003) focus on the

social dimension of technological development and the celebration of human agency. For contemporary theorists, like Jenkins, Ford, and Green (2013), it means that we have to study cultural form as the interplay between different levels and manifestations of culture. In a similar vein, I will introduce the term *streamability* as a central framework for studying this relation between games and livestreams. Taking the player as the central focus of this study, I will delve deeper into the networked relation between players and games as manifested through livestreaming. The title of this thesis, "The Livestreaming Game," refers to this process, accounting for the streaming metagame streamers play in the livestreaming ecosystem, how they transform games into content, and how game developers play into this. The main research question will be followed up by several sub-questions further defining such streamer-game relationships.

- ***How can game livestreaming be interpreted by adapting the notion of player-response?***
    - *What are the roles of players to games as a cultural form?*
    - *How is "gaming capital" produced and exchanged through livestreamed play?*
- ***What makes digital games "streamable" content?***
    - *How do particular games invite the creation of particular kinds of content?*
    - *How does context affect streamability?*
    - *How does streamability affect game aesthetics?*

Literature review

The first academic interest in Twitch dates from 2012 when Twitch was still part of Justin.tv. Kaytoue et al. 2012), described Twitch as a platform for the emergence of web communities, esports, and as the "perfect witness of events happening in the video game industry and community" (1184). To this day, these are highly relevant observations about a platform that has changed so much since 2012. Crucially, they posed that the results of their article were to become relevant for *all* actors of the Twitch community, meaning spectators, (pro-) gamers, sponsors, game developers, and platforms. In the years following this article, the growing body of knowledge and academic research on Twitch went in various directions, studying Twitch as

a platform, a workspace, and as a culture. Numerous examples of these studies will be highlighted in the coming sections of the literature review.

Twitch as a platform for user-generated content

A critical perspective coming from platform studies sheds light on Twitch's ownership by Amazon, one of the so-called GAFAM platforms (Google, Amazon, Facebook, Apple, Microsoft). This makes Twitch an integral part of the *platform ecosystem,* a term used to refer to the hierarchical nature of platform conglomerates and the way they become infused in many facets of life (Van Dijck, Poell, and De Waal 2018, 4, 11–12). Previous scholarship in platform studies has primarily been critical of Twitch's functioning as an extension of Amazon, in which it provides yet another entry point (for data and users) to the infrastructural core of larger conglomerates. Most scholars focused on what content is and how it is distributed through data, users, software, interfaces, and devices, through a study of (shifting) power relations between Twitch and their users (Ask, Spilker, and Hansen 2019; N. T. Taylor 2016). Outside the focus on Twitch but still applicable, there is a general focus on the ways UGC platforms exert control over its uses through data and algorithms (Srnicek 2017) or through digital "patronage" systems (Burgess and Green 2018). On the level of production, there is an agreement that UGC, in general, has become increasingly professionalized and commercialized through platforms such as Twitch (Spilker and Colbjørnsen 2020).

In a move towards livestreamed games as meaningful cultural practices to games' cultural form, it is argued that – on a macro scale – Twitch has reshaped how "digital content is created, distributed, accessed and integrated with other industries" (Johnson and Woodcock 2019b, 684), for example through a study of this transformation through the perspective of the spectator (Smith, Obrist, and Wright 2013). Johnson and Woodcock (2019b) explore this argument by approaching streaming as a form of reviewing, and as a boost to game visibility and lifespan, as a method for expanding the reach of game programming knowledge and expertise. Twitch is defined as an ecosystem in which games compete for the attention of *users* (rather than merely players), highlighting both the ephemerality of games and its reach beyond the game itself (Deng et al. 2016). Similarly, David Nieborg (2015), argued that the rules of play itself are now increasingly guided by the platformized business models of games. In all of these examples, there is a situation of codependency between Twitch, its users, and the game industry.

Another body of research focuses on the production of UGC. This debate is led by theorists who argued that UGC points to a complex distribution of user agency in which users simultaneously take up the roles of the traditionally "passive" consumers and the "active" producers of content (Van Dijck 2009). "Content," in this respect, refers not to a unified concept but rather to a stratified spectrum in which different types of content can acquire different relations to social status (Blank 2013). The stratification of content, for Blank, means that there are now various forms of content creation, anything from "skilled" content to social or political content (598). For content creation of Twitch, these ideas bring forward the central role of the Twitch streamer in a network of distributed production and often engages with a critical notion of affective labor, immaterial labor, and the neoliberal subjectivity as different forms and manifestations of content creation (Woodcock and Johnson 2019; Johnson and Woodcock 2019a; Guarriello 2019). Such studies show that content creators on Twitch are highly skilled workers who carefully brand themselves, their communities, and attune their content to the audience's expectations. I intend to dispute Sjöblom et al.'s (2017) claim that, regarding content creation on Twitch, "the medium is the message," meaning that the *type* of engagement (e.g., competitive versus educational content) matters more than the game (or genre) that is being played (161). Their study puts forward a perspective on the democratization of UGC in which the agency of content creators is given a central role, whereas I argue that it is better to move *beyond* content creation as an isolated practice and instead consider how content creation intersects with the overall streaming ecosystem of Twitch, games, and audiences. Although it is valuable to acknowledge that particular archetypes of content creation may assert dominance over the games that are being played, I intend to critically investigate this relation and argue that such a relationship can be of significant meaning towards the creation of games as a cultural form.

My contribution to the platform studies perspective on Twitch is to zoom in on the role of content creators within the state of codependency between platform, users, and other parties, elsewhere defined as a *multisided platform configuration* (Nieborg and Poell 2018). Previous research on Twitch as a platform has already highlighted the complex distribution of power and the precarious position of users and UGC within this situation. This thesis will zoom in on those conditions by analyzing the relation between forms of centralized power and UGC. Concretely, Nieborg and Poell's (2018) idea of cultural production, which I parallel with 'content creation,' as a cultural commodity will provide a central framework in this study. Although not the main focus of my argument, I embrace their idea to highlight how cultural production can become

an actual *commodity* within the platformization of products and services (4276). "Platformization" refers to the transformation of societal, infrastructural, and cultural sectors as a result of the infusion of digital platforms (Van Dijck, Poell, and De Waal 2018, 19; Nieborg and Poell 2018, 4276). It provides a much-needed criticality towards the platform's dependency on content creators that comes with the infusion of digital platforms in the game industry. Simultaneously, Nieborg and Poell's perspective also concretizes the livestreams as a valuable commodity. The value of this commodity goes beyond economic value and considers forms of gaming capital and reputation about games. Ultimately, the goal is to study the relationship between content creators, platforms, and games from a critical perspective that is still yet to be adopted in relation to Twitch.

Methodologies and scope

Many works of research on content creation on Twitch are conducted using either quantitative methods – such as Sjöblom et al. (2019; 2017) – or ethnographical methodologies, most extensively displayed by T. L. Taylor's *Watch Me Play* (2018), who, as mentioned before, researched the central theme of how private play is turned into public entertainment. In other discussions, the focus is on the sociality of playing and of watching play (Consalvo 2017; Spilker, Ask, and Hansen 2020). Consalvo observed a variety of player attitudes depending on streamers, games, and audience, already highlighting the contingent nature if of such streamer–game relationships. The audience plays a fundamental part in this relationship, as content creators develop a feel for their community in which they brand themselves according to audience expectation (Bingham 2020). Sjöblom et al. (2017) valuably characterized various archetypes of content creation, thus highlighting the indeterminacy of videogames as livestreaming tools, and discerned various affordances of livestreams (2019). What is missing in the literature on content creation on Twitch, I argue, is a study of the various forms of content creation itself as it reaches *beyond* Twitch as a platform. Instead of studying content creation as something that is isolated on Twitch itself, as represented by most quantitative studies, I define content creation as a broader cultural phenomenon with strong implications on games as a cultural form and the overall streaming ecosystem. Moreover, this moves beyond a focus on streamers as people and as a culture, as represented in ethnographical studies, by instead assessing the content they produce. Whereas the various streamer–audience relationships have been carefully studied in previous studies, streamer–game relationships have been given less attention. Contrary to Sjöblom et al. (2017), who argue that it is solely the content that matters,

not the games they play, some scholars have highlighted the complex entanglements between Twitch and games on a macro-scale. Deng et al. (2016), for example, observed how the lifespan of games is visible on Twitch on a quantitative level. According to them, how games are represented in livestreams does matter.

On a qualitative level and smaller scales, these streamer–game relationships have been much less extensively researched. Gandolfi (2016) provides a good example of such a study. His article investigates the relation between Twitch and digital games through specific cultural processes such as production, consumption, and identity, questioning the relation between Twitch audiences and the habits and expressions of gaming culture. He concluded, for example, that there is a connection between "gamer" identity and Twitch audiences (69). Although Gandolfi paints a relevant image of the interrelated cultural processes between games and Twitch, his analysis focuses primarily on games as a *culture,* as empirically represented in Twitch audiences and streams, whereas I aim to dig deeper into games as a *cultural form*, thereby accounting for the technology and its use. I will address this by providing an extensive investigation of various streamer–game relationships on Twitch. In terms of methodology, it will move beyond an ethnographical study of streamers as workers and professionals (Johnson and Woodcock 2019b; T. L. Taylor 2018). Instead, I will perform a qualitative content analysis of Twitch livestreams. I study content in its networked and contingent form, as it is actualized in the relation between content creators (streamers), games, audiences, and platforms. In other words, the focus of this thesis is on the relation between streamers and games as it is actualized in livestreams. Games will be approached as platforms for user-interaction rather than as fixed entities as reflected in many quantitative studies. It means that different streams can provide different kinds of representation of and interactions with games. My approach is grounded in the assumption that 'content' does not exist in a vacuum, but that it is situated within a larger ecosystem of platforms, games, and users. My focus is on the entangled ways in which content creation – as both an individual endeavor and a commodified practice – engages with games as products, as cultural artifacts, and as cultural practices.

Game studies beyond the game-as-text

A growing body of game research adopts player-centric approaches to the study of videogames. Instead of considering the game's design and the player strictly separate entities, Aarseth's (2007) influential article on the *implied player* proposed some middle ground in game studies. He defined the implied player as a player incentivized by game design utilizing instructions for

play, but not necessary as a determining factor. He argued that there is still a degree of agency, a space of possibilities for free play, transgressive play, or other forms of play that run counter to design. A similar approach has been put forward by Boluk and LeMieux (2017) in their book on metagames which explores the alternate practices of play beyond the game as an artifact. One particularly interesting example displaying the potential of studying the players is in Mortensen and Jørgensen's (2020) book, *The Paradox of Transgression in Games.* Employing a focus on transgressive play, they discover the various degrees of transgression we can identify in play. The common ground for all these three works is that they discuss games for how they are actualized, not necessarily the way they were designed. In other words, they study play, rather than games. As Mortensen and Jørgensen (2020) state in their formulation of the player-response approach: "games cannot be actualized without the player's interaction, and for this reason […] we must study players in order to study games" (88). In line with my intention to study games as a cultural form, I therefore adopt a player-centric approach to games, to study the way they are put in practice.

Mortensen and Jørgensen (2020) developed a player-response approach, a game-oriented adaptation of the reader-response theory (Iser 1978), substituting texts and readers with games and players. They applied this approach using a method where they conducted interviews with a group of players based on their playing experience with transgressive games. In the context of livestreamed play, however, the act of play is already very public, which means that livestreams provide some evidence on the playthrough. Therefore, I will contribute to this approach by using Twitch as a site to study player-response in which I transcribe game livestreams to collect data that has a similar evaluative value as interviews. Concretely, this provides a way of analyzing "player-response" in game livestreams on a qualitative level. Whereas Mortensen and Jørgensen argued that we have to study players to study games, I want to expand this argument by proposing that we have to study game livestreams in order to study games as a cultural form.

Redefining streamability

The term *streamability*, which will be a central concept for Chapter 2, has been used in the context of transmedia and convergence culture. Simone Murray (2005) coined the term *streamability* in her study of corporate media, which signified the disembodied, unpredictable, multi-directional purpose of transmedia – in Murray's case employed by large conglomerates – to create multiple (audience generated) streams of revenue "from relatively fixed production

costs" (Murray 2005, 317). In other words, streamability is seen as the means through which one text can be distributed across multiple levels of content and revenue streams. Similarly, Clarke (2012) described streamability as "the ability to move creative products from one platform to another through either repurposing to different recording media or translating intellectual property into new conceptual and/or material object" (28). Oftentimes, it is a *centralized* phenomenon in which media conglomerates control multiple streams of content. It can also signify the more practical capacity of streaming a videogame (see Lottridge et al. 2017), which, in itself, exemplifies the transmedia purpose of streamability as extending a 'text' through several media.

My contribution to the term *streamability* will be to study this phenomenon in the context of videogames and livestreaming. Previous literature on the concept confirms what we already knew about Twitch as well; that the distribution of livestreamed content is part of a larger converging media ecology in which power is situated in the hands of the platform. Nevertheless, the streamability of videogames entails much more than either the political economy or its practical uses. Instead, it aids the establishment of games as a cultural form and adds cultural meaning and significance to videogames. Therefore, this thesis will study *streamability* as a contributing factor to games as a cultural form. Not only does it give insight into the technical properties of streamability – i.e., being able to create multiple streams of content from one source – I also argue that streamability is indicative of the technology's social use and therefore games as a cultural form.

Livestreams as 'content'

Livestreams, as 'content,' is different from in-game content that players buy or acquire, such as battle passes, which function as subscriptions to a game's release schedule for cosmetic content like skins, outfits, and 'emotes,' which are unique moves or expressions for in-game characters (Figure 1). In those examples, players can go to a virtual marketplace and use real-world currency to buy in-game content or exchange it for a virtual game currency. 'Content' in content creation relates to the practice of making video content, such as gameplay, which has been researched as something that aims to be "worthy" of sharing on video streaming platforms such as Twitch and YouTube (Postigo 2016, 342). The value of this type of content emerges in relation to the platform's infrastructure. For YouTube, this means that "worthy" content involves talent (in gameplay) and the adequate use of the sociotechnical features of a platform (Ibid.). On Twitch, "worthy" content has more to do with the ability to establish a form of

communication between the streamer-as-player and the audience, mediated through the platform (Scully-Blaker et al. 2017, 2029). The game and the act of gameplay thus takes up a central position in determining the content that is worthy of being streamed on Twitch. Due to the centrality of gameplay in deeming what type of streaming content is worthy, or *streamable*, I pose that cultural production in and around games plays a fundamental role in the exchange of cultural meaning and knowledge of games. This contributes to my goal of the thesis to investigate how game livestreaming affects not only the relationship between player and game but crucially also games as a cultural form. What we deem "worthy" or *streamable* content and gameplay are therefore crucial to developing an understanding of games as a cultural form.

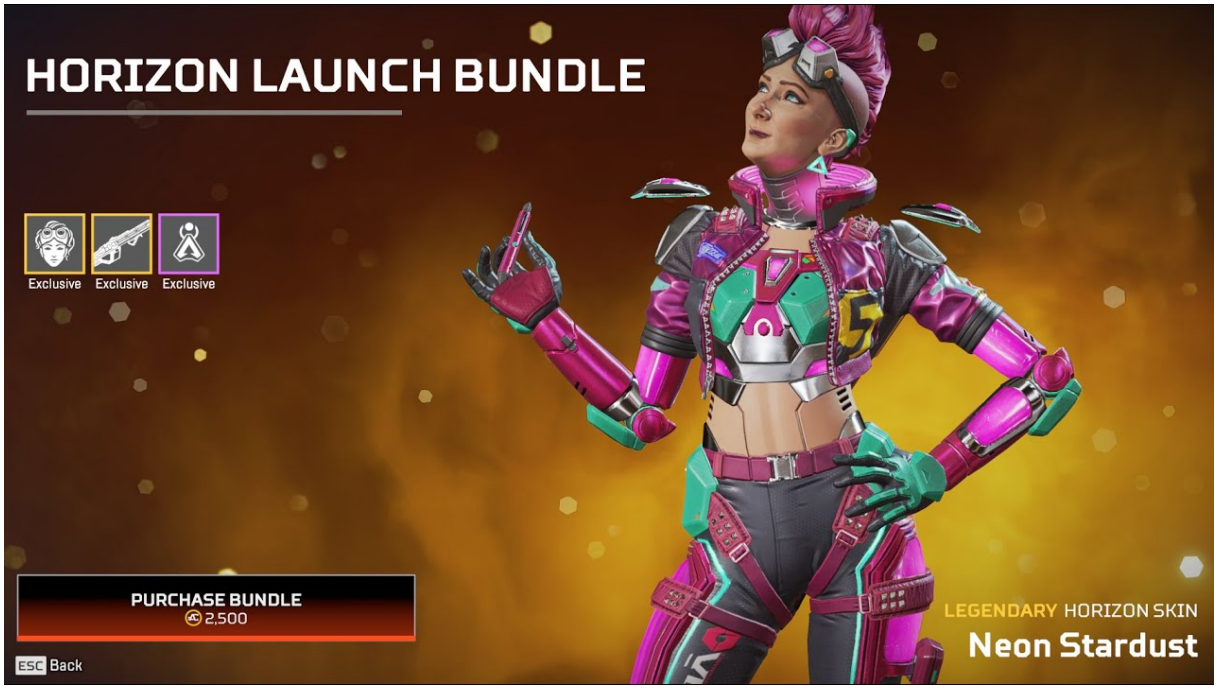

Figure 1 A collection of cosmetic content for sale as a bundle in Apex Legends (Respawn Entertainment 2019). https://www.youtube.com/watch?v=Wgub2PvgHiE.

To illustrate the significance of the cultural production of livestreaming content, I take up the notion of *gaming capital.* Consalvo's (2007) rewriting of Pierre Bourdieu's (1986) cultural capital theory signifies a dynamic "currency" that emerges as the result of gameplay practices. Doing so, I consider games as part of larger media ecologies in which I focus on the development of communities of practice and the "paratexts" – originally defined by Genette (1997) – surrounding games. This idea considers games part of larger media ecologies, focusing on the development of communities of practice and the paratexts surrounding games (Consalvo 2007). Theories of gaming capital and paratexts will be explored further in Chapter 1, in which I will study the way Twitch streams, as peripheral representations of videogame players, adds value to games as a cultural form. In that sense, livestreaming content is not only *streamable*

as an isolated practice, i.e., worthy of streaming, but has meaningful consequences on the overall meaning of games and games as a cultural form. A Twitch game livestream thus has the capacity to become a paratext to a game if it is deemed worthy of streaming. The focus with this is on the ways streamers play with the perception of what is streamable, both in the act of gameplay and in the overall livestreaming metagame of becoming a successful ('worthy') content creator.

A player-centric approach to livestreams (Chapter 1)

In Chapter 1, I will delve deeper into the way streamers-as-players express themselves through content creation, which has the potential to function as paratexts to games as a cultural form. By studying streams (content) *as* paratexts, i.e., as significant contributions to our cultural understanding of games as a cultural form, I shift the attention towards an ontology of games that delves deeper into the way content acquires value as a paratexts. I will do so by scrutinizing content creators, first and foremost, as *players.* With this, I address the gap between a game's formal design – the text – and its actual use. Therefore, the first goal of this thesis is to zoom in on the significance of *play*, particularly the widespread circulation of livestreamed play. I will address the streamer as a player, concerning games-as-texts, but also in relation to the overall platform ecosystem and the gaming industry. Practically, the question remains simply what kind of *player* (in the generic sense) livestreaming is for the gaming industry. As established earlier, the multisided market structure uses digital platforms as central mechanisms to commodify content and diversify distribution strategies, giving a central role to the cultural producers in the process (Nieborg and Poell 2018). Moving beyond this platform studies approach, I will argue that this reconfiguration has not only transformed the political economy of the game industry but more importantly, also the game's cultural form. What T. L. Taylor (2018) called "the transformation of private play into public entertainment" (6) on Twitch does not happen only on the level of individual content creators but transforms the game's overall cultural form as something public.

In my adaption of a player-centric approach to videogames, I attempt to locate how games-as-texts are actualized and transformed in livestreams. By studying play as it is represented in livestreams, this thesis will address how the meaning of games emerges in play. This chapter presents a player-centric game ontology by studying how players play games, play *with* games, against games, bend the rules or otherwise transform games into tools for playing. This approach follows the core idea of the reader-response theory (Iser 1978) in which the role

of the author is downplayed, and the interpretation of the reader/player is elevated. Concretely, this approach focuses on the game-as-text, the player's interpretation of that text, and the sociocultural context that informs this interaction. The first step will be to define who the players are and how they play. I will do so by taking up the notion of secondary play (Newman 2002) and tandem play (Scully-Blaker et al. 2017; Consalvo 2017), to consider how players other than the traditional controlling player can be of significance to the act of gameplay. In the case of Twitch, not only the streamers but also the audiences can be approached as players, who, without actually controlling the game, play along with streamers as if they are playing themselves.

In Chapter 1, I will therefore take up consideration of Twitch as a site to study player-response. Livestreamed play will be approached as an empirical representation of actual players. This will form an addition to the relatively new considerations of the player-response approach, by providing both a new site to study players and a new method of assessing play practices. Doing so, I aim to closely examine the relationship between game-as-text and actual play practices, as seen on Twitch. I will zoom in on the different identity performances of streamers as players and how this contributes to the perception of games. A concrete focus of this will be on the relationship between streamers and their audiences as *players* rather than merely as seemingly passive audiences. This will be by expanding our understanding of gameplay beyond the traditional sense of a singular controlling player and by considering the performative dimensions of how players and audiences play in tandem (Scully-Blaker et al. 2017). Ultimately, this will develop a deeper understanding of games and game livestreaming as a cultural form.

Streamability of digital games (Chapter 2)

Chapter 2 will continue where Chapter 1 left off, namely by studying what characterizes games and game livestreaming as a cultural form. By zooming in on the specific exchange between livestreaming, games, and players, I will seek to define what it is that makes a game *streamable*. I will zoom in on the specific exchange between videogames and content creators on Twitch. In line with the work on gaming capital, *streamability* goes beyond the game as an object and considers the practices that emerge in and around gameplay. I partly subscribe to earlier literature on the term, particularly the characteristic of *streamability* as a transmedia strategy regulating multiple streams of content from one source (Clarke 2012; Murray 2005), in this case, the platform. I will expand on this idea by delving into the cultural properties of this

phenomenon, in particular the role of content creators in how they perceive streamable content and how it shapes games as a cultural form. This will build on the work of spreadable media (Jenkins, Ford, and Green 2013), referring to increasingly pervasive forms of media circulation and the potential for audiences to share content themselves. Incorporating this notion of spreadability concretizes the role of content creators as distributors of streamable content.

Instead of defining streamability as a phenomenon in which content is distributed centrally, I will scrutinize the role of (streamer-)players in the streamability of videogames by using the notion of spreadable media. As a result, I will investigate the dispersed practices of streamability, and the various ways streamers make content with games. Furthermore, this chapter explores how games afford streaming, in technical capacity by offering so-called "streamer modes," and a cultural one, by giving content creators a distinct role as opinion leaders in games. Moreover, I will analyze the creative work that goes into defining what is streamable content, for example by focusing on how streamers try to find one's niche in specific games and how they engage communities of players. Finally, I will assess how games, as a cultural form, shape livestreaming and how livestreaming, in turn, shapes game design.

Chapter 1: A player response approach to Twitch streams

This first chapter of this thesis will delve deeper into the relationship between streamers and games by studying game livestreams as a form of player-response. What I study as 'player-response' also entails how audiences can be considered players and how 'response' extends beyond the livestream as an isolated practice. Using literature on gaming capital and paratexts, I will explore the relevance of Twitch livestreams to games as a cultural form. Furthermore, the methodological application of the player-response approach will show the crucial intersections between games and the different user-participants as players.

