Before You Step into the Stream

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The phrase "livestreaming" invokes a myriad of images: high-stakes video game tournaments with both an online and in-arena audience; one person, playing *Minecraft* on camera for a dozen to tens of thousands of online viewers; a TikToker's live "get ready with me" video; a YouTuber's monthly live Q&A session. These images reflect livestreaming in popular terms, though the medium's explosive popularity and accessibility have greatly influenced the diversity of interventions livestreaming can facilitate. The scope and technological requirements to livestream have changed significantly since the early days of Twitch, or even the height of the 2017 *Fortnite* craze that propelled high-profile streamers into international discourse. Indeed, while Twitch remains the most-used livestreaming platform, it has long outgrown its niche as a game streaming platform. From alternative platforms like YouTube and Facebook Live, to the consistent popularity of the "Just Chatting" streams on Twitch, the landscape of livestreaming continues to change in favor of an increasingly diverse set of purposes, contexts, audiences, and subjects.

As we discuss here, and as the other essays in this issue demonstrate, the boundaries of livestreaming remain ephemeral. Increased accessibility to the technology and platforms required to stream has entirely altered the landscape of livestreaming – a product of both an increased need for streaming technologies and

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a broader array of accessible platforms facilitating livestreaming, especially in response to COVID-19 and the global effort to work remotely. Internationally renowned and amateur musicians alike perform on-stream on Twitch, Discord, or Facebook Live for an online crowd of handfuls to thousands; nature preserves livestream Q&A sessions about the endangered species they protect on Instagram and Zoom; Indigenous poets and scholars gather for a poetry reading on YouTube to announce the release of a milestone anthology of literary works. In all these examples and more, disparate fans, creators, advocates, and lurkers form vibrant communities by using and participating in livestreaming communities. Representative of this shift, the essays in this collection emphasize the malleability of livestreaming as a practice and product of popular culture, diverse in its creators, audiences, subjects, perspectives, and purposes.

Livestreaming might feel too amorphous to study in focus amid these shifting waters, too difficult to pin down and discuss critically with its diverse contexts. In this essay, we highlight the metaphor of live*stream*ing to emphasize the various labors involved in both the making of livestreams and in the growth of livestreaming studies. Before you step into the stream, we aim to provide a sense of the scope of livestreaming, as suggested by the essays in this issue. In this chapter, we aim to celebrate the diversity of livestreaming by dispelling popular misconceptions, surveying livestreaming's position as a medium for creating and communicating popular culture. To do this, we have cobbled together three *consejos* for fording the rushing waters of livestreaming studies. This is not meant to be expert or definitive advice. Rather, after our years streaming and studying streaming critically, we present not guidelines but *consejos*, pieces of advice drawn from our successes and failures of fording these waters.

We discuss livestreaming from our perspective as media scholars, reflecting on our use of streaming as a method for critical scholarship. Importantly, our perspectives stem from our work as part of Serious Play, a digital media research collaboratory in the Center for 21st Century Studies at the University of Wisconsin-Milwaukee. Through our work in and outside of Serious Play, we have used livestreaming as a method for conducting research in play, game, and media studies. With these experiences in mind, we end in questions that remain to be answered, but might yet provide insight into the future livestreaming. In the following chapters, authors sometimes take up these questions themselves, reflecting the hopeful conviction that livestreaming – as both a methodological practice and mode of popular culture – can benefit our understanding of how communities form around

digital media.

Consejo #1: The Technology is Smaller than it Appears

One of the biggest misconceptions about livestreaming is that it requires significant technical expertise on behalf of the streamer. Really, anyone who can handle a Zoom or Microsoft Teams video call already has the tools necessary for livestreaming. These tools are primarily a microphone, a camera, and a computer. Most troubleshooting can be solved with a quick Google search or enlisting the help of a friend with some streaming experience. Moreover, with the parameters for open broadcast software (OBS) set up, users only need to open the program and press "start streaming" to broadcast to the world. The streamer does not need a powerful computer to handle the activity: many popular Twitch channels, particularly in the platform's most popular category "Just Chatting," simply stream from their smartphones. If such personalities can engage with a live audience in the thousands, all while at a restaurant, then we have truly arrived at the zenith of accessibility for streaming: an activity that can be done by anyone, anywhere with a stable internet connection.