1.1 Theoretical framework

To address the meaning of games *beyond* the game as an isolated artifact, I will first reflect on the workings of gaming capital as defined by Consalvo (2007), with further inspiration derived from Walsh and Apperley (2009; 2008), Mäyrä (2010), and Sotaama (2010). Gaming capital signifies the currency that is generated and exchanged through actual play and thus provides a way to concretize the relationship between streamers and games. The purpose of this is to characterize meaningful play as something that extends beyond the game-as-text into the peripheral industries alongside digital games. Consequently, Twitch game livestreams will be approached as paratexts to digital games. With this, the idea is that the mundane act of play and watching someone play can facilitate the exchange of knowledge in and around games. Playing is then never private but always a shared experience, in which I echo Bateman's (2017) argument that no one player plays alone and that play is "conditioned by prior experiences of play" (6). I propose a player-centric ontology to digital games in which the meaning of games comes into being from actualization, the act of play. The player-response approach (Mortensen and Jørgensen 2020) provides a methodological basis to study actual players as meaningful interpreters of games-as-texts. In this, I study the relation between streamers and games utilizing an analysis of player-response. That is, the relationship between the game-as-text, the interpretative act of play, and the platformized context of this interpretation.

1.1.1 Gaming capital

Gaming capital sheds light on how knowledge and recognition are accumulated and shared through play practices. Gaming capital can create "systems of distinction," on the level of the

individual and the collective (Walsh and Apperley 2009). Consalvo presents gaming capital as a central element to serious gameplay:

> I believe that the concept of gaming capital provides a key way to understand how individuals interact with games, information about games and the game industry, and other game players. The term is useful because it suggests a currency that is by necessity dynamic - changing over time, and across types of players or games. (Consalvo 2007, 4.)

The "currency" Consalvo talks about stands out in this quote, which signifies how gaming capital is exchanged. It is used to delineate identities within game culture. Gaming capital refers to a currency that grants one a specific status in gaming culture based on the exchange of knowledge and recognition. Consalvo explains that "being a member of game culture is about more than playing games or playing them well. It's being knowledgeable about game releases and secrets, and passing that information on to others" (18). More so than the exchange of knowledge, gaming capital is about setting the tone for the right way to do things in gaming culture. By becoming a system of exchange – a currency – gaming capital creates a "reputation system" (Niederer and van Dijck 2010) and potentially raises questions about the proper and improper ways to play games and being a member of game culture (Ibid., 177). Gaming capital can offer players the opportunity to take ownership of the game space, sometimes elevating and improving their own experience or that of others. This can be done by showing off signs of capital, such as in-game cosmetics, for example, an exclusive skin or outfit. An example is when in-game content and cosmetics are notoriously rare or expensive, such as items that are only obtainable via loot boxes. Moreover, gaming capital can create a cultural code about a game and a game's community which can be configurative of the cultural understanding of how a game is supposed to be played or how players are supposed to behave.

To illustrate, take the player-characterization of "griefers" – i.e., people who harass other players to spoil their enjoyment. In *GTA V,* griefing is associated with the "Oppressor Mk2," a vehicle that is particularly suited for and frequently used in griefing. Platforms like Reddit become instrumental in sharing the knowledge and vocabulary for games, displayed by the frequent occurrence of terms like "Oppressor Mk2 griefer" in comments, memes, and videos of the r/gtaonline subreddit (see u/Karamel43 2020). It illustrates the different ways players interrogate their relation to the game and to other players and how this knowledge is exchanged. Gaming capital illustrates players' capacity to configure their relation to games, thus also

attuning to the specificity of a game in that process. A seemingly small element to the game – such as a mechanic, item, or in this case a vehicle – acquires significant cultural meaning through gaming capital. Similarly, many games feature a "ranked" game-mode which awards seasonal ranks to players based on their performance. For those games, an in-game rank quickly translates to a particular cultural status, reputation, and commonly associated behavior. Players who are bad, inexperienced, or new to a game are often called "bronzes" as indicators of their status, despite not necessarily being a "bronze" player in terms of in-game rank. Crucially, gaming capital is about more than just playing games or even playing well, but it is about *sharing* that particular knowledge with others (Consalvo 2007, 18; emphasis added). I will illustrate in this chapter that Twitch takes up a crucial role as mediator of this exchange of gaming capital, similar to the example of *GTA V* and Reddit.

I will focus on the ways Twitch facilitates the exchange of gaming capital. The platform frequently rewards viewers additional cosmetic content for watching streams of particular games via so-called "Drops," which are automated reward systems for viewers of Twitch streams, often giving away some form of in-game content of the games that are streamed. Viewers can then show off these cosmetics in-game as a reward for their dedication as members of a game's community. To illustrate, the game *Tom Clancy's Rainbow Six Siege* (Ubisoft Montreal 2015; henceforth *Rainbow Six Siege*) awards viewers of an esports tournament broadcasted on Twitch called "the Six Invitational" an in-game "charm" – a kind virtual medal that can be displayed during games. Viewers are awarded these charms depending on when and how much they watched (Figure 2). By distinguishing between different "charms" for different levels of engagement, both Twitch and *Rainbow Six Siege* assign a form of gaming capital to spectatorship. Moreover, *Rainbow Six Siege* even goes so far as to award content creators for their dedication to the game by making in-game streamer charms (Ubisoft 2021). Content creators will only be awarded a charm if they meet specific requirements. These requirements measure their dedication to the game, based on their viewership, how many hours they streamed *Rainbow Six Siege*, and their status within the game's community. It illustrates how small systems such as these transform reputation or status into a form of exchangeable currency. Owning the most exclusive items in-game can give a player a higher status within a community, thus also when playing the game for themselves. This example hints at the role played by Twitch as a platform to facilitate the exchange of gaming capital, both for players and content creators.

Figure 2 In-game charms awarded to spectators on Twitch. https://twitter.com/Rainbow6Game/status/1225887042242011137?s=20.

1.1.2 Paratexts

Mia Consalvo (2007) takes the idea of the paratext (originally by Genette 1997) to accompany the exploration of gaming capital. This is a concept that signifies texts are separate from both nonetheless connected to a main "originary" text (9). Consequently, Consalvo argues that, with games, the peripheral industries surrounding games-as-texts contribute to the understanding of games in unique ways (Ibid.). Consalvo takes up Genette's idea that any paratext helps shape the reader's understanding of the main text, and, therefore, these paratexts contribute to the exchange gaming capital. Examples of paratexts Consalvo explores are game add-ons, so-called strategy guides, and game magazines. Each of these texts is not part of the game-as-text but nevertheless contributes to the overall gameplay experience and a game's cultural form. The meaning these paratexts acquire in relation to the main text is significant and they can be "configurative performances of play," meaning that they *perform* the function of recording playstyles, but also share knowledge or even regulate the way games are played (Newman 2008, 89). Whether as a promotional tool or as a guide to proper ways of playing a game, it is therefore argued that these paratexts do contribute to the cultural meaning of videogames.

The crucial overarching idea with the concepts of gaming capital and paratexts is that gameplay doesn't exist in a vacuum, but rather that "players and game developers exist in a push-pull of interdependence, constantly exerting pressure on one another to gain control of the experience of gameplay as well as how to define that experience" (Consalvo 2007, 176). In this

case, approaching Twitch as a set of sites to study these exchanges of gaming capital through paratexts allows concretizing the relation between games and players. In relation to Twitch, the ideas of paratexts and gaming capital point to the importance of studying the sociocultural surroundings of media practices, as is argued by Gandolfi (2016). He studied the relation between Twitch and digital games by calling this a "circuit of culture," a term introduced in Du Gay et al.'s (1997) study on the Sony Walkman. This concept addresses how five cultural processes – representation, identity, production, consumption, and regulation – together make up a circuit of culture through their reciprocal dynamics (Du Gay et al. 1997, 3). These processes, according to Gandolfi, are indicators of the *reciprocal interaction* between Twitch and digital games (65). According to him, matters of individual and social identities, to name one example, intersect through the game-as-texts and the way individuals behave on Twitch. In other words, just because Twitch and games are separate media entities does not mean that they exist in isolation. Seen as a circuit of culture, there is an interaction between Twitch streams as paratexts and digital games; they are connected and intertwined, or as Gandolfi put it, "circuits of culture are *archipelagos* rather than *islands*: they influence and are influenced by each other" (65–66; emphasis added). What this means is that – through the processes mentioned by Du Gay et al., media objects can exist peripheral to each other, but still be part of the same whole. For Gandolfi, these processes tie together streamer cultures and gamer cultures.

I will take Gandolfi's argument a step further, using the idea of the paratext, to address how this reciprocity in a circuit of culture affects games as a cultural form. The "archipelago" of Twitch and digital games paints a picture of how certain practices between two "islands" can contribute to one whole (Gandolfi 2016, 66). By positioning Twitch as a peripheral industry to digital games, together shaping the "archipelago" of livestreamed gameplay, we can begin to understand how to define games as a cultural form by addressing digital games not as isolated media but through their push and pull relationship with paratextual industries such as Twitch.

1.1.3 Towards a player-centric game ontology

I switch the attention to the implications of gaming capital, paratexts, and the overall relation between livestreaming and digital games for the player. I propose a player-centric ontology of games. The ever-lasting question "What is a videogame" has kept game scholars occupied for a long time. Ian Bogost (2009) poses that that is primarily an ontological question and that there is more than one "game ontology." Espen Aarseth (2013), for example, distinguishes between the formal ontology – the game as an object – and an existential ontology that questions what

games are and what kind of existence games have (484). Furthermore, he makes a separation between talking about games as objects and games as processes (Ibid.). With the processual implication of games, the focus is on the "ephemeral quality of gameplay," meaning the actualization through play (Mateas and Stern 2006). A player-centric ontology, then, focuses on *play* and highlights the contingent and processual nature of games. Overall, the focus on gameplay and the contingency of games elevates the role of the player.

This approach attempts to move beyond normative approaches to videogames in which games are thought to possess clear autonomy over the player, for example in a ludological perspective expressed by Salen and Zimmerman (2004), which addresses the rules of play as the main expressive tool for game design. Instead, a player-centric ontology of games accounts for how players can play with a game, bend the rules, or even play against games. Moreover, it takes into account the sociocultural context of gameplay and addresses how that might affect the meaning-making of games. Rather than addressing game's cultural form as a stable entity, the idea of *metagaming*, for example, focuses on the cultural practices in and around videogames: "metagames transform videogames from a mass medium and cultural commodity into instruments, tools, and toys for playing" (Boluk and LeMieux 2017, 4). This type of play incorporates forms of play other than playing by the designed rules of play. As such, practices of spectating, cheating, and negotiating play can all be thought of as metagames; games about games; games that engage with the contemporary conditions of play. Due to the centrality of player-interaction to games, Mortensen and Jørgensen (2020) argue that "games are in this manner moving targets for analysis" (85). For this reason, I take up their advice to study players to study games, as represented in their player-response approach.

The player-response approach (Mortensen and Jørgensen 2020) follows the reader-response theory (Iser 1978) in the idea that media texts are realized through the interpretation of and interaction with the reader. This perspective downplays the role of the author and the text, it treats readers as active participants instead of passive consumers, and it presents literature as an experience rather than as an object. According to Iser, the reader-response theory focuses on the "interaction between the textual signals and the reader's acts of comprehension" (9). Crucially, this interaction between text and readers is informed by the reader's personal experience and sociocultural context. In a similar tradition, Mortensen and Jørgensen (2020) also downplay the role of the game design and the game as text and propose to study the empirical representation of actual players. For them, playing experiences are about more than just the game-as-text, and are determined by playstyle, game literacy (skill), and personal

sensibilities (85). Therefore, the player-response approach accounts for the relation between the game-as-text, the player's act of interpretation (play), and the context that informs this act.

1.1.4 Who is the "empirical player"?

To transform the reader-response theory into a player-response theory, the authors reflect on the unique properties of the videogame, in which they state that games are designed as systems for interaction. While Mortensen and Jørgensen (2020) acknowledge the procedural nature of games (see Bogost 2006; 2008), meaning that they consist of processes for interaction, which "stresses the important idea that there is an authorial voice behind design and that a game's mechanics and procedures may very well be designed with the intention of promoting a particular argument," they also point out that "how the argument is received by the individual empirical player is entirely subjective" (91). It underlines that players have the agency to play *with* a game, which means that the game is inherently unpredictable. Therefore, they argue that we have to move beyond the player as something that can be designed and instead look at real empirical players. In this section, I will explore the notion of the empirical player and address how I see Twitch as a venue to study those players.

The *implied* player, theorized by Espen Aarseth (2007), describes the idea of an envisioned and an incentivized player with a crucial difference between design and practice. It is the imagined player that the game is designed for *before* it is actualized by the player. In other words, just because a mechanic exists in a game does not mean that the player will use it that way. Acts of transgressive play, subversive play, or metagaming highlight that real players (as opposed to implied players) often find ways of using a game's design in unique ways. Therefore, the notion of the implied player is seen as a "boundary imposed on the player-subject by the game, a limitation to the playing person's freedom of movement and choice" (Ibid., 132). Aarseth thus states that there is a difference between the implied player and the real, historical, and actualized player.

Mortensen and Jørgensen (2020), for the most part, follow Aarseth's idea of the implied player and transgressive play. They do make a slight adjustment; they understand the implied player not as singular but as *implied players*, plural, as *representations* of actual players (95). They think of these implied players as *personas* of game design. The difference is that the implied player, singular, creates a concept of the meaning of the text itself, while implied players and personas stress the idea that games are actualized through *play,* not design. The implied player is seen as a product of the text, while personas are products of actual players.

Consequently, their perspective centers on the agency of players within designed systems of play:

> Implied players are players to whom the game has been tailored, a tailoring that centers on the design of affordances and rule systems that create an activity space inside which the player can execute playful agency through interacting with game mechanics. (Mortensen and Jørgensen 2020, 95)

In their formulation of the player-response approach, they thus aim to look at the practices in which players display their autonomy in relation to the instructions imposed by the game.

This tension between design and actualized play is particularly interesting when looking at such empirical representations of players. Take, for example, *Rocket League*'s (Psyonix 2015) disputed 'demolition' mechanic. In this vehicular soccer game, players use their cars to touch the ball and score goals. The demolition mechanic affords players to ram other players in order to momentarily destroy the other's car on impact (Figure 3). While the demolition itself does not score points for a player, it can be employed for winning strategies. Nevertheless, a portion of the player-base feels that just because the mechanic exists in the game, it does not mean that players are expected to use it religiously. In a video by the *Rocket League* content creator "SunlessKhan" (SunlessKhan 2020) the issue is clearly illustrated as a tension between design and practice. A game-centric approach to *Rocket League* would entail something like the idea that the mechanic exists and therefore invites players to use it to gain an advantage, whereas, in reality, the mechanic is seen as an expression of toxicity, trolling, or even rage. The example illustrates why a game-centric idea of a singular implied player is not enough. Looking at the actual empirical representation of players just shows that how a game is *designed* does not necessarily tell anything about how it's *played*.

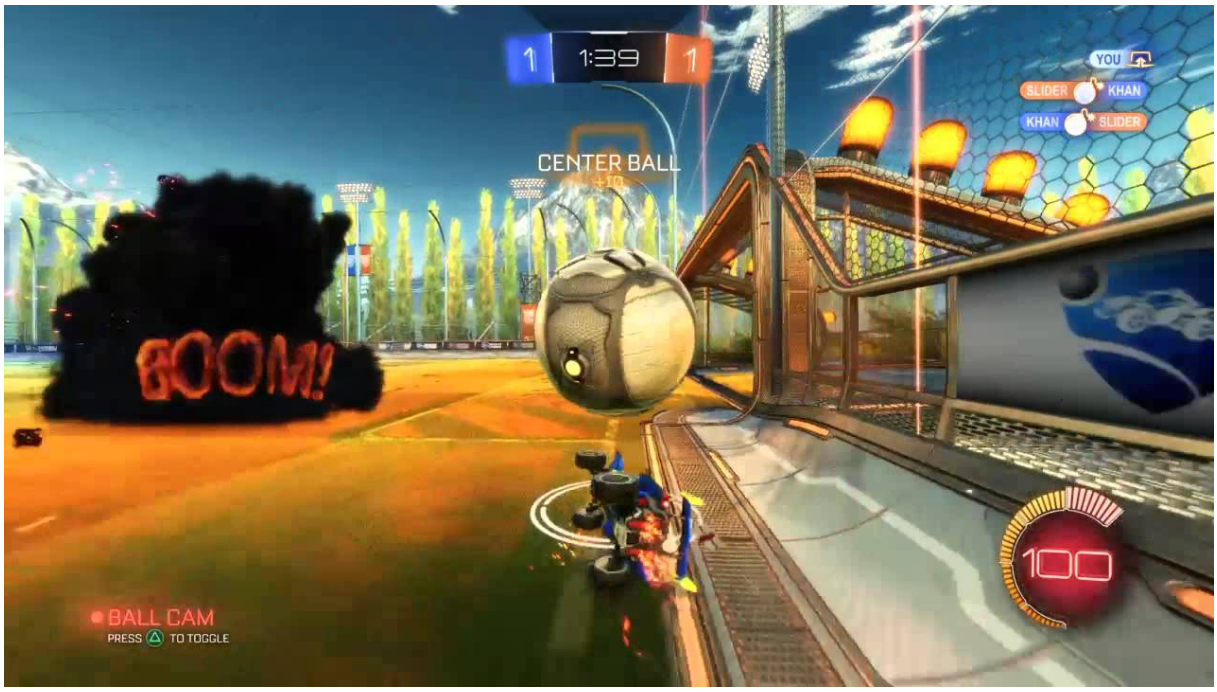

Figure 3 Image of Rocket League's demolition mechanic. Two players collide on the left of the screen causing a demolition while the player draws the ball to the center of the goal for an effective play. https://www.youtube.com/watch?v=gNIF2-pUml8&ab_channel=CJ.

Studying players, as argued earlier, requires an actual empirical representation of players. Doing so can give insight into the autonomy of players with games. Regarding the subject matter of this thesis – the relationship between Twitch and digital games – the streamer-players on the platform will serve as the empirical representation of players. To study games' cultural forms, we have to study the way it is played. The short example of *Rocket League's* demolition mechanic just shows that *just* the game-as-text is not enough and that we have to study the interpretive act of play. Considering the myriads of active players on Twitch, I deem this platform an interesting venue for studying the empirical representation of player-response.

1.1.5 Twitch livestreams as venues for player-response

To conduct such a player-response approach, one has to take into account the experiences and interpretations of the player. In this case, it has to take into account the specificities and significance of *livestreamed* play. As described earlier, an empirical analysis of games would have to account for how the game is played *after* its design. It does not reject the importance of a game's design, it merely embraces the idea that player experience is an interplay between the technical properties of the game, the player's interpretation, and, crucially, the context of this interplay. The context, in this respect, is that of the livestreaming platform. I argue that Twitch can be seen as a venue for metagaming, as it transcends the game as a text and instead considers

the game a tool for content creation. Streamers engage with games as equipment for content, just as they might see their home studios as equipment. It downplays the autonomy of the game, as not the game but the act of play is foregrounded in Twitch livestreams.

Streamers do not merely play but they *perform* their play, which is why they are a specific type of player; the streamer-player. It highlights what Booth (2015) calls the *performative* potential of media interpretation and informs the understanding and meaning-making process of the main text. In many ways, livestreaming can be seen as a form of metagaming in which streamer-players use games in various critical engagements as tools for making creative content. Twitch is particularly interesting in this respect. Twitch has "foregrounded the human element," which means that content on Twitch is more about the streamer-player than the gaming content itself, Anderson (2017) argues. Twitch's centrality of the subject does not downplay the importance of gaming content, it merely highlights the interactive player-centered nature of games, which is actualized by Twitch and their organization of content. It is all the more interesting to study Twitch streamers-as-players for this exact reason, to delve deeper into their relationship with games.

I follow Bateman's (2017) idea that player-interpretation contributes to the exchange of knowledge in and about games. He states that no player plays alone; each player is informed by and contributes to prior knowledge of games. Rather than merely addressing games as texts, this approach displays the idea that "we must be open to appreciating not only the way individual games are played, but the connectivity between the player practices of one game and those of the lineages it connects to" (Bateman 2017, 10). The paratextual contribution of player practices to the main text – a game – is thus that gameplay does not happen in isolation, but rather that play is "conditioned by prior experiences of play" (6). The "game" as such thus means both the practices of play in and around the game as well as the game as a designed artifact. This idea hints at the cultural relevance of game livestreams to games as a cultural form, as livestreams can create a continued representation of gameplay experiences. Following Bateman, I argue that audiences must also be addressed as players, in that they contribute to the creation of games as a cultural form. In the next section, I will address how audiences are addressed as players in Twitch game livestreams.

1.1.6 Tandem play and the relation between "primary" and "secondary" players

I argue that the player-response approach can be productively applied to address various interesting manifestations of relations between streamers and videogames as well as between

streamers and audiences. For example, when moving away from a preoccupation with play in the sense of players who mechanically operate the game, the controlling player, an analysis of Twitch streams sheds light on how audience members might also participate as 'players.'

In the context of Twitch streams, the player – in the traditional mechanical sense of control – is best characterized as a streamer-player. Playing on Twitch is different from playing privately in your living room because of Twitch's ability to attract external audiences. Previous literature has already elaborated on how the presence of audiences can affect the performance of gameplay itself (Bowman et al. 2013) and Anderson (2017) highlighted importance of studying those human elements to livestreamed gameplay. However, whereas Anderson posed that, on Twitch, "the games take a backseat to the relationship formed between streamers and viewers," (Ibid.) this chapter aims to explore how we can theorize a relationship formed between streamers and viewers as players *and* the game. One way of theorizing this relationship is through Newman's (2002) consideration of primary and secondary play, which can be used to elaborate on the ways audiences become involved in the act of gameplay itself. Another key concept is that of *tandem play* (Consalvo 2017; Scully-Blaker et al. 2017), which describes gameplay as the result of a *collaboration* between players and audiences.

Already in 2002, Newman posed that play, even with single-player games, isn't necessarily a solitary experience. He noted that games are often played by teams of players, in which the controlling primary player performed the act of gameplay, while a secondary non-controlling audience member played along by performing the tasks the controlling player didn't have time for. Fast-forward to now, we can see a doubled-down version of this type of player-relationship with Twitch offering a platform for broadcasting gameplay and drawing in external audiences. In essence, the primary and secondary players taking a seat on the same sofa in the same living room talked about by Newman are now mediated and multiplied through Twitch, brought together in one virtual game room: the stream. As such, Scully-Blaker et al. (2017) and Consalvo (2017) take Twitch as a site where players and audiences can play together. Their notion of *tandem play* is commonly understood as a way to concretize how spectators of single-player games can become involved in the act of gameplay itself. Tandem play, according to Scully-Blaker et al. (2017), "includes collaboration that affects gameplay" (2026). Their research considers the way in which Twitch might mediate forms of tandem play. Crucially, for them, the focus with tandem play is on single-player games. The reason for this remains somewhat unclear and is presented as self-evident, most likely because multiplayer games, as the name says, already provide a form of collective play. Although this previous scholarship

does not engage with multiplayer games, this chapter will study Twitch as a site where we can also see similar tandem play experiences between streamers and audiences with multiplayer games. With this, the focus is on the centrality of the Twitch stream as a mediator between different types of players. Multiplayer games such as *Rust* (Facepunch Studios 2018) have a relatively idiosyncratic gameplay experience similar to single-player games, with the core difference that it takes place in an open world with possible encounters with other players. In those cases, the difference between single-player and multiplayer games is neglectable and only actualized in particular instances of play. For this reason, also concerning the empirically grounded player-response approach (Mortensen and Jørgensen 2020), this chapter will take livestreams of multiplayer games to study the contingency of (multiplayer) gameplay.

By means of a study of multiplayer games in Twitch streams, this chapter will address how livestreamed play accounts for a specific type of player response, one that emerges from the individual's interpretative act of play. Simultaneously, the purpose of this is to study streamers and audiences as empirical representations of actual players, therefore building towards a streaming *persona* – referring to Mortensen and Jorgensen's (2020) idea to focus on the game's meaning as it emerges from play, rather than from the text. Tandem play can then be seen as a process of co-creating meaning, which reinforces that the meaning of games comes from the interpretative act of playing. In short, different playing practices generate different meanings, which is why I propose to zoom in on the distribution of player roles in game livestreams.

Tandem play features various gameplay strategies that describe the relationship between a player and its audience. With livestreamed play, play is not a solitary experience, but it is performed for an audience, live, and on the virtual stage of the livestream. According to Scully-Blaker et al. (2017), *playing for* an audience is understood as the performative dimension of play in which the streamer plays with the audience in mind, therefore playing differently, for example, to be more entertaining and cut down on the experience of downtime (2030). It is characterized by a "think-aloud," a technique described by T. L. Taylor (2018) where streamers do not just play the game, but share their thought processes, "typically accompanied with humor, frustration, and suspense" (75). Playing for an audience is thus not just playing the game but trying to verbalize play using narration and other performative expressions. Theory crafting, teaching, and learning are also presented as manifestations of tandem play (Ibid., 2034). *Playing along with,* another type of tandem play, is an even more interactive form in which audiences

are actively engaged with play itself, by giving instructions or somehow attempt to affect gameplay.

As such, there is more than one way in which an audience member can become involved in the gameplay without necessarily having control over the game itself. To illustrate, Newman (2002), makes a distinction between the controlling *primary* players and the non-controlling *secondary* players. Consequently, tandem play is a strategy that merges the non-controlling nature of *secondary* play with controlling *primary* play. It means that a primary player can partly sacrifice one's engagement with the game to tailor this to the needs of the secondary player. As Newman explains, whereas the primary player will be more interested in controlling play, secondary players can become invested in looking out for things that the primary player doesn't have time for. There is a crucial difference between Newman's approach and that of Scully-Blaker et al., namely that, although players might take up different roles, the concept of tandem play is less about the degree of control and focuses more on the act of co-creating the experience of play. As a result, 'control' turns out to be much less of a defining feature in cases of tandem play, as is highlighted in Twitch game livestreams.

Getting involved with the gameplay and the controlling player in livestreams does become different with size. It means that for secondary play to happen, there needs to be a way for primary and secondary players to communicate. Scully-Blaker et al. (2017) argue that the bigger the audiences in livestreamed play, the more difficult tandem play becomes, particularly for streamers to experience as such: "as audiences grow, 'playing along' becomes difficult for streamers" (2026). With regard to this conundrum, the stream is thought of as a *forum* for verbal interaction between streamer and audience. However, when the audience grows *too* big, players are simply playing for the masses. It is for this reason that I consider *communication* a crucial *affordance* of tandem play in livestreams, which is mediated through Twitch's streaming interfaces. Affordances define technologies or material artifacts for the way it is used (Bucher and Helmond 2018). Although I will not delve deeper into the study of affordances until Chapter 2, it is at this point where I make the initial observation that tandem play, through communication, is an affordance of Twitch livestreams. That is, in livestreams, tandem play emerges *through* communication and *as* communication, for example in how audience members can play along with someone's gameplay simply by empathizing with the other's viewpoint. This furthermore motivates the methodological choice of a qualitative content analysis of Twitch streams, to study this communication between primary and secondary

players in streams. In the next section, I will delve deeper into the methodological considerations of this approach.

1.2 Methodology

1.2.1 Studying player-response

The method for this chapter of the thesis will be a qualitative content analysis of Twitch streams. This analysis will investigate the "response" part of the player-response approach in which both streamers and viewers will be addressed as players. This idea is in line with Mortensen and Jørgensen's (2020) empirical focus on actual players. In this, the viewers participate in the actualization of play and therefore serve as secondary players. Instead of interviewing players about their playing experience – which is what Mortensen and Jørgensen did and referred to as the "empirical player" (90) – I will perform a qualitative content analysis of Twitch streams to collect data about player-response. The results of this type of player-response will be different from that of interviews. Rather than as reflections on personal experiences of gameplay, I will address these streams as indicators of games as a cultural form.

Contrary to gaming videos on for example YouTube, Twitch streams are live and thus relatively untouched representations of player-response. Furthermore, the public and collective nature of Twitch streams make for an interesting cultural representation of gameplay. This gameplay, I will explore, happens in the interaction between streamers as primary players and how they play with their audiences. Due to the performative (e.g., "think-aloud" technique) and public nature of livestreamed gameplay, Twitch makes for an interesting, easily accessible, and culturally relevant site to study player-response. Crucially, what counts as player-response on Twitch has a tremendous reach, as many of the streams reach hundreds or even thousands of viewers who each are affected by the gameplay in their own ways. With this, I refer to the capacity of Twitch streams to function as paratexts and vehicles for the exchange of gaming capital.

I will take up Anderson's (2017) phrasing of the *streamer-player* as a specific type of player. It is a qualification that highlights the simultaneous copresence of the roles of streamers and players, which inevitably has its effect on both the practice of streaming and playing. Players play differently when playing for an audience and therefore affect the actual gameplay as player-response (Scully-Blaker et al. 2017; Bowman et al. 2013). Streamers have to perform a branded self to be compelling to watch (see Woodcock and Johnson 2019). They perform

affective labor, which means that they have to attune their content to the wishes of the audience (Ibid., 815–6). How and what a streamer plays affects this performance, and they might even navigate between the roles of streamer and player accordingly. Due to the centrality of the streamer-player in streams, Twitch provides an infrastructure to study player-response. The interface and content of streams allow me to study both the game's form, the game's actualization through play, and the response streamer-players have to it. Twitch streams do account for a specific type of performative and public play, as opposed to the relatively standardized private playing experience used for the interviews in Mortensen and Jørgensen's study (2020). Nevertheless, this approach has the advantage of gaining insight into the *public* performance of play, which reaches more people than just the active player. This public nature allows for a consideration of these streams as paratexts to games, as they can facilitate the exchange of knowledge and reputation in and around games.

1.2.2 Qualitative content analysis of digital content

To study players in Twitch streams, I will adopt a method for studying the content of Twitch streams with a focus on the interplay between gameplay, the player's action, and interpretation, and the contextual elements that shape this interplay. The method, therefore, needs to address "content" beyond an unambiguous homogeneous stream of information, as is the case with traditional adaptations of the qualitative content analysis, for example in the analysis of television news (Fields 1989). Consequently, the method for this thesis will take note of contemporary forms of qualitative content analysis that do address the heterogeneity of "content," which is particularly prevalent in the case of digital content.

My approach to content analysis has primarily been inspired by the *ethnographical content analysis* described by Altheide (1987) and the *networked content analysis* proposed by Niederer (2016). Traditional approaches to qualitative content analysis, as showcased in the field of communication sciences (Kracauer 1952; Fields 1989), often express a desire for systematicity and objectivity. An ethnographic content analysis (ECA), on the other hand, is a reflexive adaptation of the qualitative content analysis that allows researchers space for *movement* between concept development, data collection, and data analysis. Rather than approaching materials as evidence and aiming for systematicity to provide legitimacy, the focus of ECA is to provide a theoretical and analytical research design: "thus, ECA is embedded in *constant discovery* and *constant comparison* of relevant situations, settings, styles, images, meanings, and nuances" (Altheide 1987, 68; emphasis in original). Ethnography is the study of

people and their cultures and is occupied with understanding the communication of meaning, "as well as to verify theoretical relationships" (Ibid.). The purpose of this is to establish connections between gamer identity, how audience members identify as players, and the way they express themselves in Twitch streams. Doing so, this method can transcend the actual Twitch streams and move to a study of the streamers/players, more than merely the content they produce.

Based on Niederer's (2016) idea of the networked content analysis (NCA), I take into account the networked and distributed nature of streams as web content. In this, Niederer is occupied with the question "how the *technicity* may be made part of the definition, collection, and analysis of content being studied" (34; emphasis in original). The term technicity describes the nature of "content" in which text can hardly be separated from its carrier, which is inherent to web content. Herring (2009) argued that for an analysis of web content, we need to expand the paradigm of "content analysis" in order to find techniques that can account for the multimodality and multifunctionality of digital content (245). These techniques, Niederer argues, need to treat the technologies as active agents rather than as mere obstacles to traditional analysis (37). All streams of content – both from technological agents and human agents – are treated equally in order to come up with a networked content analysis. The "networked" part of the analysis means that content "now includes technical agents that network it, such as in-text hyperlinks, tags, and social buttons" (48). Niederer draws attention to how web content is increasingly distributed via platforms. These platforms not only serve as the context of the content, but they shape and contribute to what we consider "content" (49). In the case of the research at hand, this notion of the NCA treats the Twitch stream, not as an isolated practice but considers how various technological agents influence context and content. More specifically, this perspective allows for the analysis to take into account the platform's interface, its uses, and the specificity (and technicity) of the game. Particularly in relation to the player-response approach and its focus on empiricism, this idea transcends the focus on games as texts and seeks to address games as actualized through gameplay. It moves beyond a normative determinist approach of game-centric design and takes into consideration the autonomy of players to play with a game. The NCA provides a methodological basis to address both human and nonhuman agents as content, which means that both game (nonhuman) and player (human) can be accounted for and together make up the "player response." The networked nature of content sheds light on how "content" is of a distributed nature, consisting of various elements.

By addressing a larger body of streamers, games, and streams, I make two core adjustments to the qualitative content analysis. The first is that, following the NCA, the multimodality of content means that what constitutes "content" isn't as straight-forward as traditional communication studies approaches would prescribe. Therefore, I will work towards the inclusion of various technological agents – not just human agents – that contextualize and contribute to the multimodality of gameplay. The second adjustment is that "content" is also a form of cultural expression. Consequently, I treat each streamer's community as a 'culture,' thus taking up an ethnographical perspective to the study of cultural production. This can account for the overall performance and affective labor of streamers. The ethnographical approach will not merely address streamers as generic players, but it will take into account the uniqueness of every single streamer and their livestream.

1.2.2. Transcriptions of multimodal Twitch streams

The categories of traditional qualitative content analysis provide a concrete way to unitize, transcribe, and critically assess content, "capable of classifications and descriptions which conform far more closely to the texts than those commonly produced by quantitative analysis" (Kracauer 1952, 640). This is the starting point, where I will assess Twitch streams as if they are one stream of content. This method can give insight into a form of player response, as represented in Twitch game livestreams. It will look at the various forms and functions of gameplay and presents a way of analyzing livestreamed play from an empirical perspective. This one stream of content thus translates to player-response.

What counts as 'content' in this context is dependent on the medium. In the case of Twitch, the alternating and simultaneous roles of streamer and player both contribute to the process of content creation. A Twitch stream is highly distributed by nature and will therefore need to account for multiple streams of information at the same time. A Twitch stream consists of a variety of information streams, involving several human and nonhuman agents, such as viewers, chatbots, visual and audio streams. Daniel Recktenwald (2017) has taken some initial steps in the direction of providing a method for the transcription of Twitch streams, in which he presents *cross-modal communication* as the defining feature of such transcriptions. What he means with this is that a transcription scheme of Twitch must account for how several layers of content interact with each other. Therefore, the challenge is to develop a way of transcribing what happens in the cross-modal communication between streamers, gameplay, audience chat, and other streams of information (Recktenwald 2017, 70-71). I will adopt a comparative

perspective to content analysis by comparing multiple streams based on these criteria. Excerpts will serve as proof of concept, meaning that my analysis should give an adequate impression of how player-response can be studied on Twitch, what roles players take up, and how this eventually contributes to games as a cultural form. Using the transcriptions, this chapter will develop a way of understanding the different agents in a Twitch stream as players and as meaningful to the playing experience. The player-response approach dictates that we identify the empirical players of the game. In this case, the transcriptions will address how the various agents in the stream can function as players.

The analysis and transcription of content will specifically address the relation between (primary and secondary) players and the game. It will address who the players are in these livestreams and how they respond to and interact with the game. Furthermore, it will identify the forms of gaming capital that are generated in these streams as paratexts to games. Of particular interest for the analysis are the specific relationships between games and (streamers as) players. The focus for this will be on notions of investment from the streamer-player both in the game and the audience. Furthermore, it will be studied how these engagements can generate or otherwise contribute to the maintenance of gaming capital, in the form of reputation for example. It will be taken into account how streamer-players present themselves, as a performance (Woodcock and Johnson 2019; Gandolfi 2016), both in relation to game and audience-as-players. Doing so can address the functioning of Twitch streams as paratexts, its relation to games, to streamers, and players in general. Of particular interest are those streamer-players that not only brand themselves but brand themselves in relation to particular games. Streaming will be seen as a form of investment, in generating gaming capital for example, but also in generating popularity as a streamer.

1.2.4 Corpus

This online data consists of approximately eight hours spent studying twenty-six different streams of eight multiplayer games. The aim is to study a variety of streamers for every game in terms of audience size, content, and streamers. I focus only on multiplayer games, which will feature a variety of game genres and playstyles, from roleplaying to player-versus-player and cooperative play (see Table 1). In Twitch's catalogue browser, most games have their own respective categories on Twitch and are thus listed as such (see Figure 4). Chess is an exception to this, as the game of chess is listed as a category. As a result, the category lists streamers playing digital chess via *Chess.com* and *Lichess*, but also those playing chess on a board.

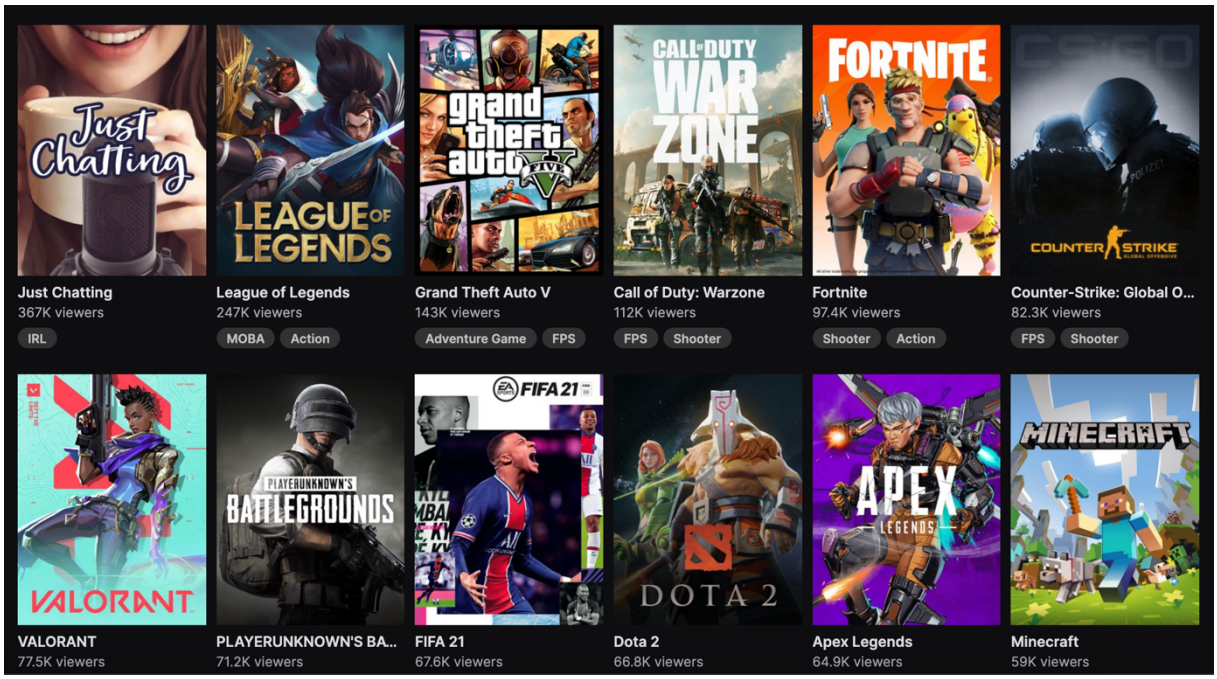

Figure 4 A screenshot of Twitch's catalogue of categories (sorted viewers from high to low). Screenshot by author on 28 May 2021.

For each of these different games, I will aim to include various styles of content creation, ranging from casual to competitive, from educational to performative. Each stream was studied for between ten and thirty minutes, with a total of an hour stream time for each game. The length of these recordings was determined to be long enough to study one game, round, or session, depending on the games that were played. The list of these recordings can be found in the appendix. As a result, games like *Rust* and *GTA V* did not feature distinct rounds or matches that were played, whereas player-versus-player (PvP) games like *Apex Legends* (Respawn Entertainment 2019) and *Rainbow Six Siege* have fairly predetermined match lengths.

Game	Developer	Date	Genre(s)
Grand Theft Auto V Online	Rockstar North	2013	Action/adventure, RPG, sandbox
Apex Legends	Respawn Entertainment	2019	Battle royale, first-person shooter, team play
League of Legends	Riot Games	2009	MOBA, player-versus-player (PvP), teamplay
Rainbow Six Siege	Ubisoft Montreal	2015	PvP, tactical first-person shooter, team play

Rust	Facepunch Studios	2018	Cooperative survival
Chess.com	Erik Allebest & Jay Severson	2007	Abstract strategy
Lichess	Thibaut Duplessis	2010	Abstract strategy
Dead By Daylight	Behaviour Interactive	2016	Survival horror, cooperative
Rocket League	Psyonix	2015	Driving/Racing, Sports, PvP, cooperative

Table 1. List of corpus games and their characteristics

In terms of the streamers, I have attempted to maximize diversity in terms of age, gender, sexuality, race, nationality, and identity performances. Furthermore, I have sought to create a diverse set of streams in terms of audience size as well. With this, the aim is not to make generalizable claims about livestreaming as a whole, but about being able to selectively compare a diverse collection of materials. The goal here is to comparatively analyze a small number of detailed examples. I distinguished between small streams (<100 viewers; N=5), medium streams (100–250 viewers; N=7), large streams (250–1000 viewers; N=3), and massive streams (>1000 viewers; N=7). On top of this distinction, it is also important to note that there is a difference between Partner streamers and Affiliate streamers. Partners are streamers with large and stable viewership. It follows that all of the streamers in the 'massive streams' and 'large streams' categories are Partners. In the 'medium stream' category, however, the numbers are dispersed quite evenly (see Table 2).

Streams	**Small**	**Medium**	**Large**	**Massive**
Total	7	9	3	7
Partners	1	4	3	7
Affiliates	6	5	0	0

Table 2. Distribution of Partners and Affiliates in different sizes of streams.

Concerning the subject of labor and monetization, I argue that it is important to find a balance between Affiliates and Partners in the dataset. Although these numbers do not tell the whole story, it provides relevant contextual information to a streamer and their stream. Whether or not someone is a Partner or not might tell something about someone's following. Those with larger following may have larger responsibilities towards their communities and a different relationship with particular games than those with smaller followings. Also, based on the audience sizes, diverse forms of tandem play (i.e., playing along with or playing for) are

prioritized differently, meaning that different sized audiences will affect the type of tandem play in distinct ways.

1.3 Analysis

The analysis section of this chapter discusses the player-response approach in various game livestreaming contexts. By highlighting a few excerpts drawn from the data, this section will perform an analysis of the game as the result of player interpretation: player meaning both the streamer as a player and their audiences. Concepts like secondary play and tandem play are particularly crucial in identifying the various *players* found in the game livestreams. Doing so, in the first part, I will describe how various playing strategies in livestreams are indicative of playful identity performances. With this, I argue that *identity* plays an important part in the relationship between the different types of players in livestreams and that context is important to meaning-making in play. In the next part, I explore how Newman's (2002) typology of primary and secondary players can be extended by also considering forms of *tertiary* play. Finally, I will dispute Newman's notion of *control* as a defining and distinguishing factor in different forms of play. Using a critical reflection on various forms of tandem play found in livestreams, I argue that control is of much less importance in the context of livestreamed play. In all of these analyses, I will critically assess the notion of player response as an interaction between games-as-texts, the players' act of interpretation, and the sociocultural context of this interpretation.

1.3.1 Playful identity performance

In an excerpt taken from streamer "Saysoamy" streaming the cooperative online survival game *Rust* (Figure 5), we can see how playing along with viewers can entail a form of a playful performance of the self. In this case, the streamer creates and performs a 'noob' persona – a gaming term for a newcomer (Table 3). The survival game *Rust* is as open-ended as it can be. The only "goal" is survival, but how a player chooses to approach this is completely up to them. As the content creator "Mister Flak" describes in his 2-minute video description of *Rust,* the player starts with a rock and torch, nothing more: "the rock gathers things. Use those things to make tools and the tools to gather more stuff. Use the stuff to make a house, but you want *more*." (2018). And this is precisely where the player-response approach comes in, as the game-as-text does not instruct players to want anything apart from survival. The dominant playstyles,

however, as displayed by the actual players such as Saysoamy and her audience, dictate that it is a game about endless expansion, raiding other players, and displaying your wealth.

Figure 5 Screenshot of Saysoamy playing Rust on stream. Displays the "inventory management" in Rust. Captured by author.

I argue that Saysoamy's presentation of herself as a noob can first of all be considered a form of playful identity performance, in which the game is deployed as a tool to do so. As is argued by Frissen et al. (2015), "play acts as a heuristic lens through which focus is shifted from narrative representations to situation-specific performances of the self, which fits better with the dynamics of […] media culture" (264–5). Such an example is given by Werning's (2017) study of autobiographical game-making, in which players deploy the games as *tools* for a playful performance of the self. In this case, such performances highlights the agency of players to create "emergent narratives" through play (Mateas and Stern 2006). The performance of the self thus downplays the autonomy of the text and underlines the intersection between play and identity. In *Rust*, Saysoamy's presentation of the self as 'noob' is an actual playing persona that complements meaning-making in relation to the game-as-text. *Rust* is notorious for "the grind," meaning that players have to continuously perform dull and repetitive tasks in the game to become successful (u/Bacex 2019; u/William671 2020). The dominant persona is thus someone who puts the time in. Not knowing every intricate detail of the game and making this known is this performance on the grind-focused status quo of *Rust.* It offers an opportunity to draw in the audience in order to, together, work on 'the *Rust* grind'.

Source	Text/action
[*Rust*/Gameplay]	[Player managing inventories]
Chatter 1	"You need more metal frags"
	"In the tc"
Streamer	"Oh, that's why. So it's not the wood that's the problem."
[*Rust*/Gameplay]	[Player solves inventory problem]
Streamer	"Oh... Thank you."
	"I need to stop doing this and I need to focus on the metal frags part. So, I should burn these, right? I always forget about the metal frags. I think last time somebody mentioned that I needed more metal frags.
	Ah aaaah. [applauds]. Thank you, thank you. I appreciate it."
	"I appreciate it. For those of you who followed just to come in to say 'you need to do this': thank you for helping a noob, such as myself. Much appreciated."

Table 3. "Saysoamy," streamed live playing Rust for 181 viewers, 2 April 2021.