Still, some ways of streaming are better than others. A high-quality central processing unit (CPU) is perhaps the most important part of the set-up, regardless of the kind of stream intended, since it does the bulk of the work of encoding video and audio for the audience. A good graphics processing unit (GPU) is needed to stream graphically intense games, but not required for less taxing titles or other kinds of activities. Often such GPUs come as circuit cards designed to fit into a configurable system, handling graphics independently of the CPU. Such units are called dedicated GPUs, in contrast to non-replaceable, integrated CPUs that may be found on the main circuit boards of other systems. Finally, a generous amount of random access memory (RAM) – somewhere in the ballpark of 8-16 GB – is useful for ensuring that your system renders video at a sufficient rate. Less capable systems may fail to render screen states (frames), leading to a stream perceived as "choppy." This is more important in fast-paced titles where the pixels on the screen are dramatically changing. While one can invest in a variety of equipment, it is worth remembering that it is not the computer that makes a quality stream. The computer is simply a tool to help the streamer accomplish the goals of their broadcast.

The greatest investment for the streamer is not the time spent setting up the

technical aspects of the stream, but the time of streaming itself. Even two hours of streaming a week will add up to over a hundred hours over the course of a year. Those trying to make a career out of livestreaming will undoubtedly dedicate many more hours to the task, but this is not necessary to have a vibrant streaming community. Many people simply want to stream a game for a single friend a long distance away, or a few family members to feel closer for a short time. Or their streams are a singular event like a conference, poetry reading, or live concert. Academic study, financial sponsorships, and viewers tend to be attracted by people who make a living off the activity, primarily because it is such people and organizations who spend the most time streaming and ask for the most of other people's time in the process.

Perhaps more than any medium before it, streaming consumes time. Let's compare Twitch streaming to broadcast television. The most robust cable television services offer upwards of a thousand channels, an unconsumable amount of programming for an individual. Livestreaming, though, is made for a segmented media age. Streams find their audiences (or not) and require very little capital to launch and operate. At any given moment there are hundreds of thousands of channels live on Twitch and millions of people watching. Each month, billions of hours of time are consumed on the platform. As a viewer spends time watching, so too does the streamer spend that time broadcasting to them. "Full-time" streamers are just that: those who give an entire working day to broadcasting themselves gaming and chatting with a live audience. The recent rise of "subathons" among popular streamers, where they stay live provided people keep subscribing to their channel (i.e., supporting them monetarily), suggests just how much livestreaming can monopolize a person's time. In some of these events, the streamers even sleep on camera.

Consejo #2: The Community is Bigger, Better, Faster, Stronger than it Appears

Many people were introduced to livestreaming through esports and high-profile gaming personalities like Richard Tyler "Ninja" Blevins. These two avenues were the primary mode of growth in the early days of Twitch. Tournaments for competitive games like *Starcraft II* and *League of Legends* consistently had the largest amounts of viewers, but creators soon realized the market was much bigger than esports. While events-oriented programming (esports, etc.) tends to dominate

the peak viewers on streaming platforms, the hours and minutes spent in more intimate spaces outweighs the total of the more professionally produced products. Whether a streamer leverages some preexisting fame (such as from esports) or builds their brand from the ground up, these platforms are not a monolithic continent of content; they are an archipelago of small communities. For many, watching a streamer is akin to having a "lifestyle brand" with which they associate themselves. In a culture predicated on the existence of paid subscriptions, donations, and ad payouts, professional streamers need to attract an audience that will watch their content regularly, and in doing so attempt to craft a strong sense of identification, connection, and community with their audience. These brands tend to extend far off the platform the creator streams on, extending to services like Discord servers, YouTube channels, and accounts on Twitter, Patreon, Instagram, and OnlyFans. They may involve personal merchandise, giving the audience numerous ways to interact with the personality.

The most distinguishable aspect of streaming, compared to other media, is this interaction between the streamer and the audience. Streaming interaction primarily takes place in a chat box. Consider the difference between spending an hour watching a film, television, and a livestream. The film viewer cannot interact with their entertainment, except to play with its temporality via pausing, rewinding, and fast-forwarding. The television viewer can change the channel but has no control over the content once they choose to watch it. The livestream viewer not only has a wide variety of streams to watch but can interact with the streamer on a chosen channel, potentially influencing the content of the stream to fit their desires. Streamers often read the contents of chat aloud, giving those who interact a kind of "15 minutes of fame" each time the streamer notices them. Many streamers allow viewers to place a robotic voice over their stream with a short message as an incentive for donating or subscribing to the channel. This kind of interaction between streamer and audience defines livestreaming and cultivates an audience who expects to have an influence on the content of the stream. It is important, thus, for the streamer to recognize that the medium of livestreaming is primarily about the relationship between the streamer and their audience. From a critical perspective, this is the most fruitful site of analysis for the medium. The ways a streamer can interact with their audience are as various as the ways human beings can interact with each other, a truth that helps infer the deep social reality of streaming.