A seemingly small thing as presenting oneself as a 'noob' among 'experts' puts forward the importance of this idiosyncratic nature of play when it is performed live. What it illustrates is that player-response is fundamental to the meaning-making of the game. Through such playful identity performances, playing poorly becomes a vehicle for engaging content. This simultaneously displays the benefits of performing such a persona as it offers the possibility for an interactive relationship between the primary player and the secondary player. This is in line with Consalvo's (2007) characterization of gaming capital as something that is not only about being knowledgeable or reputable in and around a game but more importantly, about exchanging that knowledge with others (18). In this case, the Twitch stream becomes a forum for the exchange of knowledge about *Rust.*

What emerges in the excerpt from Saysoamy's *Rust* stream is a combination of a "think-aloud" technique in which the streamer opens up the opportunity for audience members to become involved in the gameplay, and the playful performance of the self-branding as a noob. Not only does narrate her thought process while playing, but she also invites the audience to contribute to the gameplay. In this case, the performance of the 'noob' identity is a manifestation of the practice of *playing along with* the audience. It displays a reflexive attitude of the streamer with the games' emergent narratives. Frissen et al. (2015) explain that, "whereas in the case of narrative, the inscribed identity has the character of a causal chain of events, in the case of ludic identity the result is rather a play area (*Spielraum*), a space of possible actions" (38). In other words, the game presents itself as a medium for a playful performance of the self, rather than as a predefined set of uses. Whether by playing like a noob, or by presenting oneself as the expert, the streamer-player can transform the game into a vehicle for ludic activity using a playful identity performance thus enrichening the meaning-making of the game. As such, it can be argued that Saysoamy's interpretative act of play is enriched by the context of the livestream, in which Twitch allows her to engage differently with the game (as text) as opposed to a private non-livestreamed setting. In the next excerpt, I explore how streamers can also this same strategy of a playful identity performance for the other strategy of tandem play, namely *playing for*.

In Table 4, listed below, I zoom in on an example where the streamer "Pengu" performs the *playing for* strategy for his audience. In this case, the streamer is a retired – multiple world champion – professional *Rainbow Six Siege* player. He performs a notorious 'one-tap,' a display of skill where the player does not 'aim down sights' – which guarantees accuracy – but instead uses the 'hipfire' mode, which makes it significantly more difficult to land accurate shots (Figure 6). This performance of skill happens when Pengu's teammates notify him that the opponent is in low health, meaning that the 'one-tap' has more chance to succeed. To top it all off, the opponent sends an in-game chat message to ask the streamer whether he is the real Pengu, to which he responds extravagantly.

Source	Text/action
Teammate 1	"The last guy is in bathroom. I'm planting [the defuser]"
Streamer	"I got you, buddy"
[*Rainbow Six Siege*/Gameplay]	[Player defends Teammate 1 in planting process]
[Rainbow Six Siege prompt]	*Defuser planted. Defend the defuser.*
Teammate 2	"1 HP [health point] by the way."
[*Rainbow Six Siege*/Gameplay]	[Player moves last known location of the enemy]
Streamer	"One-tap, one-tap"
Teammate 3	"One-tap!"
[*Rainbow Six Siege*/Gameplay]	[Player flicks multiple times to perform "one-tap"]
[*Rainbow Six Siege* prompt]	*All enemies eliminated. Round 4 Won.*
All teammates	[laughter]
Chatter 1	EZ [easy]
[in-game chat] Opponent 1	"Are you the real one?"
[in-game chat] Streamer	"Would a fake Pengu hipfire you like that?"

Table 4. "Pengu," streamed live playing Rainbow Six Siege for 1302 viewers, 1 April 2021.

Figure 6 The moment where Pengu performs a 'one-tap' on the enemy. Screenshot by author.

While Pengu does attempt to interact with his audience, it remains difficult to detect such an interaction in the sense of *playing along with*. It may be argued that this is because of the "ceiling of tandem play," in which "a streamer is so focused on entertaining the largest number of people possible that they are no longer playing along with their spectators, but only playing for them" (Scully-Blaker et al. 2017, 2034). Following Scully-Blaker's theorization, Pengu's *playing for* strategy would be mostly the result of practical considerations with regard to audience size, not necessarily by the game or Pengu's expertise. I contest this, because, in many examples found in this study, the game *does* seem a determining factor for audience engagement, regardless of audience size. As such, the higher-paced games appeared to be less suitable for interactive *playing along with* types of gameplay. *Rainbow Six Siege* was often more interactive in the *downtime* between rounds, same for the fast-paced *Apex Legends,* whereas even the largest Chess and *Rust* streams saw more continuous *playing along with* strategies due to the pacing of the game.

Despite the different performances for different games, the way Pengu plays speaks truth to the idea that he plays with an audience in mind, or as Goffman (1978) would put it, that he is believing in the part he is playing. In other words, when the streamer performs the 'one-tap,' he is performing his stage role of the expert player who is expected to display his skills on every occasion. The streamer displays a clear sense of belief in his own performance, as he reinforces with the final message of the excerpt, directed at his opponent: "would a fake Pengu hipfire you like that?" In this, he opposes the 'real' Pengu, the expert as a staged performance, to a 'fake' Pengu, who would not be able to do those things. It paints a striking picture of the streamer being immersed in the part he is playing for his audience. Similar to the earlier example of Saysoamy's stream, the playful identity performance functions as a vehicle for various forms of tandem play and a performance of the self. Consequently, this type of identity performance characterizes player-response as something that is informed by the context of play. The interpretative act of play and meaning-making of the game, in these examples, is informed by the context of livestreams.

1.3.2 Tertiary players: those on the virtual backseat

Following Newman's (2002) distinction between *primary* and *secondary* play, the challenge of studying tandem play in multiplayer games is that there is quite simply a larger number of players involved in the gameplay that a secondary player engages in. As argued earlier, Newman's notion of control is of less importance than the idea that player roles are distributed

as a result of different player perspectives. It means that in livestreams of multiplayer games, there are many different players that in one way or the other affect the outcome of play, with and without control. In some cases, this perspective of the primary player – as actualized through the stream – becomes enmeshed with what I will call *tertiary players*. As the term implies, these players are even further removed from the gameplay experience the primary and secondary players are involved in. This term comes directly from the observations on player-response in livestreams. Tertiary players are the other participants in the gameplay of the primary player, such as teammates and opponents in player-versus-player games and other players in the lobby in open-world games. Whether tertiary players become involved with the experience of gameplay of the primary player's perspective is highly situational. Therefore, tertiary play is only actualized at the moment when the perspectives of a tertiary player, primary, and secondary player merge, albeit momentarily.

An example of a momentary actualization would be when an opponent in a player-versus-player game defeats the primary player, thereby disrupting the gameplay of the primary player, perhaps inciting the secondary players to respond. A somewhat controversial example of tertiary play is when several streamers were continuously harassed by a cheater in the battle royale game *Apex Legends.* The cheater targeted several Twitch streamers and posted compilations of his work on YouTube. Whereas other 'tertiary' players are rarely of any importance to the livestreamed gameplay of streamers, the well-known *Apex Legends* streamer "ShivFPS" was particularly affected by the cheater (see Figure 7). The cheater takes up the tertiary position by impacting the stream as the product of ShivFPS's gameplay. An example of a more continuous actualization of tertiary play is presented by the teammates or fellow clan mates in multiplayer games while the stream is recorded, who have a separate but nonetheless affiliated perspective on the gameplay experience. Crucially, in each of these cases, the stream is the mediator between the primary, secondary, and tertiary players.

Other than primary and secondary players, we can also see the involvement of *tertiary* players in player-response in livestreams. In the earlier excerpt, for example, Pengu (Table 4) is prompted to perform a "one-tap" by a teammate's notification that the enemy is in low health. It shows how *tertiary players* can become involved with the experience of primary and secondary players. In this case, tertiary play is the momentary coming together between the streamer (primary player), his audience (secondary players), and the teammates (tertiary players). At that moment, Pengu's teammates become tertiary players as they direct their attention not to their own gameplay but to the livestream. Their callout for a "one-tap" reflects

this spectatorial position as tertiary players to the livestream. When considering this excerpt as an example of an interaction between primary, secondary, *and* tertiary players, it becomes more of a *playing along with* experience as the *tertiary players* mediate the gameplay to the audience. Although the secondary players might have little agency to affect the outcome of the game, the tertiary players take up this role by playing as an audience themselves.

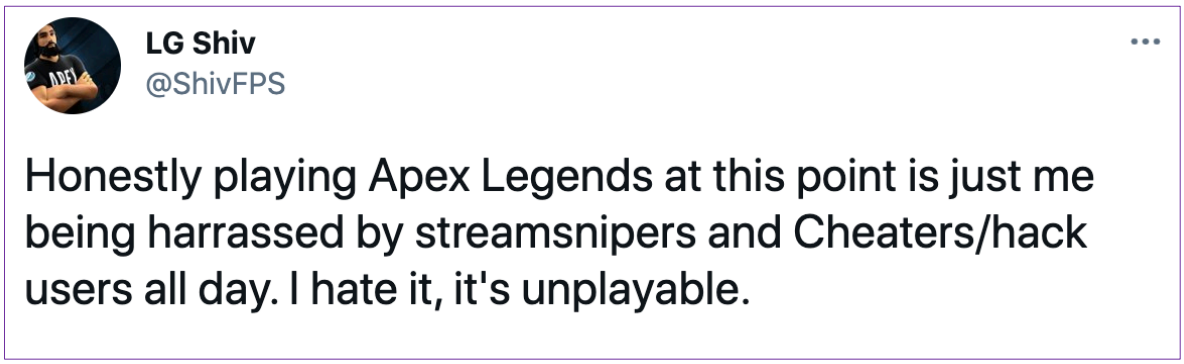

Figure 7 Tweet by Shivam Patel (@ShivFPS), 24 April 2021. https://twitter.com/ShivFPS/status/1385900988192669696?s=20

1.3.3 Controlling play and the hierarchy among players

The excerpts highlighted in 1.3.1 display various strategies that bring together the various players within one gameplay experience. The distribution of player roles – controlling, non-controlling, primary, secondary, and tertiary – points to how we can consider livestreamed gameplay as a form of player-response. More importantly, it illustrates how we can study player-response beyond a focus on "control" as the defining feature of play. In other words, in this section, I identify other *players* in the livestream than just the streamer/player as the focal point of the stream. Using the literature on *tandem play* (Scully-Blaker et al. 2017), I show how audience members, too, can take control over play through game livestreams.

In Saysoamy's *Rust* stream (Table 3) we can see the hierarchy and differences between Newman's (2002) controlling *primary* player and the non-controlling *secondary* player. In this case, it becomes notable how the game becomes a tool for 'content' and distribution of player-roles. The secondary player shares expertise about the game with the primary player, thereby taking up a role that is perfectly attuned to the ruleset of non-controlling play. According to Newman (2002), secondary play is characterized by players taking up tasks that the primary player does not have time for. In Table 3, one such example is displayed by the chatter who gives the steamer advice on which materials to pick. Despite not being in control over the mechanics of the game, they are nevertheless engaged with the game by sharing their knowledge with other players. Similarly, the streamer takes up this designed role of the controlling *primary* player alongside those secondary players by thinking aloud (T. L. Taylor

2018), making their thought processes known to the public and thus soliciting help from secondary players. A ruleset for tandem play thus prescribes that the primary player has to give up (part of) their control in order for secondary players to become involved. In the case of Saysoamy, the streamer gives up part of her control for her audience to become involved as participants.

A completely different example is seen with the *playing for* strategy displayed by Pengu where not the audience but the streamer himself is presented as the expert at the game. The gap between audience and player is therefore so big that *playing for* is about displaying skill, not about getting the audience involved. The audience does get involved with the streamer, but not in the sense of control. During the stream, many chatters send commands like "!sens" and "!res," to which the automated setting generates a display of Pengu's settings for the game in terms of mouse sensitivity (!sens) and screen resolution (!res). Although it may seem that the audience is hardly engaging with the actual gameplay, this type of audience behavior resonates well with Cheung and Huang's (2011) spectator persona of *The Curious*, meaning those game spectators that are concerned with *learning* from the gameplay they watch (767). In such an example, the spectator is concerned with learning from the streamer as a means to elevate their own playing experience. In line with Niederer's (2016) ideas on the technicity of web content, the digital infrastructure of Twitch takes up a significant role in what I consider 'content.' Technical features such as tags, hyperlinks, and chatbots not only provide the context for digital content to be distributed, but the platforms also influence the content itself. In this case, the digital infrastructure of Twitch with its command system (chatbot) contributes to the exchange of game knowledge in Twitch streams.

Engaging in such a way with Twitch streams can be considered a form of tandem play, albeit indirectly, as it does affect the actual practice of gameplay itself, although not that of the primary player. This furthermore highlights the crucial difference between tandem play and secondary play. Tandem play is the situation two players have to work in tandem, almost in a non-hierarchical manner, whereas secondary play implies that control is the most fundamental difference between the two, resulting in a distinct playing experience for either part. My argument is that by *playing along with*, audience members take control over their own interpretation of a game and its "emergent narratives" (Mateas and Stern 2006). In this, I echo Genette (1997) and Consalvo (2007) in that paratexts inform a reader's understanding of a main text. It points to the idea, as represented in the player-response approach, that readers (or players) are informed by their sociocultural context in their "reading" of games. In this case,

the cultural practice of game livestreaming provides such a sociocultural context informing player's interpretations of games both on a microscale and macroscale. Concretely, Twitch streams as paratexts thus contribute to audience's interpretations of games. Streamers sharing their expert knowledge through gameplay, explaining things, or sharing their settings, can thus significantly inform the player-response of audiences as secondary players.

1.3.4 Player-response: how livestreamed play informs meaning-making

The analysis of how various players become involved in the act of gameplay demonstrates the potential of studying game livestreams as sites to study player-response. As mentioned earlier, tandem play is presented as an affordance of livestreams. It is for this reason that I have taken up the task to provide a methodological proof of concept that illustrates how player-response can be visualized in game livestreams in the form of tandem play. In the excerpts above, I have illustrated the interaction between games-as-texts, primary, secondary, and tertiary players, and how this interaction is informed by the sociocultural context of play.

Crucially, to draw the discussion back to the player-response approach, player-response is not just about the game-as-text, but about the individual's interaction with the game and the context from which this interaction happens. For the most part, the analysis has focused on the interaction between player and game, as in how playing contributes to the meaning-making of a game. On the level of the interaction between the game and players, the central idea is that players reflect upon the structures of the game both through their frame of reference. It is not a one-on-one translation between game and player, but the interaction between "textual signals" communicated by the game and the player's "acts of comprehension," to echo Wolfgang Iser (1978, 9). This meaning-making is an ever-evolving process inseparable from the reader's experience" (Hubard 2008, 169), which, according to Iser, does lead to an overall singular conception of meaning (e.g., Rust is a survival game), "but as this cannot be abstracted from the different phases of the process, its constitution and its apprehension in fact go hand in hand" (Iser 1980, 149). This is an idea that is in line with Mortensen and Jørgensen's (2020) reading of Iser, in which they propose to focus on implied players, plural, rather than a singular implied player, "as an amalgamation of some of the typical traits found among certain actual groups of players" (95). In this case, the variety of playing practices, playstyles, and meanings that emerge about a game underscores that playing as meaning-making is by essence processual and therefore subject to change. Furthermore, it illustrates how meaning-making happens in the act

of interpretation, which is highly contextual and dependent on the player's playstyle, skill, literacy, but also the degree of control and even the kind of identity the player performs.

The underlying idea is that this interaction – player-response – is informed by the reader's personal experience and sociocultural context. In this case, with the example of Pengu's "one-tap" (Table 4) and Saysoamy's profiling as "noob" (Table 3), it shows that player-response in livestreams is often a performative act of self-branding or personal transformation and the result of game literacy, skill, and dominant playstyles. In the example of Pengu's stream, we can see all three types of players – primary, secondary, and tertiary – act in correspondence to the persona of Pengu as a performer. Player-response, in livestreams, is thus informed primarily by the streamer's persona as much as it is by the game itself. Furthermore, the interaction between secondary and tertiary players shows how livestreams as paratexts can potentially inform their knowledge and interpretations of games. Consequently, it demonstrates the potential of game livestreams to become a contribution to games as a cultural form. As is shown by the "empirical players" (Mortensen and Jørgensen 2020) in Table 3 and 4, the livestreaming ecosystem significantly shapes games as a cultural form by facilitating the exchange of knowledge, reputation, or playstyles.

Lastly, the specific interaction between different types of players in livestreams points to the stream as a mediator of play. In those cases, the stream becomes a *forum* for tandem play (Scully-Blaker et al. 2017). This is a particularly interesting idea with regard to speedrunning and other types of playstyles that transform the game into a tool for 'content' that is to be mediated by Twitch. Speedrunning is considered a particularly suitable practice to transform the stream into such *forum* for tandem play, as it allows audience members to think along with the gameplay by giving their input, "be it … suggesting changes to how a game is run, through prompting the runner to demonstrate how to practice particular exploits, or even offering the streamer tips on how to improve" (Scully-Blaker et al. 2017, 2033). Practices like speedrunning highlight the fact that certain game livestreams have a larger capacity to transcend the game-as-text and create a form of paratextual knowledge. In those cases, game livestreaming can really elevate the meaning generated from games. The player-response approach has proven to be particularly effective at showing exactly that such practices are not the result of just player-initiative, neither is it something that is designed by the game. Instead, it is the interaction between the game-as-text, the player's reading, and their sociocultural context. In Chapter 2, I will demonstrate this potential of the stream as a forum, as momentary public spheres for videogame play, for example in relation to *metagaming*, which are practices of gameplay played

outside games (Boluk and LeMieux 2017). It will zoom in on the phenomenon analyzed in this chapter – the interaction between game-as-text, players, and context – and will develop a deeper understanding of how this relationship is redefined *by* livestreaming thereby constituting games' cultural form.

Chapter 2: Understanding the streamability of videogames

In his study of free-to-play games, David Nieborg (2015) argued that the rules of play are now not only defined by the game itself but also by market logic. He explains how platformization affects the market logic of (free-to-play) games – in his case, *Candy Crush Saga* (King Digital Entertainment 2012) – because of the platform's vital role in the distribution. The business model changed from the focus on selling physical game copies to generating long-term engagement with the players. This model is translated into the game mechanics by designing games that offer large numbers of small "levels" coupled with monetization strategies, for example by setting a time limit to a playthrough that can only be extended by means of payment (Nieborg 2015, 7). In such examples, the business model of games is neatly attuned to the means of distribution and production with platformization. This thesis will add to these perspectives by addressing that business models and the design of games are now also guided by the logic of *streamability*. Building on the work done in the first part of the thesis – discussing player-response, gaming capital, and Twitch streams as paratexts – this second part will further elaborate on the notion of streamability to characterize the relationship between streamers and games as a cultural form through a study of streamable content creation and streamable game design.

This chapter will continue Chapter 1's aim to study the relationship between streamers and digital games and to define the cultural practice that characterizes this relationship. I will work towards developing a characterization of games and game livestreaming as a cultural form, in what I call *streamability*. By revisiting earlier literature on streamability (Clarke 2012; Murray 2005), I will study how media circulates through audiences and institutions, in this case, zooming in on streamers, games, and the digital platform Twitch. Doing so, I will develop a "grounded theory" (Glaser and Strauss 1967) of streamability, which means that I will establish a revised theory of streamability based on the qualitative study of empirical data. Such a grounded theory studies streamability as a spectrum of unique interactions between livestreaming and digital games, as manifested in different contexts and design aesthetics.

2.1 Theoretical framework

An understanding of the streamability of videogames will be developed from a study of digital games as they are actualized in Twitch livestreams. I will take the observations of Chapter 1 as a point of departure – in that Twitch livestreams can be analyzed as a form of player-response. I will develop an understanding of *streamability* as a concept, using theories of *spreadability* (Jenkins, Ford, and Green 2013), sociotechnical systems and affordances (Niederer and Van Dijck 2010; Postigo 2016), and the assemblage theory (Deleuze and Guattari 1987; DeLanda 2006).

I will take up literature on spreadable media to address the roles of participatory content creation in the overall ecosystem of media circulation. Considering the inherent technicity of digital (livestreaming) platforms, I address the interplay between technology and social practice by studying various livestreaming settings as sociotechnical systems. Crucially, these perspectives are brought forward not to define a single essence of streamability, but rather to develop a preliminary understanding of the concept based on the relations that emerge in this study. Therefore, I will widen the focus to also consider the ontological implications of such an approach. Following the *assemblage* theory as introduced by Deleuze and Guattari (1987) and interpreted by DeLanda (2006), this part will theorize how we can understand digital games by a focus on relationality, rather than by focusing on essential traits. This chapter moves away from an approach that seeks to define games by their design and instead takes *streamability* as a function of the assemblage, to argue that the ontology of games is defined by its inability to reduce it to essential traits. *Streamability* provides a particularly interesting framework to do so, as it highlights the constant push-and-pull dynamics between players, streamers, Twitch, and game developers. Finally, this chapter will shed light on how streamability as cultural practice can shape game design and vice versa. With a consideration of the coevolution of streamable games, I will address how platforms, users, players, and games each affect each other, together (re)shaping games as a cultural form.

2.1.1 From spreadable to streamable content

As was discussed earlier in the thesis, early definitions of streamability came mostly from perspectives in transmedia and convergence culture. Most prominently, Simone Murray (2005) coined the term to designate the multi-directional strategies employed by media conglomerates as a means to distribute a text across multiple levels of content and revenue streams. It is a collection of centralized distribution strategies that can be deployed quite easily by connective

platforms such as Twitch, which can use their content creators as distributors of these texts. I argue that this idea of streamability deserves some scrutiny, as, for Twitch, it does not account for the significant diversified work of content creators within such configurations, meaning that distribution is also a form of production. A preliminary revision of *streamability* will be derived from the work on *spreadable media* (Jenkins, Ford, and Green 2013), thereby addressing both the technical properties as well as the cultural properties of streamability:

> 'Spreadability' refers to the technical resources that make it easier to circulate some kinds of content than others, the economic structures that support or restrict circulation, the attributes of a media text that might appeal to a community's motivation for sharing material, and the social networks that link people through the exchange of meaningful bytes. Spreadability recognizes the importance of the social connections among individuals, connections increasingly made visible (and amplified) by social media platforms. […] It makes important actively listening to the way media texts are taken up by audiences and circulate through audience interactions. (Jenkins, Ford, and Green 2013, 4–6)

In short, spreadability refers to the technical and structural capacity to circulate specific types of content, which is amplified by social media platforms and driven by user input. Crucial in their definition of spreadability is that it differs from "stickiness," which refers to centralizing audiences to generate advertising revenue (4). Instead of centralizing and unifying audiences, spreadability allows for the emergence of dispersed and diversified audiences (6). It embraces participatory fan practices, in which audience members engage with media content in their unique ways thereby *spreading* the content. In the context of Twitch and the distribution of videogames, there is the "spreadable" possibility that Twitch streams form unique paratextual contributions to videogames while there is also the other possibility that Twitch is merely a "sticky" outlet to generate marketing revenue for games in which the *kind* of content that is created is of no significance. Although stickiness and spreadability are fundamentally different, how they are put in practice is usually more of a spectrum in which different strategies are used for different purposes. In this case, I will explore the implications of these strategies for the purposes of *streamability*.

Based on the work on spreadable media as well as on streaming as a concept, a tentative revised definition of streamability can be developed. First, streaming, at its core, refers to the transmission and retrieval of digital content from a central source (Spilker and Colbjørnsen 2020, 1211), for example from a streaming platform such as Twitch. In other words, streaming

organizes the spreadability of games-as-content, in that it provides a platform to distribute one media text through several layers of audiences. On the technical level, streamability refers to the ability to transmit and receive content from such a source. On a cultural level, streamability allows for the emergence of *communities* that facilitate such transmissions. Moreover, to echo Jenkins, Ford, and Green (2013) in their characterization of spreadability, streamability amplifies the social connections made among participants facilitated by these platforms that ultimately contribute to the creation of uniquely meaningful and diversified media texts.

This approach will combine the participatory ideals of *spreadable* media with the more established notions of the centralized (platformized) structure from which content creation happens. I consider *streamability* a hybrid concept between, on the one hand, the centralized structure from which content creation is orchestrated – represented by the idea of *stickiness* and by literature on platformization (see Nieborg and Poell 2018) – and, on the other hand, the participatory potential of *spreadable* media in which users have the autonomy to create diverse and meaningful media content. While the roots in *spreadable* media might implicate a perspective celebratory of the participatory potential of Twitch for "fans" to make their personalized content, this thesis will take a stance on this by addressing possible constraints instated by the centralized architecture of digital platforms. I do acknowledge the participatory potential of Twitch content, but I will also critically assess the platformized and centralized structure from which this happens. The aim of this is to give a comprehensive account of the distribution of power among various participants in the streamability of digital games.

Questions of streamability as well as spreadability cannot be disassociated from the politics involved in it, for example with regard to notions of platform power (Srnicek 2017). However, these perspectives will be of lesser concern for this particular thesis as they deserve the full attention and a dedicated body of literature to address them. For that reason, the conclusion features a section that connects the theme of this thesis to suggestions for further research that could address the politics of streamability.

2.1.2 Sociotechnical systems and affordances

In order to define which roles are taken up by content creators in the circulation of digital games, I move towards a consideration of the way technologies and social practices intersect. In their study on the "platformization of cultural production," Nieborg and Poell (2018) describe the monopolistic tendencies of platform conglomerates – most notably GAFAM – in which cultural production has been increasingly affected by the sociotechnical infrastructures of digital

platforms. This particularly affects the economic position of cultural producers, also referred to as *complementors*. Complementors are the suppliers of content who mediate between a platform and its consumers – the end-users (Van Dijck, Poell, and De Waal 2018, 17). The crucial idea for Nieborg and Poell is to question how platforms treat their users (complementors) in terms of access to production (4280).

One way of addressing this is by approaching the platform Twitch as a "patron" (Burgess and Green 2018). Patronage is a way for platforms to set the conditions for UGC creation. Examples of those conditions are Twitch's "Partner" and "Affiliate" programs (see Case Study 1). These programs, by nature, commercialize UGC and set the overall social conditions for the streaming ecosystem. The qualifications "Partner" and "Affiliate" are largely automated, as streamers can only apply once they hit certain numerical thresholds. Each of these thresholds is centered around growth and measures average viewership, activity, and follower rates. It transforms the social construct of 'reputation' or status into a commodified good and differentiates between different product tiers and classifications. In this case, it translates to a reputation system similar to that described by Niederer and Van Dijck (2010) in their study of Wikipedia as a "sociotechnical system" – which describes an "intricate collaboration between human users and automated content agents" (1368). For their study, the sociotechnical system means that the technological distribution of access and permissions translate to forms of social reputation. Consequently, users can navigate Twitch's interface similar to how they would navigate a catalog in that it distinguishes between different 'levels' of users as different 'products.' The value of "content" is thus measured through *data*, which is a platform's main source of power (Srnicek 2017, 255). As is highlighted by literature on platformization and patronage, digital platforms can use their power to transform users into commodities. Through such systems of *platform power* (Van Dijck, Nieborg, and Poell 2019; Srnicek 2017), these digital infrastructures can automate social constructs, thereby commodifying cultural production and the expressive quality of games itself.

Case study 1: Streaming affordances on Twitch

The Partner/Affiliate programs of Twitch, as a designed set of sociotechnical affordances, allow users to monetize their streams by integrating sponsorships, advertisements, receiving donations and subscriptions. For the platform, it provides a carefully commodified and datafied *technical* structure that benefits their business strategy. These Partner/Affiliate programs have also set the *social* conditions of content creation. The way these programs work is as follows. If streamers want to transform their hobby into something profitable, they will have to *make* Partner, which is in itself a phrase that already hints at the neoliberal rhetoric infused in these programs. A Partner will have full access to systems of monetization, all broadcasting tools, full channel customization, stream storages, transcodes, and partnered customer service (Twitch n.d.). *Making* Partner thus gives a streamer a certain status within the streaming community, as they are given more tools to work with. Options such as stream delay – used for streaming competitive games in order to prevent cheating – and transcoding – affecting the video quality of the stream – severely influence the *streamability* of one's content. Not having access to these tools thus affects the access to particular affordances of content creation and translates to a reputation system. The Partner program is thus best described as a sociotechnical system regulating *access.*

Feature	All Streamers	Twitch Affiliate	Twitch Partner
Monetization Tools			
Cheering with Bits	No	Yes (no Custom Cheermotes)	Yes (with Custom Cheermotes)
Subscriptions	No	Coming Soon (1 Sub Emote)	Yes (can unlock up to 50 Sub Emotes)
Game Sales	No	Coming Soon	Yes (premium features coming soon)
Ads	No	Coming Soon	Yes (premium features coming soon)
Video Tools			
Transcodes	As Available	As Available (with Priority Access)	Full Access to Transcodes
Past Broadcast Storage	14 Days	14 Days	60 days
Stream Delay	No Stream Delay Option	No Stream Delay Option	Stream Delay up to 15 min.
Payment Terms			
Chargeback Protection	N/A	Yes	Yes
Payout Timeframe	N/A	60 days	45 Days
Payout Fees	N/A	Covered by Affiliates	Covered by Twitch
Customer Service	Standard Support Queue	Standard Support Queue	Priority Partner Support, Access to Partnerships Team
Verified Chat Badge	No	No	Yes
Channel Page Icon	No	No	Coming Soon

Figure 8 Distribution of access among different "levels" of streamers.

The consequence of combining platform power with UGC creation is that users themselves can become datafied commodities through abovementioned systems of automatization and by a platform's "potential to exert control over relationships with complementors" (Van Dijck, Nieborg, and Poell 2019, 3). By archiving streams as content, metricizing them, and monetizing them, platforms transform UGC and the creators into commodities. Concerning the idea of streamability, it can then be questioned if datafication and commodification can be seen as categories of streamability. In previous literature, it has already been argued that there is an increased tendency for UGC platforms to either promote professional content or alter the conditions of user-led content creation to forcefully professionalize their content (Spilker and Colbjørnsen 2020).

The consequence of the sociotechnical systems that transform technologies into social constructs, such as patronage systems (Burgess and Green 2018), is that Twitch becomes a *curator* of cultural production. They not only alter the conditions under which content is produced, but they set the terms for an overall conception of *streamable* content in which the more 'reputable' streamers – e.g., Partners and Affiliates have access to more tools that enhance the streamability of content. On the one hand, these systems can stimulate creative activity by offering content creators the future possibility to earn money from content creation. Such forms of patronage can potentially give content creators the funds to increase the production value of their streams by buying new equipment. This is one example of how streaming platforms seek to professionalize UGC and thus make it more streamable. On the other hand, the consequence of such interventions of patronage is not only that platforms exert their power through control of the data flow, but another is also that platforms *intrude* in processes of user-generated cultural production, and, "whether these interventions are strategic or incidental, harmful or benign, they are deliberate choices that end up shaping the contours of public discourse online" (Gillespie 2010). This is what setting the conditions of cultural production means. It shapes public discourse about content creation on platforms such as Twitch. Seemingly mundane interfaces, mechanisms, and other design choices, therefore, have a significant effect on the nature of the content that is being produced. Likewise, it is safe to conclude that the conditions of *streamability* are also set by the platform, through systems of professionalization, commodification, and datafication. Therefore, this thesis will explicitly address the affordances of content creation, with the aim to identify this curating role of the platform.

To address which specific roles are taken up by which elements of the sociotechnical system, I will move to Postigo's (2016) study on affordances and sociotechnical systems. As a

consequence of the way such sociotechnical systems work, he characterizes the role of the platform as a "digital labor architecture." A central idea in his article is that the digital architecture of UGC platforms – in this case YouTube – simultaneously frames digital labor and "the meaning-making enterprise of any cultural activity" (333). He argues how the platform becomes invested in the production of content via the "capture and conversion system," meaning that the same architecture that represents the platform's business ideals is also situated in the community's cultural form (335). The type of "value" of content Postigo talks about is therefore both social value – for example in the form of gaming capital (Consalvo 2007) as discussed in Chapter 1 – and economic value for the platform. Affordances are the main focus of his study, which can describe the relationship between technologies and their users. Together making up one sociotechnical system, he zooms in on the *social* affordances – as the social structures that take shape with a given technical structure or interface – and the strictly *technical* affordances, which are merely the functions that technology makes possible (335–6). This division allows us to consider how some affordances are undertaken as social practices, which can shed light on how one artifact might generate different meanings, depending on whether you look at them as social or technical affordances.

The distribution of affordances affects the practice of content creation. It is for this reason that Postigo (2016) argues that most affordances are undertaken as social practices, thus pushing away from any deterministic approach to technology's shaping of design (335). In other words, on the level of affordances, we can see clear proof of platform power and curation of creative expression. This, however, glances over the fact that content creators have the agency to work with these affordances. Accordingly, with regard to the idea of streamability, technologies will be analyzed primarily for its social use. As Postigo so valuably displayed in his article, the technical affordances only tell you about the designed use, while the social affordances might shed light on what it truly means, hence the sociotechnical system. The same example of the Partner/Affiliate programs would thus demand a careful investigation on the level of *social* use, to look at how affordances of monetization also change the very nature of cultural production. Similarly, the subject of *streamability* can be analyzed on both the level of technical properties and how it is put in practice by content creators. In investigating the question of how content becomes streamable, I, therefore, address both the technical properties *and* social practices of making streamable content. Furthermore, as was already highlighted in the introduction of this thesis, I approach these affordances and sociotechnical systems beyond Twitch itself, as part of a "platform ecosystem" (Van Dijck, Poell, and De Waal 2018). In

conclusion, the study of affordances will examine the technical properties and design of Twitch and games as it is deployed by content creators on Twitch. It will thus also consider the affordances of games as platforms for engagement. Together, they make up the affordances of streamability as actualized through digital games and Twitch.

2.1.3 Assemblage of play

In the previous sections, I have dedicated much to the *agency* of content creators in UGC platforms, which will be front and center in the overarching idea of the assemblage theory. In the quest to study the *streamability* of games, this thesis takes up a consideration of the assemblage of livestreamed play. As it is already established in the previous paragraphs, studying the notion of streamability demands a perspective that considers the coming together of both humans – content creators, players, users – and technologies – platforms and games. The idea emerges that agency is distributed across several technologies and players – termed "distributed agency" by Werner Rammert (2008) – which can be used to address the specific ways in which both humans and technologies can exert their agency. Whereas Chapter 1 has discussed a player-response approach seeking to address what unfolds in player-actualization of games, this chapter takes these player-responses a step further.

The focus on the *assemblage* (Deleuze and Guattari 1987) moves beyond a characterization of essential traits of separate components to defining it based on the processes that have generated it (De Paoli and Kerr 2009):

> The concept of assemblage emphasizes the idea that a phenomenon should be conceptualized as the dynamic result of the empirical and historical formation of relations among a disperse variety of elements, rather than via the description of essential property of discrete elements. (Kerr, De Paoli, and Keatinge 2014, 323)

As is described in this quote, the assemblage theory provides a theoretical framework to study a phenomenon – e.g., streamability – as the dynamic result of the relations between various components of the assemblage. Streamability, then, is the result of the interplay between humans and nonhumans, meaning platform, games, players, streamers, and audiences. This focus is motivated by the intention to define the streamability of games not as a normative concept, but as an assemblage of people, technologies, and cultural practices that together determines the spectrum of streamability. By extension of the first chapter – in which I have studied games through player-response – this approach resists the idea of games as discrete and

"whole" objects: "a gaming experience is, therefore, an event in which human subjects, a set of technologies, and a media-cultural practice come together" (Muriel and Crawford 2020, 144). This idea resonates well with the main objective of this thesis, to study games as a cultural form. The notion of the assemblage provides a theoretical lens to bring these practices together into one framework focusing on the emergent quality of games (Kerr, De Paoli, and Keatinge 2014). This thesis will therefore synthesize an idea of streamability based on the emerging practices of livestreamed play on Twitch. This will be based on the coexistence and coevolution of players, games, and (livestreaming) platforms, by studying the contingent interrelations between them. Streamability, then, is approached as a function of the assemblage of people, platforms, and games.

Case study 2: streaming assemblages

An interesting example to illustrate the livestreaming assemblage is the "NoPixel 3.0" community of the videogame *GTA V* (Rockstar North 2013). This is a roleplaying community that is very prominent on Twitch with many very popular streamers participating as roleplayers, a few of whom are represented in the data for Chapter 1 (Appendix). NoPixel 3.0 is essentially a private server on *GTA V*, moderated by its own team of admins and developers. Crucial is that NoPixel 3.0 also refers to its own developed set of "mods" (Postigo 2007). These are fan-made modifications to the game; anything from changing the weather system, to enhancing the graphic performance, creating new cars, outfits, and characters, to designing a whole new in-game economy. NoPixel 3.0 has been designed from the ground up to account for a wide variety of roles, occupations, and activities. As a result, participants can roleplay as police officers, bank robbers, food vendors, loan officers, medical professionals, or taxi drivers, to name a few. In other words, NoPixel 3.0 has created its own universe in *GTA V.* This can be seen as an example of the technical agents of the assemblage serving the purpose of streamability. In this, roleplaying does not only come into being as a form of performative play through the players but also through technical agents. This, too, is best described as a sociotechnical system in which technological features translate to concrete social practices and forms of reputation. Furthermore, it highlights the importance to study *both* the technology and its use. *The* technology, in this, plays a fundamental role as adjustments to the original game are necessary in order to facilitate the social practice of roleplaying. NoPixel 3.0 itself is thus already a fan-made paratext to *GTA V,* in which the participants can facilitate the exchange of gaming capital.

2.1.3.1 Dynamic relations: how capacities come into being in the assemblage

Inspired by DeLanda's (2006) thesis on Deleuze's ontology, the assemblage theory applies to various wholes, "wholes constructed from heterogeneous parts" (8), and wholes "whose properties emerge from the interactions between parts" (10) and therefore refutes the need to define essentialist properties of objects and people. Instead, the assemblage accounts for the dynamic result of empirical and historical relations among empirical elements, meaning that components are contingent and its properties may change in different assemblages (De Paoli and Kerr 2009). In the case of digital games, such an assemblage could account for the interactions between game architecture, game code, rules, and regulations (Ibid.). In the context of this thesis, I also consider the interactions between platform interfaces, terms of service, and games (as a technology), but also players, companies, audiences. One interesting framework to discuss this contingency of the assemblage is through the earlier explored idea of the paratext. De Paoli and Kerr's (2009) study approaches cheating in games as an assemblage – as integral to and constituted by the processual nature of games – rather than as a paratext (see Consalvo 2007) and thus *separate* to the game. This does not mean that a paratext *only* acquires meaning in relation to the main text. Instead, it means that the characteristics of the paratext are contingent and that they may change in a different assemblage, a different set of relations. Illustrated elsewhere, Karppi & Sotamaa (2012) state that assemblages consist of *non*-essential elements; they may be reassembled into another assemblage, then acquiring a different meaning. Neither the originary text (game) nor the paratext (cheating practices), can then be reduced to essential traits as these traits are subject to change depending on the assemblage.

The earlier example of NoPixel's *GTA V* community (Case Study 2) shows that the paratext itself should not be interpreted as possessing any essential traits, only traits specifically emerging in relation to the assemblage. Roleplayers are expected to react to events that happen in the game world. For this reason, the developers of NoPixel have attempted to reduce possible interferences. Take the in-game time cycle of *GTA V.* For the game itself, an in-game 24-hour cycle will take forty-eight minutes of real time. NoPixel has changed this cycle to make days lengthier, to roughly two hours for a 24-hour cycle. This change, in itself, does not change the gameplay that drastically, as many things in *GTA V* are not time-dependent. Game-made stores are open 24 hours and players will experience no limitations caused by night-time. In roleplaying, however, players are expected to more or less live by real-life rules. Similarly, the game is imagined as a platform for free improvisation and roleplay which, in the original game, was not the case as it resisted the desired playstyles. The developers of NoPixel – or *modders*

(Postigo 2007) – reclaimed their autonomy and reconfigured the assemblage in a way that the game mechanics facilitate the desired play-styles of the roleplaying community.

Following DeLanda, the linkages between the components of an assemblage are thought of as "contingently obligatory" (14). Put differently, it means that rather than arguing that components are constituted by the very relations they have to other parts, they are thought to retain a certain autonomy of the terms they relate to. DeLanda argues that the properties of the components can never explain the relations which constitute a whole:

> In fact, the reason why the properties of a whole cannot be reduced to those of its parts is that they are the result not of an aggregation of the components' own properties but of the actual exercise of their *capacities*. These capacities do depend on a component's properties but cannot be reduced to them since they involve reference to the properties of other interacting entities. (DeLanda 2006, 15; emphasis added)

The autonomy of parts highlighted by DeLanda poignantly highlights that components might be detached from an assemblage and brought into interaction with other assemblages. The focus on the exercise of *capacities* can be seen in the action-potential of a small game mechanic such as the day-night cycle in *GTA V*. It highlights the fact that these mechanics do not possess any universal traits in themselves, only properties and *capacities* for exercise.

In conclusion, the ontology of videogames can only be seen as a contingent assemblage that must be studied in terms of its relations. It takes into account the specificities of each component or property as *capacities* that need to be *actualized* in an assemblage. The assemblage theory, in this research, thus offers a mode of reading in which games must be studied through relationality. *Streamability* can be seen as such a function of the assemblage, in which the context of livestreaming provides a specific exercise of the capacity of games that transforms the ontology of the game itself. The aim of this is not to make any universal claims about the ontology of digital games. Rather, the assemblage theory functions as a declaration of intent, in which the phenomenon of *streamability* is deployed to highlight the contingent relationality of digital games.

2.1.4 Coevolution of streamable games and livestreaming

In the previous section, I already highlighted the potential to study different assemblages empirically, which can give insight into the ways different technological properties can be actualized. This section will take that insight and zoom in on the coevolution between different

components of the assemblage. Karppi and Sotamaa (2012) suggest that assemblages are formed in coevolutionary processes, in this case meaning that the advances in videogame hardware affect the content of games and vice versa (418). These are developments that are historically and empirically motivated, rather than as possessing universal traits on themselves. Therefore, if we internalize that – as they posited – the advancements of videogame hardware affect the content of games, it follows that the streamability of games, as that which affords streaming, also affects the content of games and its cultural form. Put differently, "the relations between the *material* and *expressive* capacities are symmetrical, meaning that each can influence the other" (De Paoli and Kerr 2009, 4; emphasis added). In that sense, it can be argued that the overall material development of livestreamed play affects the expressive content of games, but also the other way around. Similarly, in their study of *DJ HERO* (FreeStyleGames 2009), Karppi and Sotamaa (2012) state that *playing research*, studying how the game is actualized in play, for that reason, "does not only analyze how DJ culture is *materialized* in the practices and actions of the game, but also inversely examines how the game contributes to DJ culture, how the material of the game becomes *expressive*" (422; emphasis added). In other words, it takes into account how *material* qualities can be *expressed* through games. Crucially, this mutual influence between expression and material qualities point to the coevolution of mutual affect between games (as materials) and expression.

Twitch livestreams of games, as paratexts, can be seen as such an extension of the expressive quality of videogames. If that is the case, it can be argued that Karppi and Sotamaa's (2012) idea of coevolutionary processes between material and expression can also be identified between games and streams, in which streams affect games and vice versa. Furthermore, it can even be argued that different expressions can affect each other, or even that one expression affects the materialization of another. Livestreamed play can affect games' cultural form, but the cultural form can also affect the design of games. For streamers, the material qualities of the game can affect the expressive practice of livestreaming, but livestreaming can also affect the game.

In competitive online player-versus-player games such as *Valorant* (Riot Games 2020) and *Apex Legends*, players have the chance to activate a "streamer mode" that allows them to hide player names and other crucial information to prevent malicious opponents from "stream sniping" or "queue sniping," which means that players watch a Twitch streamer to queue into the same games as them or target the streamer in-game. The games integrating streamer modes are games that were released quite recently and swiftly integrated these features into the game's

design. Other games, such as *Call of Duty: Warzone* (Infinity Ward and Treyarch 2020) and *Rainbow Six Siege* have yet to integrate these features into the game. In those cases, streamers can have to work with a "stream delay," which delays the live feed of their stream so to prevent giving other places the crucial information to stream or queue snipe. But, as highlighted in Case Study 1, those "stream delays" are affordances that are exclusive to Twitch Partners, reinforcing the hierarchy between content creators. It shows how *streamability* can affect game design and the other way around. Therefore, when I address the streamability of games, I am not talking about an essentialist classification of games, but rather about a dynamic interplay between platform, game, and players that actualizes what I would call the streamability of games as a cultural form.

Crucially, the assemblage of livestreamed play also consists of the platform's interface, its users, and the affordances. Forms of gaming capital that are exchanged on Twitch, such as in-game content, partnerships with content creators, or other forms of knowledge and distinction each make a tangible connection between Twitch and games. In many of those cases, the connection is made purely with the expressive quality of games, as it is actualized by players. I, therefore, make the initial assumption that the platform – through the platformization of videogame play and cultural production (Nieborg and Poell 2018) – conditions the player's agency. The implications of the platform must therefore be added to the assemblage of livestreamed play. In short, if the expressive quality of games is actualized in those platforms outside games where players evaluate, debate, or otherwise contribute to games, then it follows that platformization influences the game as a cultural form. In that sense, with the coevolution of streamable games, I focus specifically on the interplay between the material and expressive qualities of the livestreaming game, i.e., how livestreaming affects game design and vice versa. In order to put these theoretical perspectives into practice, I will take up a methodology that can be used to study such coevolutionary processes between digital games and livestreaming, as an interplay between technological capacity and actualization or social use.

2.2 Methodology

2.2.1 Grounded Theory Approach

This chapter addresses how to define the relationship between games and livestreams through the notion of "streamability." This concept has not yet been defined in a way that is sufficiently useful for the argument of this thesis, that is, to study the relationship between streamers and

games and how this affects cultural form. Rather than merely taking up previously established notions of streamability, I will develop a preliminary understanding of streamability specifically for the context of game livestreaming derived from a qualitative study of empirical data using a *grounded theory* approach, as first introduced by Glaser and Strauss (1967). Accordingly, I will refer to "data" as engagements between or assemblages of streamers and videogames, both in Twitch livestreams and outside of those instances. I will then analyze these streaming assemblages using a content analysis from which I develop a grounded theory of streamability. The content analysis of Chapter 1 will be utilized to define player-response in relation to streamability. As such, these materials are concrete descriptions of how players engage with games in livestreams. This data will be supported by other descriptions of other engagements from streamers with videogames, on Reddit, Twitter, YouTube, as described in news coverage, and as reflected upon by games themselves. Bringing together such anecdotal knowledge from the field itself with actual content analysis of streamers will build an expansive empirical and comparative account of the *streamability* of digital games.