Importantly, the relationship between streamer and audience remains intricate

across both professional and amateur streams. Authors in some of the subsequent essays will demonstrate this distinction in greater depth, but for the purposes of introduction, we will briefly define them here. We consider professional streams as those which work toward financially sustaining an individual or collective of streamers. This group includes esports organizations and collaboratives like the *Overwatch* League, the Game Grumps, and ESL, but also refers to individual streamers Katie "PikaChulita" and Germán Garmendia. These streamers commonly use the money made by streaming to both help sustain themselves financially and improve the quality of the stream. It is useful to think of professional streamers less like traditional entertainers, and more like gig economy workers. By this account, artists and variety streamers like KayPikeFashion, Dominike "DOMO" Stanton, and are also professional streamers. These broadcasters often spend significantly more time on the platform, building large audiences which in turn support their content creation. Conversely, the scope of amateur streaming is endless. This category might include casual TikTokers who use the platform's livestreaming function to communicate with friends and online acquaintances, musicians using Discord to share their work and performances in a live setting, or any number of individuals for whom streaming is a leisurely, perhaps infrequent activity. These individuals typically make no money from their streams, as their audience, as measured by views and watch hours, is too small to qualify for financial compensation.

Across both professional and amateur streaming settings, the relationship between streamer and audience remains integral to the success of the stream. In professional streams, it is not uncommon for moderators and bots to support the streamer in maintaining this relationship by engaging with chat, highlighting certain messages, or enforcing community guidelines. In amateur streams, the relationship between streamer and audience tends to appear as more closely-knit, often taking form as the streamer directly responding to chat messages and maintaining an extended conversation throughout the viewer's engagement.

The popular conception is that those who stream, and watch streaming, are white young-adult males, and while the demographics of streaming on Twitch skew young this is not necessarily true for user-bases with a higher median age, such as Facebook Live (Kavanaugh). Though, on that note, in terms of economy of scale, even if only 3% of Twitch's audience are older than 55, that number, around 40,000 people on an average moment, is still bigger than the population of some cities. Thus, on every platform one can find any given demographic livestreaming content.

Perhaps this is more important for advertisers than critics. Regardless, the low barrier of access to most livestreams means that livestreaming can be, and is, at least potentially for everyone.

This content does not have to involve playing video games: it can be tabletop games, arts and crafts, music, talk shows, co-watching a film or a television series, or simply the aforementioned "just chatting." Thus, we can imagine that the activity of livestreaming can be placed over any kind of media artifact. So-called reaction videos, in which streamers respond vividly in real time to some media product, are the bread and butter of many YouTube stars. Through shows like these, livestreaming offers the potential for live reactions and taste-making on a moment-to-moment scale, a way to experience popular culture curated by and experienced with another person. While the current cultural moment of livestreaming primarily consists of gaming content, this is because of the tech-savvy inclinations of the medium's early adopters and the fact that gaming, particular for so-called "games as live services," gives the streamer a sufficiently varied experience (both for themselves and audience) over the exceedingly long times they desire to be live. This skew toward games may not always be the case: there could be a future where gaming is just one slice of the cultural pie on a site like Twitch. Already, the most popular category at any given moment is likely to be "Just Chatting" and many of the platform's most recognizable stars are known not for their impressive skills in some virtual arena, but their individual charisma, their political views, or their ability to keep an audience engaged with their content for long periods of time. As you will come to see from many of the articles included in this collection, streaming is a place for much more than gaming.

Consejo #3: The Waters are Deeper than they Appear

As the subsequent chapters demonstrate and we have begun to discuss, the waters of livestreaming remain boundless, and in many ways, unexplored. Reaching far beyond video game communities, innovative use of livestreaming has proven the medium's mettle as a mode of cultural production. Indeed, livestreaming both conforms to and challenges popular culture scholar Ray B. Browne's appropriately sprawling description of popular culture as "[consisting] of the spoken and printed word, sounds, picture, objects, artifacts" which "are not narrowly intellectual or creatively elitist and which are generally though not necessarily disseminated through the mass media" (11). While generally aspiring to reach mass audiences,

most streamers across platforms perform for small audiences. Livestreams, across platforms and purposes, are inherently multimodal and tend to connect individuals across an ecology of platforms and digital spaces which streamers and audiences can use to proliferate content by and for the community. In this way, popular culture studies of livestreaming can discuss both the practice of streaming and the tangible objects produced by streaming communities. In this section, we discuss some of the ways this popular culture medium has extended far past the realm of video games.