The grounded theory approach (GTA) is necessary because there are no established categories for "streamability" that fit the intentions of this thesis. This approach is more of a methodology than a method (Anderson 2017) as it attempts to study the centrality of a concept, i.e. in this case streamability, "by telling the story of its emergence" (Morse 2016, 72). Glaser and Strauss (1967) oppose themselves to – what was at that time – sociology's overemphasis on the verification of theory and propose to allow theory to emerge from data. In Kelle's (2007) great summary of the principles and pitfalls of categorizations in the grounded theory approach, it is argued that the methodological challenge of the grounded theory approach lies in the reconciliation of Glaser and Strauss' (1967) two basic rules, "to abstain from forcing preconceived concepts, and to utilize theoretical sensibility in this process" (198). The ideal to approach empirical data with no preconceived theories, ideas or concepts whatsoever is thus a difficult one to put into practice. This methodological challenge is acknowledged by both Glaser and Strauss, from which point on they went their separate ways. The solution proposed by Strauss (1987) and later together with Corbin (1990) lies in the development of "coding strategies." They pose that concepts are central to this, as they can provide a vocabulary to voice shared understandings (Corbin and Strauss 1990, 47–48). Ultimately, the objective of a GTA is to develop an understanding of data derived inductively from data itself through a constant process of comparison and critical reflection. These processes of comparison and reflection must therefore be conducted through a process of *coding*, as a technique of "constant

comparison" (Glaser and Strauss 1967), which would provide the theoretical knowledge necessary for analysis while interfering with the inductive empiricism as little as possible.

2.2.2 Coding the data

For the method of analysis, I will use the qualitative content analysis to develop initial categories of "streamability" as working hypotheses. In part, these categories will be adopted from previous literature on games and play. The objective is to use these categories as tools to study data and to ask questions of the emerging data that are comparative by nature (Morse 2016, 73). These categories will provide the necessary vocabulary to establish what Corbin and Strauss (1990) call a *paradigm model*. It provides a common framework and strategy for conducting a critical analysis of the data. I will be revisiting the examples of Chapter 1 and adding new examples of other streaming assemblages (Appendix) to then assess these for relevant theoretical insights pertaining to the theory of streamability. This is similar to the *open coding* phase, described by Strauss (1987) as "scrutinizing" the data word for word in which the aim is "to produce concepts that seem to fit the data" (28). Then, I will initiate a second, more focused, data gathering phase in which I will expand on the previous observations, bring them into comparison, and develop a revised understanding of streamability on the levels of content, occasions, and game aesthetics. This phase is inspired by the *axial coding* strategy (Strauss 1987), an advanced stage of open coding in which attention is brought to one particular category or concept at a time: "this category forms the 'axis' around which further coding and category building is done and may eventually become the core category of the emerging theory" (Kelle 2007, 201). Concretely, this phase will take two of those *axes* to further analyze the data, namely by zooming in on *streamable contexts* and *streamable games*. In other words, by focusing on what happens *in* the game and what happens *outside* of it. Inside the game, I am addressing game aesthetics and gameplay. Outside the game, I will study the context of streamability, meaning the affordances of Twitch streaming, the platform ecosystem, and the culture of streaming.

2.3 Analysis of streamable contexts: what makes "content" worthy of livestreaming

The analysis of this chapter, as mentioned above, will be divided into two parts, this one being the first. This section focuses on *streamable contexts* in an attempt to study what makes "content" fit for livestreaming, subdivided into various sections dedicated to specific contexts.

The next section, 2.4, will focus on *streamable game aesthetics* in a study of how game design affects livestreaming and vice versa, which will be, like this section, divided into a couple of sections dedicated to specific situations and assemblages.

In this section, I will argue that what makes content worthy of livestreaming – contrary to what Sjöblom et al. (2017) argued, is not a situation of "the medium is the message," which declares that the type of content (e.g., speedrunning or roleplay), by definition, matters more than the game that is being played. Instead, I will argue that the type of content creation is the result of a coevolution and interplay between livestreaming and the respective digital games. Therefore, I will emphasize that streamability is best addressed through different streaming assemblages, meaning that it is the dynamic result of relations among its elements. These elements will consist of various sociocultural contexts, affordances, and expressions that affect "content" in concrete ways. Then, in the next subchapter, I will show how game design affects content and vice versa.

Context, in streamable contexts, refers to all the practices of streamability outside the game itself, whether this is the Twitch stream itself as content or the hype and occasions that make it possible, topical, relevant for the community, and profitable. Streamable contexts will be analyzed by focusing on the UGC and their creators on platforms such as Twitch in relation to streamable games. This will be done by zooming in on the affordances of livestreaming (Postigo 2016), thus studying technological properties and their use. The idea here is to study the data with regard to the question of how livestreamed gameplay becomes streamable "content," meaning content that is "worthy" of streaming (Postigo 2016; Scully-Blaker et al. 2017). I will use literature on sociotechnical systems, affordances, and previous studies on content creation on Twitch as conceptual tools for this analysis. Context is also the overall sociocultural environment that makes games and streams streamable. Using literature on spreadable media, I will contextualize the practice of content creation with regard to the overall ecosystem of platform power, digital games, and the principles of UGC creation. By gathering materials that address the context of why people stream, why games are streamed and why people watch, this subchapter will provide an overview of the sociocultural dynamics of streamable contexts.

2.3.1 Which game does a streamer stream? Finding one's niche and being in charge

In order to become successful as a streamer, one has to find a way of making content that is "Twitch worthy" or streamable. Streaming successfully on Twitch can rely upon self-branding,

in which some streamers might choose to play a role or character (Woodcock and Johnson 2019). Streamers have to find their *niche*, also in relation to the overall platform ecosystem. Think of the *niche* as an ecosystem metaphor, meaning that there is a larger livestreaming ecosystem consisting of various content creators, users, games, and technologies. For content creators, finding such a niche within this ecosystem can be based on the games they play, how they play them, or simply based on their personality or identity performance. Take, for example, the content creator "City Planner Plays," who is a city planner in real life playing city builder games for content creation. How he plays games is adapted to his persona/niche. As a result, he plays the city planner game *Cities: Skylines* (Colossal Order 2015) in a way that he feels is realistic to his experience as a city planner. For example, he places water pipes underneath the roads. He often accompanies this action with the statement "because that's where they belong" – even though the mechanics of the game does not prescribe players to do so (City Planner Plays 2021, 3:04 min). Similarly, content creators can also find a niche based on their identity, subculture, or even health status. Examples of those types of niches are drag streamers who stream in drag, or streamers with specific health statuses making unique content attuned to that status. One example of the latter is the Twitch streamer and YouTuber "Sweet Anita," who has Tourette's Syndrome and plays games with (and regardless of) her condition, or makes themed videos about her condition. These examples are characteristic of what I call "the livestreaming game," meaning the metagame streamers play in relation to the livestreaming ecosystem. I understand this livestreaming ecosystem as one in which streamers, audiences, games, and various technologies coexist. Streamers have to find their niche and adjust themselves to this ecosystem in order to survive, or even thrive.

Regardless of which niche a content creator may find, the relation between streamer and game is of the utmost importance for the content of the stream. It is for this reason that Gandolfi (2019) argues that streamers/players feel the need to manage their own streams and they fear the unpredictability of play when they are not in charge (845). "Being in charge" of one's stream is thus desirable for making *streamable* content. In a Reddit discussion between streamers on "finding your niche," one commenter notes that the amount of "downtime" in a game can factor into finding one's niche:

> Once you have those strengths charted out, use that info to figure out what sort of games/activities complement them. Are you good at maintaining off-topic conversations? Play games with plenty of downtime! Are you an engaging storyteller? Play narrative-heavy titles! Can you get into a character? Get into games where you can

> roleplay! Find a place on Twitch that fits you as an entertainer, and plays to your talents. (u/Shado_Temple 2018)

The mention of "downtime" as an important factor for finding one's niche is an interesting perspective. Downtime refers to times where the gameplay comes to a halt, caused by loading screens, long stretches of dialogue in-game, or other things that interrupt the pace of the game. In relation to finding one's niche, downtime means that different games make for different types of content. The way it is described in this example, more downtime calls for more off-topic conversations to keep the stream entertaining, whereas less downtime would mean the opposite and relies more on in-game performance. This resonates well with the difference between *playing for* and *playing along with* (Scully-Blaker et al. 2017), as more downtime could give more room to interact with the audience and the other way around. Downtime is presented as an issue that potentially needs to be overcome in a stream in order to remain in charge of one's stream. Scully-Blaker et al. (2017) mention that downtime is handled differently on Twitch than in YouTube videos because Twitch streamers cannot just edit "downtime" out of a livestream, which YouTube content creators can. They continue by arguing that streamers cannot *edit* their content, but they can *curate* what they do, as an editorial practice (Ibid., 2030). If the Twitch stream is seen as a performance, the game becomes functions as a "prop" for their on-stage presentation of the self. Following Goffman's (1978) reasoning on the performance of the self, the game as a prop is not the end-product of the performance, but it is part of the *setting* of their stage performance. Being in charge is thus about taking ownership over the content, not necessarily by editing the content in any way, but by adjusting type of content – the performance – to the games they play.

2.3.2 Backseating, metagaming, and (un)warranted participation between streamer and audience

This section will delve deeper into the interaction between streamers and their audience, particularly through a study of the affordances and sociotechnical system of livestreaming. Twitch has an interesting interface and set of affordances that help navigate different types of content on the platform. "Tags" and "categories" provide opportunities for streamers to be explicit about the content they want to produce. Of particular importance for this is the question of whether streamers *want* their audience to be involved in their gameplay. In relation to the first chapter, do streamers want to *play along with* their audience, merely *play for*, or none at all? Using tags, streamers can categorize their streams and manage their brand. Examples of

tags are those that specify the genre of the game, such as "Action" or "Adventure," tags that indicate the preferred language, but also more specific tags that specify the kind of content (i.e., "Roleplay" or "Speedrunning") or tags that specify the affective dimension of the stream, such as the "LBGTQIA+" tag. These tags are listed alongside stream titles, both in the search interface and when watching a stream (Figure 9). Although they do not consider the role of tags explicitly, I argue that Tags function as what Sjöblom et al. (2019) call the *social affordances* of Twitch streams. Tags are important affordances for streamers to build and visibly manifest a profile and specify their relationship with audiences and games, hence the *social.* Furthermore, they allow content creators to further diversify their content with regard to the livestreaming ecosystem. More so than setting the tone for the content of the stream, these tags can also specify the relationship between streamer and game, for example with tags that indicate a specific playstyle (e.g., "speedrunning," "roleplay," or "ranked"). On the other hand, this potentially adds to the commodification of streams and content creators, as they become reducible to the tags and categories in which they list their content. That way, the affordances of the platform allow users to scroll through catalogs of streams as if they are browsing products in a webshop.

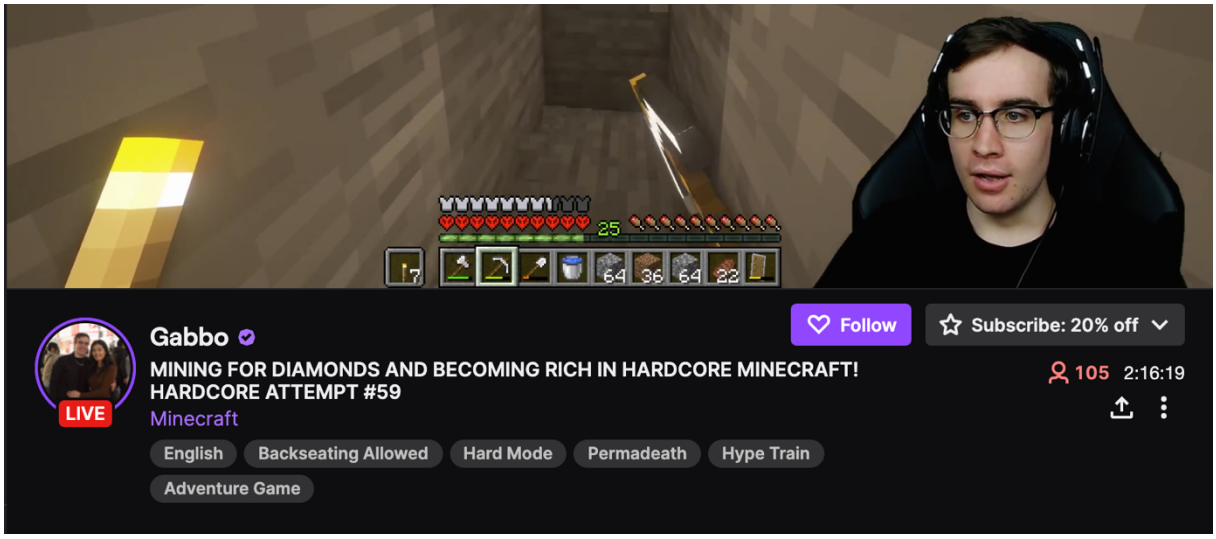

Figure 9 Connection between stream content, the title, and the tags (top to bottom). Captured by author from stream on 8 April 2021 (Appendix).

The tags "Backseating allowed" and "No backseating" are particularly interesting in relation to the player role(s) specified by the social affordances of Twitch. Backseat gaming, or "backseating," refers to the practice of telling other players what to do in the game. This happens in-game, where teammates tell other players what to do while spectating or playing with them, but it has since also emerged on Twitch in the form of audience members telling the streamer what to do. Backseating can be seen as a direct form of secondary play (Newman

2002), as a practice in which audiences take the non-controlling backseat to the gameplay by engaging with the game in a way that makes them play along with the primary controlling player. Backseating is a recurring topic of discussion in the streaming community, which explains why streamers could use either tag in their own right, depending on personal preference. The implications of the term "backseating" alone remains a tug of war, a power struggle between streamer's agency and that of their audiences. The different interpretations of the term "backseating" therefore also matter, in the sense that it can function as a code of conduct for audiences, but conversely also as an invitation to participate. This does not mean that someone with the tag "no backseating" does not want any help whatsoever. Instead, one streamer summarizes backseating as "*unsolicited* help in any form" (u/rozzingit 2021; emphasis added), ruining the player's chance to figure things out on their own by giving away spoilers in story-based games or revealing other details for the streamer-player. Crucially, *backseating* thus manifests itself as the downside to *tandem play* (Consalvo 2017; Scully-Blaker et al. 2017). It is a point of tension between the streamer's think-aloud method and the audience mistaking this for soliciting help. As is explored in the first chapter, there are many ways for the audience to get involved in livestreamed play as a secondary player. Streamers have a small set of affordances they can deploy to either counter backseat gamers if they are deemed harmful to their content, or promote such activities. In any case, backseat gaming is a practice that reveals much about the kind of content that streamers produce in relation to a videogame, and the way they want their audience to interact with it. It manifests itself in many different ways, depending on the streamer, and depending on the game. Crucially, it exemplifies an important aspect of streamability; namely the possibility for audiences to become participants in the gameplay themselves. It is streamable in the sense of *spreading* the content to audiences, thereby allowing them to participate in the content themselves.

In the case of *GTA V* NoPixel and other roleplaying, backseating is considered to seriously hurt the streamability of the game. In the context of roleplay, this is called 'metagaming,' which is to apply or reveal real-life knowledge to the fictional setting of roleplay. This is a different use of the term *metagaming* as I have used it earlier in the thesis, in which it was used to describe practices in which games are used as tools, equipment, or practices for games outside the game (Boluk and LeMieux 2017). Such practices emerge in various ways, in cheating, creating walkthroughs, speedrunning, but also roleplaying in *GTA V*. The way 'metagaming' is used in the community is slightly different, and signifies the application of real-life knowledge that isn't gathered from the practice of roleplaying. In NoPixel, this can be

done by streamers as (neglective) roleplayers, but also by backseating audience members who reveal knowledge to the streamer that they, in the role that they play, cannot know. Metagaming, in roleplay, does not value *roleplay* as the main goal of the stream. Instead, it reveals the desire for audiences to become actively involved in the stream, or for roleplayers to gain an advantage over others. Metagaming as backseating, in this context, is considered toxic and harmful behavior and violates the implied social contract between streamer and audience. It subverts the rules of the game. In a quick analogy between this and Caillois' (1955) classification of games, metagaming in roleplay indicates a tension between the primary roleplayers favoring *mimicry* (pretense) and make-belief on the one hand, and metagaming audience, as secondary players, favoring *agon* (competition) on the other. Streamers can deploy several affordances to deal with potential backseat gaming and metagaming. Using tags, they can be explicit about their intentions. The tags "no backseating" and "no spoilers" indicate that the streamer is most likely new to a game and wishes not to be disturbed in that experience. Streamers can also set up commands in the chat, which generate an automated response set up by the streamer and their moderator(s). These commands can then be used by chat moderators and other audience members to notify backseat gamers of their behavior (Figure 10). In the example below, taken from Kiwo's *GTA V* roleplay stream, she – as the fictional police officer "Lauren Forcer" – explores a crime scene in search of a suspect. When she is investigating an abandoned car near the scene, a chatter recognizes the car as belonging to the character of another streamer, Summit1g. This is an example of metagaming by the audience, as the audience member shares knowledge with the streamer that does not come from the fictional universe. Kiwo, in turn, makes clear that this is metagaming and that she, as Lauren Forcer, does not have any knowledge of this.

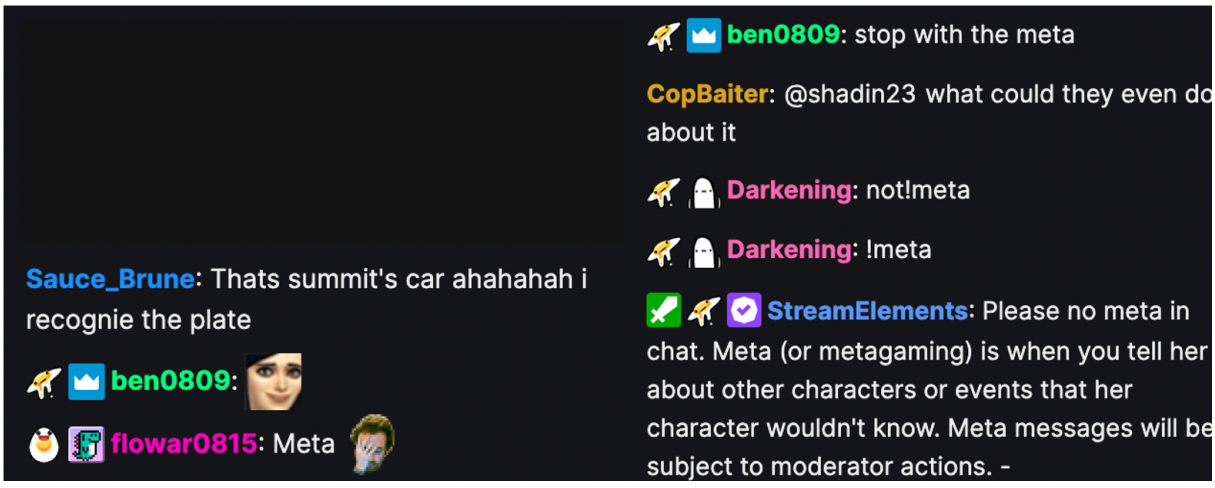

Figure 10 Extract of Twitch chat displaying a discussion on metagaming by audiences in roleplay. Captured by the author from a stream by "Kiwo" streaming as "Lauren Forcer" in GTA V roleplaying server No Pixel 3.0 on 21 February 2021.

The example indicates a tension arising between *playing for* an audience and *playing along* with the audience (Scully-Blaker et al. 2017), the latter in this example being undesirable for the purposes of *streamability.* Streamable content is about the unique user-generated transmission that roleplaying offers with each streamer. Although the modus operandi of *streamability* is highly performative by nature, elsewhere described as the "think-aloud" technique (T. L. Taylor 2018, 75), this performativity should not be mistaken for interactivity, in the sense of *playing along with*, at least not in the case of *GTA V's* roleplaying community. Content is *streamable* because it is made *for* the audience, which is represented by its performative style but not necessarily made for the audience to play along with. While it is important to have an audience in mind, the way streamers envision the role of the audience is completely personal. Streamability thus remains in the hands of the creator, not the audience.

2.3.3 Stream sniping and malicious practices of metagaming

Metagaming has various manifestations. As highlighted in the earlier section, metagaming can be both beneficial and harmful to the playing and streaming experience of a game. Roleplay itself can be a form of metagaming, as seen with *GTA V*'s NoPixel community, but roleplay can also be harmed by backseating audience members as metagamers. For this reason, the relation between metagaming and streamability is ambiguous, as metagaming can be both beneficial and malicious to streamability. It is for this reason that I take up the assemblage theory, in which I address some specific relations that emerge between the two. The case of NoPixel features a particularly prominent example of how this emerges within communities of people. There are also examples that illustrate the ambiguous relation as manifested through the interaction between people and technologies.

Earlier in the thesis, I addressed how *Valorant* (Riot Games 2020) and *Apex Legends* have integrated "streamer modes" in their games that attempt to counter "stream sniping." Stream sniping – also referred to as queue sniping – is a form of metagaming in which players use the information given by a stream to either attempt to queue up with that streamer and/or to target the streamer once in the game with them. It is considered a bannable offense by Twitch (2021), who considers stream sniping a form of cheating when conducted by streamers. Twitch offers a tool to deal with stream sniping, in the form of a stream delay. This is often deployed with competitive tournaments, in which audience interaction is less important. Despite that, Twitch *only* offers this tool to Partnered streamers, not to Affiliates or regular streamers. This way, the affordances of the platform already create a social hierarchy among content creators,

possibly making certain types of content or games that are more susceptible to stream sniping less desirable for non-partnered streamers. The way individual streamers respond to this is diverse.

The former *Rainbow Six Siege* professional "Pengu," (Appendix) for example, has a command set up in his chat stating that he will not play the "ranked" game mode until the game integrates a streamer mode that protects them from stream snipers therefore demanding coevolutionary progress between games and livestreaming. Another streamer, "ShivFPS," (Appendix) does not use streamer mode during his *Apex Legends* gameplay for most of his regular streams and instead always queues with random players, thus doing the complete opposite of pre-determining his game lobbies. In this case, *not* using a streamer mode allows the streamer to remain public in-game, making him both a target to stream snipers as well as able to queue with and against his audience members.

As is put forward with the assemblage theory, these examples demonstrate that it is difficult to formulate one coherent idea of what defines streamability. The sum of the relations reveals that streamability emerges in different ways based on the game, the streamer, the audience, and other contextual elements. Following Karppi and Sotamaa's (2012) claim that assemblages are formed in coevolutionary processes, it means that, for streamers, the *material* qualities of the game can affect the *expressive* practice of livestreaming, but livestreaming can also affect the game. The examples above demonstrate that streamers are given various tools to deal with potential obstacles for making streamable content, such as stream snipers. These tools, however, are sometimes distributed unevenly based on the streamer's reputation. Moreover, examples such as the one of ShivFPS show that just because a certain affordance exists, does not mean that it is necessarily beneficial to the streamability of content. As a result, streamers are to some extent dependent on the affordances of both Twitch and the games they play to make their content *streamable*, but what makes content truly streamable is the ability for a streamer to express themselves in a unique way based on the material qualities of a stream.

2.3.4 Remediation and the streamability of content *beyond* Twitch

Remediation – as a characteristic of contemporary media – is the representation of one medium in another medium (Bolter and Grusin 1998, 45). With this, I adopt their sense of *hypermediacy*, one manifestation of remediation, which is a "style of visual representation whose goal is to remind the viewer of the medium" (272). This particular cultural logic behind remediation considers content – particularly web content – susceptible to remediations in other media (31).

Although Bolter and Grusin addressed this issue over two decades ago, these concepts remain applicable and relevant. In this case, I argue that the streamability of game livestreams is best characterized as what they called the "windowed style," as media of "random access" without a beginning nor an end (Ibid.). To illustrate this, I give two examples of how *streamable* content is remediated. Here, I follow the idea that streamability recognizes the importance of diversification of media texts, particularly as facilitated by the communities of participants that do this. I argue that remediation of content can contribute to diversification, in this case, like spreadability, mediated through digital (social media) platforms.

An example to illustrate this is the way that the *GTA V* NoPixel community is monitored on other platforms, most prominently Reddit. In the subreddit "r/RPClipsGTA," users can post clips of funny or interesting roleplaying moments. That way, the subreddit and the affordance of "clipping" content in Twitch streams point to forms of remediation that contribute to the diversified and dispersed nature of streamability. Clipping is primarily an audience-driven practice in which viewers can manually "clip" smaller fragments of streams that will be saved on the streamer's channel. This way, the audience does eventually become involved in the content of streamers. This way, audiences can become involved as remediators of content by clipping interesting moments and by sharing this on other platforms.

Consequently, the subreddit also became a discussion forum about proper and improper forms of roleplaying (see u/[deleted] 2021; u/spamazor 2021; u/Average-Neat 2021). Debates centered around a few low-effort role-players harassing other role-players on stream, metagaming, or breaking the rules in other ways. As such, the subreddit has become an important discussion forum for the audience to become involved in the roleplay. The *hypermediacy* of this subreddit shows a back-and-forth discussion about the rules of the role-playing metagame. It is hypermediated in the sense that participants are constantly reminded of the fact that GTA roleplaying is a staged performance. Although passive as viewers of role-playing streams – as to prevent metagaming or interfering with the roleplay – audience members become active watchdogs of the NoPixel community on Reddit. Under the "Drama" tag in the subreddit, Redditors can post anything they believe is worthy of discussion with regard to the rules of roleplay (u/UltraPlayGaming 2021). They qualify proper and improper forms of roleplay. Often, improper roleplay when the game is played as if it is a game, not as if it is real, which is the intention of roleplay. They use terms like "No Value of Life" (NVL) and "Vehicle Death Match" (VDM) to quickly identify specific forms of improper roleplay. From the roleplaying's point of view, a character has only one life and they must value this by

behaving accordingly – instead of *GTA*'s own mechanic where one simply respawns after death. NVL simply means that the roleplayer behaves as if they could simply respawn and, similarly, VDM means that roleplayers drive vehicles as if driving recklessly isn't dangerous to the life of the character. In that way, a rule external to the game's mechanics fundamentally changes the way the game is played and streamed.

Both examples highlight how remediations work in favor of streamability. In 2.1.1., I explained that I consider *streamability* a hybrid between centralization of content and the potential of users to become active participants in the creation of content. In this case, content is streamable *because* it is centralized, on NoPixel so that every roleplayer can play in the same fictional world, but also on Twitch as a platform to transmit the content to audiences. It is also streamable because it allows participation through remediation in various ways. It is in line with the "sharability" principle (Jenkins, Ford, and Green 2013, 197–8), which is reflected by audiences who remediate content in order to engage more deeply with the game, in this case eventually even affecting the actual practice of roleplaying itself by acting as watchdogs. These audiences share content not because they are expected to, but because they *want* to in order to show their dedication to game, the content creators, or the community. In this case, the spreadable and diversified practices of remediation are enhancements to streamability of the NoPixel roleplaying community. There are, however, examples on Twitch where diversification through remediation is not embraced as much.

2.3.4.1 Exploring the tension between the remediation and centralization of content

The discussion between centralization and diversification of content reveals itself quite strikingly with regard to discussions about spectatorship and distribution of content. Contrary to how NoPixel *spreads* out content across different roleplayers as independent content creators – a reference to spreadability (Jenkins, Ford, and Green 2013) – most esports games and events are *centralizing* content.

Esports events are highly streamable occasions potentially skyrocketing the viewership numbers for particular games. Twitch's interface ranks games (as stream "categories") based on concurrent viewers. The more concurrent viewers, the higher a category/game is listed at that particular moment. Having a consistently high number of concurrent viewers is thus, in a way, a marker of the *streamable* game on Twitch. Esports events are crucial opportunities to generate such high viewership (see Figure 11). With regard to esports events, some games such as *Valorant* have allowed streamers to do a "shared streaming" practice where they host the

main channel's stream. For the streamers, this is an opportunity to organize a collective viewing with the audience, potentially adding some level of interactivity to the event. Such engagements consequently draw in audiences to *Valorant* as a category, although not all to the same stream.

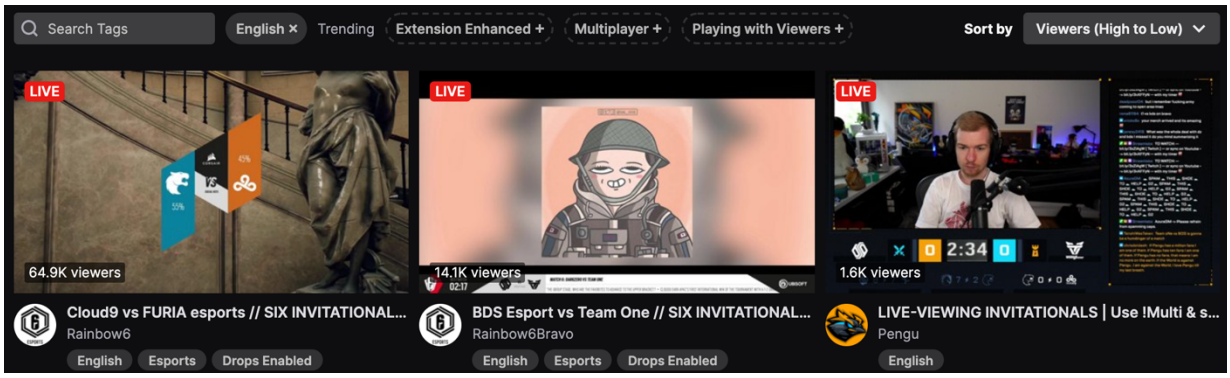

Figure 11 Distribution of viewership of Rainbow Six Siege during an esports event. Two main esports channels taking the majority of viewership, with a "viewing party" by streamer Pengu taking a smaller portion. Screenshot by author, 13 May 2021.

In a series of Tweets between December 2020 and May 2021, the former *Rainbow Six Siege* pro-player "Pengu" – who we saw in Chapter 1 – reflects on the situation where *Rainbow Six Siege* disallows these "co-streams" because the game allegedly sees these practices as competition to *their* viewership (see @Pengu 2020; 2021). Pengu argues that allowing co-streams could expand the viewership in the game as a whole, as a category on Twitch, not just in *Rainbow Six*'s own channel, "It's help, not a battle," he states (Figure 12). It points to a tension between *stickiness* and *spreadability*. Stickiness aims for centralized distribution, "capitalizes on the easiest way companies have found to conduct business online," and, "it privileges putting content in one place and making audiences come to it so they can be counted" (Jenkins, Ford, and Green 2013, 5). Conversely, spreadability aims for the opposite by recognizing the importance of the input of individuals and encouraging practices like co-streaming that would diversify the content. (6). In this case, the tension between stickiness and spreadability points to a conundrum in the Twitch ecosystem, in which remediations – like co-streams – do not necessarily aid game developers in a direct way. Instead, a game's audience would be dispersed across various individual streamers, which would increase the total viewership of the game as a Twitch "category," but not necessarily a game's channel. Games like *Valorant,* on the other hand, exhibit the potential of spreadability as an aesthetic where the potential of audiences to create meaningful connections between them and the game is recognized and operationalized. I argue that an example of a streamable distribution strategy is *Valorant*'s, in which the potential of content creators is recognized as diversifiers of content that aid a game's livestreaming ecosystem. Although this example displays the potential of

spreadable strategies to become more *streamable* in the sense that it promotes and facilitates unique content creation, it must also be noted that a sticky strategy possibly allows for a more streamable approach for game developers, as it offers a central venue to distribute their event to a large number of users.

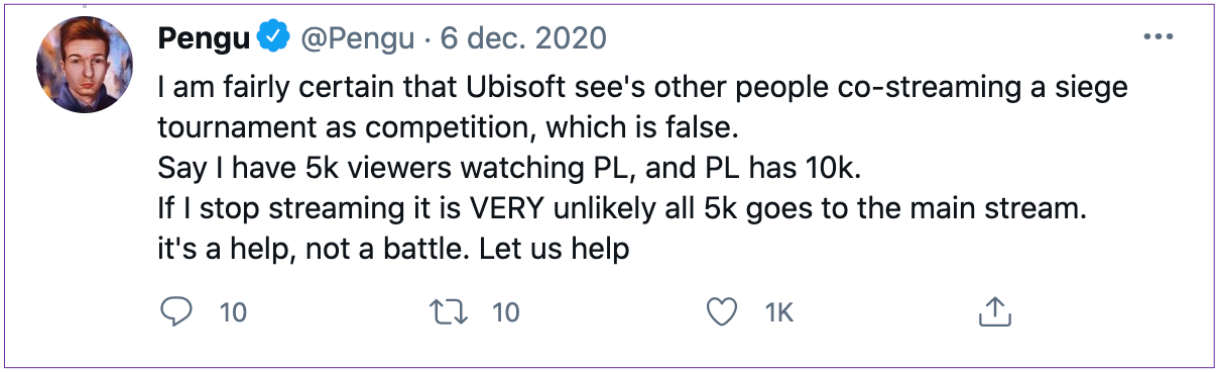

Figure 12 Tweet by Pengu about co-hosting esports streams. https://twitter.com/Pengu/status/1335711131537723392?s=19.

2.3.5 Supporting the community: "raiding," hosting, and helping fellow streamers

In many examples, I talked about the livestreaming ecosystem. This has been a deliberate term as it signifies the coexistence of various actors – both human and nonhuman – in the contested space of livestreaming. How streamers engage in relationships with games is therefore important to their survival in the ecosystem, but so is their relationship with the streaming community, i.e., other streamers.

Streamers can "raid" other streamers. This is something that happens at the end of one stream, when the streamer decides to take their audience to another streamer. Essentially, a "raider" hosts another streamer on their other channel. The way it works is that a streamer selects another streamer and shares a chat message they want the viewers to paste into the channel upon arrival (see Figure 13). The term "raid" is itself a metagaming term and refers to a gameplay strategy popularized in massively multiplayer online roleplaying games (MMORPGs) in which a large number of players performs a coordinated attack on an objective (Finch 2020). The performative value of this term, again, has certain implications within the gaming community. A raid is not a raid without an overwhelming sense of numbers. Therefore, the common idea with raids is to support streamers with similar or smaller followings, in terms of size and in terms of the type of content. As a result, raids, through a sudden spike in viewership, make for interesting streamable occasions.

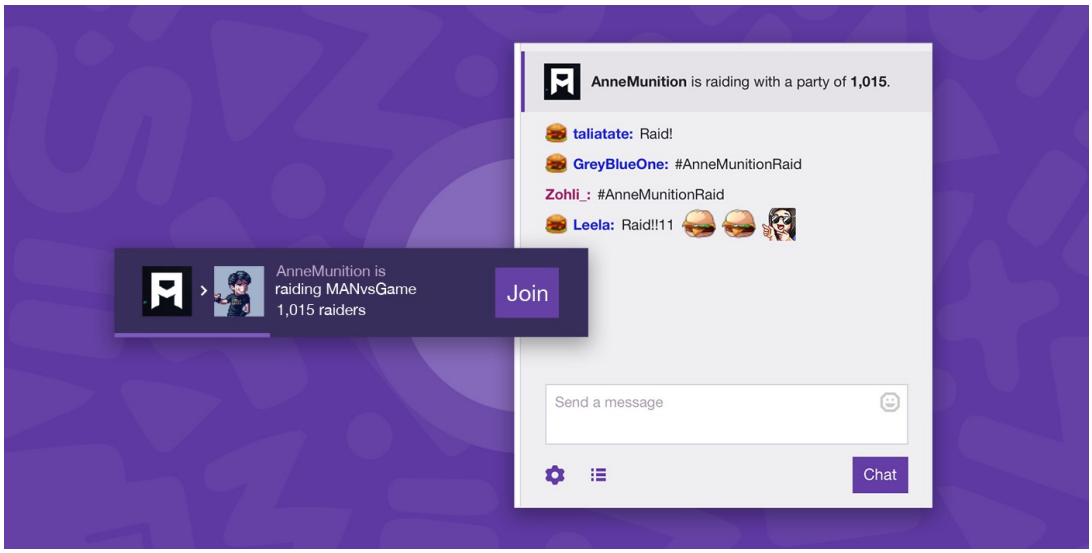

Figure 13 Illustration of how raids work. It displays a pop-up in the raided streamer's chat and is often accompanied by audience members spamming a specific "raid" message. https://help.twitch.tv/s/article/how-to-use-raids?language=en_US.

It is also relevant to mention that this is an affordance that emerged bottom-up in the community. Using the option to host other streamers, content creators had been "raiding" other streamers for a while before Twitch facilitated this function to streamers. It gives a good impression of the agency of content creators to create such performative emerging vocabularies. The idea of "raiding" as opposed to "hosting" gained significant performative value in the community, which prompted Twitch to facilitate this practice. Consequently, it shows the relative ease with which the platform can regain its (platform) power. Twitch exerts its power by commodifying a user-driven social practice of raiding other streamers. Although seemingly harmless, once this mechanic had been integrated, the platform transformed an essentially bottom-up practice into a mechanism of automated power. According to Srnicek, the crucial source of platform power is *positioning* (Srnicek 2017). In this case, by providing the infrastructure for mediations of the raid, "platforms," such as Twitch, "place themselves in a position in which they can monitor and extract all the interactions between these groups" (255). From this position of power, Twitch has provided content creators with their raiding system.

Raids are often performed within the same communities of games and content creators. Because raids often happen within communities, they can be seen as streamable contexts. In examples where raids happen within specific streamer communities, such as specific streamer collectives, the raids can keep the audience presence within that specific streamer community. Examples of this are found in the data for Chapter 1 (Appendix), with one drag streamer, "Charleszyyy" raiding a "fellow Queen," the drag streamer "AnnieKrevice," despite the other playing a different game. Although they did not know each other personally, the raid was an opportunity to keep the audience within the drag community. In other examples, raids happened

within a specific game's community. In those examples, the same streamable *context* is presented with the sudden spike in new viewers. In all of the raids, it presents an opportunity for the raided streamer to do something fun, to introduce themselves, or simply to talk to the raiding streamer on stream. Each of those practices shows clear incentives to keep the new audience engaged. Other examples are when the drag streamer AnnieKrevice went on to introduce new viewers to the stream's community; the *Rust* streamer "Hutnik" introduced the raiding streamer to a song that was popular in his community resulting in virtual dance party with many audience members spamming emotes or repeating song lyrics; and, "TUR_Grise" was raided by a fellow *Dead By Daylight* (Behaviour Interactive 2016) streamer, who he promoted in his own stream even after the raiding streamer left the stream (see Appendix). In each of those examples, we can see a different kind of response emerging to the raid. It thus provides the streamers in question with an opportunity for a streamable occasion, but how they approach it is up to them. *Streamability*, in terms of its context, is thus not a defining phenomenon. Instead, it merely provides a unique opportunity for streamers to do something special due to a sudden spike in viewership. The nature of this raid often determines the resulting action from the streamer.

As a sociotechnical system, practices like raiding and hosting show that it is an interplay between humans and technologies that makes for streamable contexts. In this case, affordances like "raiding" and "hosting" – at least as designed features – emerged in response to the clever use of other affordances by streamers. Zooming in on those practices reveals the creative interplay between humans and technologies in content creation. Following Postigo's (2016) description of technical and social affordances, the technical affordances of raiding are that it facilitates a seamless transition for an audience from one stream to another, while the social affordances are that it allows for the emergence and consolidation of streaming communities and ecosystem as a whole. As a result, raiding can make for exceptionally streamable contexts as it shows an awareness of content creators of the overall contested livestreaming ecosystem, for example by deliberately keeping 'their' audience within 'the community.' It reflects what I phrased earlier as the ideals of streamability, following literature on spreadability, that it embraces the interpersonal interactions among participants, which contributes to the diversification of media texts (Jenkins, Ford, and Green 2013, 4–7). Here, the possibility for streamers to create communities around games and content creation contributes to this purpose.

2.4 Analysis of streamable game aesthetics: how game design shapes game livestreaming and vice versa

This section is the second part of the analysis, in which I will move from what happens *outside* of the game to what happens *inside* of the game in game livestreaming. I will study *streamable game aesthetics* by addressing how game design affects livestreaming and vice versa.

As highlighted in the previous sections, *streamability* depends on many different contexts and manifestations, from platform-facilitated affordances such as the raid to the bottom-up emergent vocabularies of streamers and audiences. In some cases, these practices are initiated by users, thus displaying the bottom-up potential of streamability. An example of this is highlighted with the *raid* that was only integrated into the platform's infrastructure when the streamers of Twitch prompted the platform to do so, thus displaying Twitch's position granting platform power (Srnicek 2017). Like Twitch, several game developers have also attempted to improve the *streamability* of their games, whether through streamer modes that protect streamers from toxic players, streamer-friendly interfaces that show player input to audiences, or through games that are designed specifically *for* streaming. This part of the thesis will delve deeper into these examples, by studying how game design shapes games and game livestreaming as a cultural form. With this, I address how streamability, as a cultural practice, affects game design and the other way around. I will study how this cultural practice is materialized in game design, but also how this particular materialization contributes to the practices of livestreaming, "how the material of the game becomes expressive" (Karppi and Sotamaa 2012, 422).

This part will take the game as a tool for making streamable content. This idea of the game as a tool will be explored by a consideration of game design as *affordances* for streamable content. Doing so, it will form a continuation of Chapter 1, in which I highlight the emergent narratives and the idiosyncrasies of (livestreamed) gameplay. The focus of this analysis will be on game aesthetics as they emerge in various livestreaming assemblages. These livestreaming assemblages are approached comparatively, in which the focus on idea of "the aesthetics of play" – or "streamable game aesthetics" for that matter – is not to define essential traits, but to provide an empirical and detailed account of streamability as it is put in practice.

2.4.1 Emergent design: streamer modes

As streaming is becoming increasingly important as a cultural as well as an economic factor in the contemporary games industry, streamer modes have become recurring features for a larger

variety of games. As briefly shown in earlier sections, many multiplayer games have integrated streamer modes to prevent malicious practices such as trolling, stream sniping, and queue sniping. Essentially, such streamer modes are designed game features that emerged to protect the playing experience of streamers. But whereas the streamer modes in *Valorant* and *Apex Legends* primarily sought to protect the streamer from other players, this section will zoom in on a different kind of streamer mode.

An example that illustrates a different kind of streamable game design is *Cyberpunk 2077*'s (CD Projekt Red 2020) streamer mode, which disables copyrighted music and nudity in-game in order to protect streamers from copyright strikes against their content (Marshall 2020). Although seemingly a clever development process to preemptively design a game with livestreaming in mind, it illustrates the power of the platform in which games have to adjust their design to fit the criteria of a *streamable* game (in the technical sense), not necessarily the other way around. In this case, the platform's power is reflected by Twitch's positioning as ruler over the distribution of livestreamed content. It is characteristic of the endless outsourcing strategies deployed by digital platforms, described by Srnicek (2017) which, in this case, is illustrated by Twitch's reluctance to provide any form of protection against copyright violations. As a result, both streamers and games have to bend over backwards in order to make their content streamable. "The platforms, meanwhile, simply siphon off a rent from every transaction they facilitate" (Srnicek 2017, 257). While these streamer modes are often examples of streamable game design that benefits content creators, they are frequently made possible by Twitch's monopolistic and exploitative attitude towards providing real sustainable solutions for the future of game livestreaming. This particular streamer mode is just one small example of a larger problem on Twitch regarding copyright resulting content takedowns (see Carpenter 2020; Grayson 2020; Stephen 2020). Streamers are sometimes expected to manually check each saved stream or clip for copyrighted material while Twitch provides no form of support, not in terms of their digital infrastructure, nor the form of transparency in their communication and terms of service.

The streamer mode, in this example, is thus a feature that emerges in response to the interaction between streamers and games as mediated through Twitch. *Cyberpunk 2077*'s streamer mode hardly affects the playing experience itself but is aimed at the very capacity of livestreaming itself. In this example, *Cyberpunk 2077*'s streamer mode approaches the game primarily as an interface for streaming. Streamable game design, in this example, is thus aimed at making something technically suitable for livestreaming. Twitch, in this configuration, is

seen as an obstacle, both for streamers and the game developers; for streamers because they have to play differently in order to prevent being taken down, and for *Cyberpunk 2077*'s developers because the game in its regular state is not fit for streaming due to copyright issues.

2.4.2 Interfacing streamability: designing for interaction

In this part, I will address the design of streamable interfaces. The term "interface" is a deliberate one. It refers to the humanities approach to interfaces, interface theory, in which interfaces are defined not as static things or objects but as dynamic spaces of relations. As Johanna Drucker (2011) argues, such an approach redirects the attention "to the specific relations between properties and affordances of electronic environments *within* a system of co-dependent relations of production" (3). The choice for this term and this approach is a continuation of my adaptation of the assemblage theory, which, like interface theory, focuses on relationality. Consequently, I take up the notion of *interfacing* as a process, a term used in interface theory that denotes the cultural practice of making these relations and sheds light on how the technology is shaped by sociocultural processes (De Lange, Merx, and Verhoeff 2019). Ultimately, I will explore how games, Twitch, and the affordances of livestreaming can be seen as interfaces for livestreaming, that is, as technological and socio-cultural processes that shape the interactions between streamers, games, and audiences.

As is revealed in the excerpts of livestreams in Chapter 1, games can reveal much information to both the streamer/player as well as the audiences as secondary players. *Streamable* interface design is thus something that makes it easy to communicate what happens on screen to the viewer. *Chess.com* stands out as an example of transforming the game into a streamable interface (Figure 14). With *Chess.com*, streamers can use their mouse to visualize their moves to themselves and their audience before actually doing it. These are examples of interface design for livestreaming mentioned by Sjöblom et al. (2019, 26), in which the screen layout of the game has been planned with livestreaming in mind, thus visualizing input and leaving plenty of space for additional overlays. It affords an interesting case of *streamable* content, in which the streamer can narrate almost exactly what they do and visualize this at the same time.

Figure 14 Hikaru Nakamura displaying how Chess.com allows to visualize moves to the audience. Screenshot captured by author. https://www.youtube.com/watch?v=fioNpGlZO1A.

In a stream by Asya Belenkaya streaming on the Twitch channel ("TheBelenkaya"; Appendix) she runs with her sister and chess grandmaster Dina Belenkaya, I observed how this interface allows for instantaneous feedback between the primary player and the secondary players as *backseaters* because of the way *Chess.com* visualizes player input. In that example, Belenkaya was streaming the games she played *with* the audience members that she streamed *for* her other audience members. In this case, the game displays the potential of *interfacing* streamability, that is, the creation of a process and specific relationality between different kinds of users, in this case for the purposes of streamability. It does so by giving audiences all the information about the gameplay thereby allowing for easy participation as secondary players. The streamer-player is given full freedom to control their play and to visualize their input. In this case, *Chess.com* allowed Belenkaya to rewind the game to the moment where her opponent resigned. "Why did you [opponent] resign here?" she asked, to which two audience members responded in the chat by explaining their take on the situation. In this case, *Chess.com* partly eliminates many differences between the *controlling* primary player and the *non-controlling* secondary player (Newman 2002) by allowing audiences to take some form of control. As a result, the distribution of different player roles discussed in Chapter 1 depends on the type of game that is streamed. In this case, an interface such as that of *Chess.com* allows for easy *playing along with* (Scully-Blaker et al. 2017), in the sense that the interface closes the gap between the primary player as the one in control and the secondary player as lacking control.