While the history of livestreaming precedes the broadcasting of games, it was with the proliferation of smartphones that streaming came into its own, escaping the confines of desktop computing. The use of mobile devices is less prominent on traditional streaming sites, though not entirely absent, and more prevalent on social media platforms like Facebook, Instagram, and TikTok. Livestreams on these social media platforms have marked differences, even as they carry conventions from the style of streaming popularized on Twitch. Just as Twitch's focus on video games popularized practices (e.g., camera positioning, subjects of discussion, relationships between streamers and audiences) and stream genres (e.g., Twitch plays, charity streams, speedruns), so too do the platform's affordances inform other modes of livestreaming. Discord hosts an extensive network of server-based communities who livestream internally, both privileging the community built by joining a server and subverting the common imperative for creators to broadcast to as large an audience as possible. Across these platforms, livestreaming proves a malleable tool, both a means of multimodal communication and a binding agent for communities discussing, creating, and engaging in discourses of popular culture.

Livestreaming communities often form in response to specific media texts (e.g., a video game, TTRPG or board game, film, television series), though they can just as easily form in response to practices or more abstract interests. This is especially true on platforms where livestreaming is not the primary mode of content creation, such as TikTok. To give a sense of how far the culture of livestreaming has grown past the boundaries of video games, let's consider some broad categories: event-based streams, watch parties, arts and crafting, discourse, and the live archive.

Livestreaming can circumvent traditional restrictions for events and performances like physical distance, occupancy challenges, and audience logistics. As opposed to the garish helmets of *Portlandia*'s 2016 VR concert skit, livestreams of events traditionally held in person have become commonplace in performance circles in the form of concerts, plays, festivals, and the like. Event-based livestreams also have a place in academic and activist contexts, given the low cost

of a livestreamed event requiring no travel and minimal space requirements. In spring 2020, Serious Play hosted a livestreaming symposium in collaboration with the Center of Excellence in Game Culture Studies at the University of Jyväskylä in Finland, featuring scholarship from both the US and Europe. Over the course of two days, joined both streaming groups on Twitch, discussing the state of livestreaming studies on both voice and chat. Through a complex negotiation of various streaming and communication tools, we brought together presenters with both academic and livestreaming experience, using Twitch as our primary venue. The utility element of livestreaming is perhaps most obvious in event-based streams like these, wherein streaming facilitates copresence which might otherwise be impossible given physical distance or similar restrictions.

Hand in hand with the opportunity to livestream on platforms like Discord are watch parties, online contexts in which people gather to watch something together, generally a film, television series, play, or similar video media. Interestingly, this phenomenon coincides with the commercial potential for livestreaming, already capitalized by companies like Amazon, Netflix, and Disney. Amazon's ownership of Twitch has facilitated interactive watch parties of Amazon Prime content, hosted by Twitch streamers. Rather than merely emulating the experience of sharing the remote, as is the case with both Disney's and Netflix's watch party features, livestreaming Amazon Prime content on Twitch more closely reflects traditional livestreaming: a streamer leads the performance of reactions and attentiveness to the video as viewers share in the experience in chat. A similar phenomenon occurs on Discord, though there are marked differences in the relationship between media objects and viewers. In Discord, while one person streams the content from their computer, participants in the channel can usually participate verbally. In this way, while the streamer maintains control over the media object, the voice channel echoes the experience of watching a film with friends.