Consequently, contemporary games might take into account their ideal distribution of player roles when designing their game, whether this is something that allows for a more seamless relationship between controlling and non-controlling players, or as something that facilitates a better spectatorial experience.

Characterizing the type of play chess invites on stream remains rather difficult. Although Caillois (1955) characterized chess as a relatively regulated game of competition (*agôn*), the types of engagements with chess on Twitch show a variation of playstyles. The example of "TheBelenkaya" resonates well with the particular player traits described by Bateman (2014) in his reading of Bartle's (1996) characterization of the Socializer. This is a player who is interested in engaging with people, in which "the game is merely a backdrop, a common ground where things happen to players" (Bartle 1996). Although the game is not "merely a backdrop" in this particular situation, it does take the backseat in the stream in order to provide the affordances for a distinct sociality to play. I, therefore, argue that, particularly in game livestreaming, there is no *one* playstyle for every game. Instead, designing streamable games appears to be more about designing for a *variety* of playstyles. Streamable design is design that provides the affordances for streamers to engage with their audiences – displayed by *Chess.com*'s visualization of player input – and it is design that allows streamers to take up different playstyles and identity performances. In relation to the coevolutionary processes of the assemblage (Karppi and Sotamaa 2012), streamable design is thus design that offers the material capacities to account for the expressive quality of livestreaming.

2.4.2 Streamable affordances: replayability, customization, and accessibility

As was briefly highlighted in the discussion of tandem play at the end of Chapter 1, speedrunning as a metagame is considered to be particularly suitable to transform livestreams into forums for tandem play, as it allows audience members to think along with the gameplay by giving their input (Scully-Blaker et al. 2017). Following that idea, games increasingly promote diverse *types* of metagaming practices. If anything, the first chapter of this thesis highlighted that looking at different types of empirical play practices, a "one size fits all" idea of something like *streamable* game design is very unlikely. Metagaming practices such as speedrunning display the potential of players to play games with games and outside of games, and, as Boluk and LeMieux (2017) so poignantly highlighted, potentially changes the very ontology of games (43). Adding the simple rule of 'speedrunning' to a game, meaning to play it as quick as possible (in the broadest sense), raises questions about when the game starts and

it ends. With reference to the assemblage theory, in this case, it is particularly interesting when game developers adjust the games, the *material* quality, to facilitate the *expressive* quality of speedrunning and metagaming. This mutual exchange manifests itself in various ways, for example by facilitating and promoting extended customization options for games.

Games like *God of War* (Santa Monica Studios 2018) and *The Last of Us Part II* (Naughty Dog 2020) offer players the option after completing the game to play the so-called "New Game Plus" (NG+) mode. These are modes that give the player more customization options, in order to promote replayability. As a result, specific types of players, like completionists – i.e., those who play with the goal to achieve every possible goal in the game as opposed to merely playing to win – are given the possibility to track down the items they might have missed the first playthrough or it might give the admirers of a story the possibility to experience it without as many gameplay challenges, by turning the difficulty down. More interesting is that it also adds smaller metagames to the game itself, in the form of "permadeath" – meaning that the entire story will restart upon death – or other difficulty adjustments. Consequently, on Twitch, streamers can brand their streams in accordance with these game modes, by indicating which playstyle they are performing, for example by attaching a tag that says "Permadeath" or "Speedrun." Similarly, other games such as *Hitman III* (IO Interactive 2021) and the *Trackmania* series (Nadeo and Firebrand Games 2003–2020) integrate a timer in the game's interface to reinforce speedrunning as the desired playstyle (Figure 15). More than just a material design choice that affords specific playstyles, these design features thus also account for the *expressive* quality of these games in the form of livestreaming. They open up the material quality of games to a wide variety of playstyles and metagames.

Figure 15 Hitman III's streamable interface, displaying crucial information for speedrunning, such as objectives (top left) and timer (top middle). Captured from YouTube video by "Frote7". https://www.youtube.com/watch?v=Vs0tnHkr5a4.

To illustrate, streamers like "Frote7" frequently use an external tool called "Hitman Roulette," which is an application that generates a random challenge for speedrunning *Hitman*

III. While the material qualities – such as leaderboards and integrated timers reinforce this particular playstyle – it is the expressive quality that really transforms *Hitman III* into a "speedrunning game" and thus transforms the game as a cultural form. Another example, from the data gathered for Chapter 1 (Appendix), shows the streamer "FastAnne" using the "custom game" option in *Rainbow Six Siege* to play custom-made games *with* and *against* viewers in what she calls "Fanne Friday Viewer Games." In that example, the option to customize a game aids the streamability of the game as it allows streamers to find their *niche* within a game. In this case, the latter streamer finds her niche in the dedicated interaction she has with her audience as players, whereas Frote7 is specialized in a specific type of gameplay. Even seemingly simple game features such as difficulty settings can significantly aid both the accessibility of games to less-abled people and simultaneously affords players different playstyles. In a Twitter video that went viral within the streaming communities, the streamer AshleyRoboto explained that the "easy mode" in *Kingdom Hearts III* (Square Enix Business 2019) allows her to play the game to discover the *lore* of the game rather than playing it on hard difficulty settings to be "absolutely infuriated all the time" (@AshleyRoboto 2021). It once again reaffirms that *streamable* game design is about designing for a large variety of players, both primary and secondary. Being able to play a game differently allows for the creation of streamable content. Whether this is by means of metagaming practices, or just changing the focus of the game, *streamable* content is about being able to make the game your own. Affordances and design features that grant streamer-players the autonomy to do so are thus features of *streamable* game design.

2.4.3 *Marbles on Stream!* - Designing games for streaming

Many of the games mentioned above feature specific design choices that are meant to smooth out the transition from isolated play to livestreamed play. *Marbles on Stream!* (Pixel by Pixel Studios Inc. 2018; henceforth *Marbles*) is a different breed. This is a game that has been designed specifically and *solely* for livestreaming on Twitch and makes the platform's affordances part of the game's mechanics. This short case study considers *Marbles on Stream!* and similar streamer-games as the blueprint for *streamable* game aesthetics. It must be emphasized that this game is a remediation of other popular media content, such as the YouTube channel "Jelle's Marble Runs" and its adaptation *Marble Mania* (Talpa Entertainment 2021), the Dutch tv-show by *Big Brother* (Endemol 1999) creator John de Mol. The game thus merges

game streaming and the overall ecosystems of contemporary media and general-purpose video sharing platforms.

Marbles is a simulated marble racing game in which streamers can set up games with their viewers taking part as a marble. Viewers can type "!play" in the Twitch chat during the set-up phase of the game which will load in a marble for the player (see Figure 16). Once the race starts, the simulation does the work. The streamer has control over the spectator mode, which allows them to interact with their viewers by zooming in on specific marbles and their connected viewer. *Marbles* forms an interesting mix of *streamable* aesthetics. First and foremost, it allows streamers to play *with* audiences, not just *play for* them or *play along with* them (Scully-Blaker et al. 2017). Furthermore, by having control over the spectator mode, streamers remain in charge of their stream, which is considered an important aspect of content creation (Gandolfi 2019). Streamable game aesthetics are thus all about the possible interaction between streamers and their viewers. This manifests in different ways, as highlighted throughout the thesis. *Marbles,* being the epitome of streamable game aesthetics, focuses on playing *with* viewers, whereas game aesthetics that allow streamers to *play for* or *play along with* viewers are *also* examples of streamable game aesthetics. In this case, *Marbles* shows the possibility to use Twitch as a platform to play games. Instead of the supplementary paratext to an originary text, the game, Twitch *is* (part of) the originary text.

This leads me to my final argument and critique of the hierarchical nature of Twitch. As is so adeptly highlighted with the paradoxical nature of the *platform ecosystem* (Van Dijck, Poell, De Waal 2018), companies like Twitch give off the sense that they support their content creators, that they function as connectors, whereas this example shows that they actually cut out the proverbial middleman (i.e., independent game developers and production companies). *Marbles* shows Twitch's (and Amazon's) monopolistic tendencies, in which the previous multisided platform configuration (Nieborg and Poell 2018) of mutual codependency between actors is transformed into a single-sided platform configuration in which Twitch is taking control over distribution *and* production.

Figure 16. Screenshot of Marbles on Stream! Marbles are seen loading in on the track on the left. Chatbox is visible in the left, displaying the "!play" command. Captured by author from YouTube video by Wirtual. https://www.youtube.com/watch?v=4c35XKzPDy4.

Conclusion

The title of this thesis, "the livestreaming game," refers both to the games that are streamed live, but also to livestreaming as a kind of metagame itself. It is a game outside the game, that tells streamers how to stream, and how to stream well. It is a consideration of how livestreaming consists of an assemblage of various players, streamers, platforms, and games. The "game" of livestreaming is understood as taking place within an ecosystem, in which various actors – human and nonhuman – coexist, survive, and sometimes thrive. The study of the various manifestations of what I call streamability, in context, content, and game aesthetics, reveals that this ecosystem is often paradoxical and highly contextual. There is no *one* defining feature. Instead, it is the sum of its relations in which different assemblages make for different meanings.

Let's return to the main research question of this thesis: *How does digital game livestreaming reconfigure the player-game relationship and games as a cultural form?* I have addressed this question by studying the role of livestreams as empirical representations of play, by studying the various 'players' in livestreams beyond a notion of a solitary controlling player, as was implied with Newman's (2002) division between *primary* and *secondary* players, and by revisiting the term *streamability* (Clarke 2012; Murray 2005) to concretize the relationship between streamers and games. First, to study games as a cultural form we have to study the technology and its social use, that is, *how* games are played. Using theories on gaming paratexts (Consalvo 2007), gaming capital (Ibid.), and playful identity performances (Frissen et al. 2015), I studied how streamers (and their audiences) engage in unique relationships with games. Twitch, as a livestreaming platform and therefore the connector between the two, has a pivotal role in this configuration, whether this is by bringing a multitude of players together in one livestream, or by setting the conditions of what is deemed *streamable.* The theory of *streamability,* as developed from data, provides one large body of knowledge about *how* games are played and how this contributes to games as a cultural form. In answering this research question, I fulfilled three core objectives of the thesis, which I list below.

In Chapter 1, I zoomed in on the specifics of the relation between streamers and games through which I have developed a concrete methodology and theoretical framework to understand games as a *cultural form* (Williams 2003). This term has the deliberate purpose of studying a medium beyond its technological properties. Therefore, the first objective of this

thesis is to move beyond game research as studies of isolated games-as-texts by proposing a player-centric ontology that, firstly, considers how audiences engage with game livestreams as players. I researched how players contribute to games as a cultural form by considering livestreams as meaning-making practices beyond the game as an isolated text, for example through the creation of paratexts and the exchange of gaming capital. Secondly, I extended the understanding of "players" in the player-response approach to a consideration of audiences and other supplementary players. With this, I contested the focus on "control" as the primary distinction between players as represented in Newman's (2002) division between *primary* and *secondary* players. I studied how the interactions between primary players, secondary players, and even tertiary players enriched the analysis of a game as it demonstrated the potential meaning-making that emerges in the public playing experience on Twitch.

The second objective of this thesis is to present a methodological innovation to the player-response theory proposed by Mortensen and Jørgensen (2020). Their approach uses ethnographical methods and player interviews as the data for what they call the "empirical player." The empirical player that emerged in this study is the *streamer-player* (Anderson 2017), a specific type of player-position that embodies the potential to not just play but *perform* their play, therefore engaging in what Newman (2008) called "configurative performances of play" (89). These performances contribute to games as a cultural form through the creation paratexts and the exchange of gaming capital. I moved beyond a traditional communication studies approach to qualitative content analysis, towards a broader consideration of what counts as content, using theories of ethnographic content analysis (Altheide 1987) and networked content analysis (Niederer 2016). Particularly the latter perspective pays much respect to the unique technicity of digital content on Twitch. To concretize this approach, I transformed the data has been transformed into a transcription scheme that visualizes the *content* of Twitch streams chronologically, thus accounting for the multimodality of communication, an idea I attribute to Recktenwald (2017). But instead of aiming for systematicity with this data, I have used these excerpts in a way that aims at generating anecdotal value, as a proof of concept, rather than to provide empirical evidence of communication. Nevertheless, the excerpts illustrate how Twitch streams can be critically analyzed for the study of player-response, moving beyond a focus on only individual controlling primary players by also accounting for the non-controlling secondary player-audiences and semi-controlling tertiary players.

The third and perhaps the most important objective of this thesis is to concretely define the relationship between player and game under influence of the cultural practice of

livestreaming. Using the grounded theory approach, I synthesized a theory of *streamability* primarily as it emerged empirically from the data I gathered, asking what exactly makes for streamable "content," both in terms of context as well as the game. Using the many hours of streams watched in Chapter 1, I developed an initial understanding of the phenomenon of *streamability.* Accompanied by further data gathered from other platforms, primarily Twitter, Reddit, and YouTube, and some additional reports by game news outlets Kotaku, Polygon, and The Verge, I created a preliminary theory of *streamability*. The data discussed streamability as it was talked about in streaming communities, actualized in livestreams, represented in Twitch's policies, afforded by the technologies, and performed by the players.

In developing a grounded theory of streamability, I took up Jenkins, Ford, and Green's (2013) discussions on spreadable media, particularly regarding the role of content creators as participatory audiences and the resulting discussion between centralizing strategies (*stickiness*) and diversification strategies with *spreadability* (4–6). Consequently, what stands out about streamability is the constant push and pull relationship between content creators as highly skilled laborers who constantly seek to redefine their own practice and the larger companies and technologies they rely on. Content creators, if they are to affiliate themselves closely with one particular game, are deeply affected by any technical problems and other structural issues with a game. Issues with game balance, stream sniping, and copyright remain recurring topics within streaming communities, as they hurt not only their gameplay experience but thereby also the streamability of their content. In those examples, I noticed a back-and-forth discussion between the large body of players, with content creators as opinion leaders, and the game developers in the pursuit of the streamable game. In the actual cultural practice of livestreaming on Twitch, what characterizes streamability is the uniqueness of every stream. This runs parallel to the affordances of specific games. If games afford customization, accessibility, and creative engagement – with practices such as metagaming –, it often made for streamable content. Twitch has to streamline its affordances accordingly, by allowing streamers to *be in charge* (Gandolfi 2019).

This thesis has highlighted the many ways in which Twitch has fundamentally reshaped games as a cultural form but also as an industry. Whether it is through seemingly simple changes such as adding streamer modes, creating entire games *for* streaming, or by using Twitch Drops to reward viewers with in-game materials, many of the examples highlighted in this thesis put forward the interesting dynamics between Twitch and the gaming industry. In this case, I have argued that this relationship between Twitch and the game industry has the

potential to reconfigure games as a cultural form. This particular form is one that provides streamable contexts for streamers to work with, for them to be in charge of their streams, to customize their experience, and to play with their audiences.

In conclusion, the livestreaming ecosystem has become an increasingly contested space for both streamers and games, which just shows the relevance of streaming for games as a cultural form. Twitch has thus completely reconfigured how the games industry works and will continue to do so. In the next section, I will delve deeper into some of the limitations of this thesis, and I will share my suggestions for further research.

Limitations and suggestions for future research

Several limitations of the chosen approach will be addressed as opportunities for further research. Topics that will be discussed are the methodology and scope of my research, the sociopolitical implications of this study, and other sub-genres of livestreaming that might deserve further scrutiny. Finally, I will conclude by giving an outlook for future research on the relation between digital games and livestreaming.

Methodology and scope

In the first chapter, I explored how we may interpret livestreaming using player-response theory and therefore discuss the role of players in games as a cultural form. The scope of this particular approach rather small in order to generate qualitative insights by analyzing phenomena in detail. The intention of my method was not to provide a systematic or representative account of player-response in livestreaming, but rather to provide food for thought, using a tentative outline of how we may address livestreaming this way. Qualitative content analysis is traditionally used to analyze sources that, by nature, provide rather homogenous streams of content, such as television news (Fields 1989). Although the small scope of this research makes it somewhat difficult to be considered representative of necessarily *all* players in livestreaming, the comparative approach does provide concrete pointers for any future studies on this subject. Furthermore, the challenge to translate or "notate" (Ibid.) gameplay into a transcription scheme (see Table 3; Table 4) points to another opportunity for further research. Whereas the field of communication studies already has distinct tools to dissect and analyze traditional media like television from a spectatorial position, for example by providing notation schemes, a similar practice for analyzing and annotating *gameplay* (as opposed to merely "communication") from a spectatorial position remains hard to find.

Future research on this subject could expand on the idea of *streamability* as it is actualized in gaming culture and livestreaming. Whereas this thesis zoomed in on several specific instances and characteristics of streamability, future endeavors could place the phenomenon in a larger context, for example by finding quantitative evidence of streamability. Or it could address how streamability is reflected upon by content creators in order to broaden the understanding of streamability and to address the work/leisure dialectic, similar to more ethnographically driven studies like that of Woodcock and Johnson (2019) and T. L. Taylor (2018). Concerning the methodological innovations displayed in Chapter 1, further research could expand on adaptations of player-response approaches to livestreaming. One way could be by engaging in interviews with streamers and participants of Twitch streams – honoring Mortensen and Jørgensen's (2020) approach – which could deepen our understanding of livestreams as sites to study the empirical player. Such a methodological approach would generate different results and could potentially give insight into the motivations of streamers as players, the way they transform play into work, and how they perceive the streamability of content.

Politics of livestreaming

Using a critical perspective on the overall platform ecosystem and the role of content creators as complementors, I added a much-needed criticality to the idea of having streaming platforms integrated into many facets of the players' life. The concept of *streamability,* on the one hand, zooms in on the phenomena that characterize streamability and games as a cultural form, and on the other, it lays bare the problematic roles Twitch as represented in their monopolistic tendencies and exploitative behavior towards content creators. The monopolistic tendencies of platforms are described in *Platform Society* (Van Dijck, Poell, and De Waal 2018), in which the authors claim that companies like Amazon use smaller connective platforms such as Twitch to present themselves as "connectors," implying that they offer opportunities to users, while actually deploying opaque algorithms and infrastructures that merely serve the interests of the bigger infrastructural platform: Amazon (148). Considering the growing uprise against the poor working conditions in Amazon's warehouses, it becomes even more relevant to take a critical stance against Amazon's working conditions for content creators on Twitch (Hartmans 2021; Sainato 2020). With Twitch's rebranding campaign of 2019, they present the slogan "You're already one of us," (Figure 17) which serves as a *Prime* example (pun intended) of Amazon's deceptive expansion into the realm of gaming, only to extend their infrastructural reach. It

points to a carefully coordinated situation of co-dependency between platforms and (the work of) users which potentially strengthens the hierarchies rather than allows for purely participatory practices.

Figure 17 Twitch's 2019 rebranding campaign https://brand.twitch.tv/.

This thesis focused primarily on the relation between streamers and digital games, as it is mediated and platformized by Twitch. Although the sociopolitical implications of the platform power in relation to streamability have not been the main focus of this thesis, several results pointed at the potentially problematic roles of the platform and the way patronage and other sociotechnical systems operate reinforce hierarchies by operating as reputation systems. I argue that understanding streamability as a cultural phenomenon that shapes games as a cultural form also has consequences for the political economy of streaming. Therefore, a crucial opportunity would be to dedicate future research to a study of the politics of streamability and various livestreaming assemblages, which could, for example, address the implications of platform power on contexts of streamability.

Esports

The scope of this research has focused only on a small number of primarily multiplayer games. Future endeavors could expand this scope, for example by zooming in on specific streaming sub-genres such as esports, which are arguably the most streamable of streamable contexts, at least in terms of numbers. Consequently, such perspectives could identify the rules of the metaphorical "livestreaming game" for specific streaming sub-genres, such as esports, but also practices like roleplay and cosplay. The high viewership and prevalence of esports is a reason *why* games like *Counter-Strike: Global Offensive* and *League of Legends* are consistently among the most-watched games on Twitch. Although esports has been researched quite

extensively, it would be interesting to also extend the question of how livestreaming reconfigures games as a cultural form to the field of esports. Utilizing a critical comparative perspective, similar to the grounded theory approach used in this thesis, future studies could address the streamability of esports, perhaps also beyond Twitch itself by considering how other platforms might be used by audiences to share content or knowledge about esports and their games.

Looking ahead

Looking ahead at research on the intersections between (digital) games and livestreaming, I argue that scholars must be mindful of their implications. When we address the field of game livestreaming, we are not just talking about technologies and their users but, crucially, we are talking about a culture and their people. To cite Taylor, "looking at how people are creating experiences and content for their own fulfillment and the pleasure of others and their communities can provide insight into the complexities with which we navigate commercialized platforms" (T. L. Taylor 2018, 262). The ever-changing emerging practices and relations on Twitch remain crucially relevant to be studied with curiosity for such complexities. This curiosity as to what constitutes "content" on Twitch must be embraced to, in the future, keep asking the *why, what, when,* and *how* of livestreaming.

Crucial in all of these studies, I argue, is that we have to pay attention to the potential "participation gap" (Jenkins 2006) that emerges when "play" becomes "work," which is central to T. L. Taylor's (2018) work on Twitch. These content creators on Twitch are not just making content because it is fun, but it is their work and sometimes even their livelihood. Therefore, we must be particularly critical of the role of the platform, as many users – whether they are content creators or end-users – are not addressed as people who create unique experiences for others, as would be the case with *spreadable media,* but as entry points for unique data for the platform.

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Appendix: Data for Chapter 1

Date	*Game*	Streamer	Viewer count start	Recording length (mins)
15-03-2021	*Grand Theft Auto V*	AbdulHD	2518	21
25-03-2021	*Apex Legends*	AnnieKrevice	53	5
25-03-2021	*League of Legends*	SariaArts	55	12
25-03-2021	*Dead By Daylight*	Charleszyyy	129	4
29-03-2021	*Rocket League*	Chaotic_Queenx	111	10
29-03-2021	*Rainbow Six Siege*	z1ronicdk	960	11
29-03-2021	*Chess*	TheBelenkaya	2851	10
29-03-2021	*Apex Legends*	iiTzTimmy	5717	13
29-03-2021	*Grand Theft Auto V*	AnthonyZ	6008	17
29-03-2021	*Grand Theft Auto V*	Kyle	8352	8
01-04-2021	*Dead by Daylight*	Steroids256	97	30
01-04-2021	*Dead by Daylight*	TUR_Griso	135	29
01-04-2021	*Rainbow Six Siege*	Pengu	1302	33
02-04-2021	*Rainbow Six Siege*	Lozza361	51	10
02-04-2021	*Rust*	Hutnik	101	32
02-04-2021	*Rust*	saysoamy	181	27
02-04-2021	*Rainbow Six Siege*	FastAnne	300	28
04-04-2021	*Apex Legends*	GuhRL	719	8
08-04-2021	*Minecraft*	Gabbo	115	10
09-04-2021	*Marbles on Stream!*	Gabbo	93	15
09-04-2021	*Apex Legends*	ShivFPS	6759	17
04-05-2021	*Chess*	LefongHua	137	30
05-05-2021	*Chess*	transgirlchess	14	13
05-05-2021	*Rocket League*	ChubRL	39	18
05-05-2021	*League of Legends*	Sarellan	100	18
05-05-2021	*Rocket League*	Demalay	159	30

Table 5. List of data used for Chapter 1. Each column represents a single stream/recording. Sorted by date.