Perhaps one of the most diverse phenomena of livestreaming, common on both Twitch and social media streaming platforms like TikTok, broadcasts discussing or demonstrating crafting skills have grown considerably. The "Art," "Cooking and Food," and "Makers and Crafting" subcategories of the "IRL" header on Twitch demonstrate this most clearly, containing spaces wherein amateur chefs, makeup artists, and professional and beginning crafters alike share their work with viewers. These streams often have an educational focus, dispelling popular misconceptions about specific crafts or disciplines or demystifying the crafting process. One such example is pottery streamer PlayInTheMud, a professional production potter who

livestreams her work and practice on Twitch. Using a profile and top-view camera on her potter's wheel in addition to a silhouette camera of herself, the streamer splits the viewer's attention between herself and the most advantageous angles to see the pot she's working on. With minimal background music and an emphasis on the craft itself, PlayInTheMud casually chats with viewers about their day and the weather, answering intermittent questions about her craft or pending studio orders, occasionally stepping away from the throwing wheel to fix a frozen camera before hurrying back to the clay before it dries. Over the course of a three-hour stream, the potter can throw dozens of similar pots for the studio while simultaneously advertising her skills to viewers who are then encouraged to purchase wares from the studio site. Importantly, the chat is active during the stream, featuring long-time subscribers continuing conversations from previous streams and checking in with each other and the streamer. This example of idle chatter interspersed with critical discussion of various potting skills demonstrates the way livestreaming practices transcend genre given its educational potential.

A similar category of streaming is discourse-based, encapsulating educational, talk show, and live discourse streams. This category accounts for the rising popularity of talk shows, podcasts, and similar remediations of talk radio on streaming platforms. Most importantly, this category can be read as addressing the conundrum of livestreaming facilitating a live archive. On most platforms, livestreams can be accessed after the fact, which has proven important in recent political events captured on livestreams. From the Hong Kong protests to international BLM protests and anti-government protests in Cuba, livestreaming is used as a tool for activists to communicate with one another and with broader audiences. In a related example, livestreams of the attack on the US capitol by right-wing extremists have been used in both media coverage and legal investigations of the riot and the attackers involved. In all these examples and more, livestreaming is both a tool and a product, both of which can be used to amplify messages of protest and dissent, a living archive of resistance and subversion.

Consejo #4: Always Look Ahead! The Horizon is Closer than it Appears

This final part of the discussion is particularly informed by our university context, where there can be a perceived tension between traditional academic work – reading criticism and theory; writing new contributions to knowledge; engaging

students with ideas – and the non-traditional practice of streaming. Our thinking is also inevitably shaped by our work with analog and digital games, though as we have said there are many other purposes for livestreaming. First, we will consider some possible rewards of a live-streaming project, then some questions that remain productively open. While our focus here is on games and play, the rewards and questions we discuss about livestreaming remain relevant to academic inquiry of streams that do not feature video games.

First reward: producing the object of study. We belong to academic units that study games as forms of communication and culture. Some of us have been involved in game design, or in preparing students to work in that industry. We began to gather to play games on a regular basis, in some cases long before Twitch was created, in the belief that games can only be properly understood through play. As Henry Jenkins observed, games are a "lively art," inherently performative. As film screenings for cinema studies or literary readings for creative writing and theory, shared play is as necessary to us in game studies, focusing our attention on key texts while building critical repertoires. However, a shared game session of play does not just re-present a game, but rather re-creates the playing of the game as a lived experience. We can refer to illustrations or recordings of gameplay, but these are secondary evidence. A game is most fully present when we *play* it. Play is most meaningful when it involves others as co-participants or watchers. It is no coincidence that live-streaming groups have started up in game studies and design programs around the world. Livestreaming makes the sharing of play easier, amplifies its reach, and enriches the experience through mechanisms like chat.

Second reward: coordinating modes of attention. The cultural theorist N. Katherine Hayles distinguishes between "deep" and "hyper" attention, the former associated with writing, the latter with digital media. Hayles associates deep attention with extensive mental activities that involve reflection over time, such as the way audiences understand character motivations, recurring motifs, or ironies in novels, plays, or films. Hyper attention is less concentrated and more immediate, the more labile form of attention we might use when scanning a webpage or orienting ourselves in a game level. Though the two modes can often seem at odds, both are valuable. Hayles appeals to educators to find ways to harmonize them.

Livestreaming represents an interesting response to, and perhaps a complication of this task. In the case of digital games, player and audience are to some degree immersed in the hyper-attentive idiom of play (in many if not all games), but the context of observation introduces an element of reflection that suggests deeper

consideration. Commenters may pull back from the immediate experience of play, making comparisons, asking questions about strategy and design. When this happens in chat, watchers of a livestream need to mobilize reading and writing – of a highly specialized type, no doubt, but still engagement with words – as well as visual and kinetic faculties. The result may be an even more intensely hyper-charged experience, where a virtuoso player manages both game demands and the flow of discussion – we have seen this happen. Because this experience involves other people, however, the hyper arguably "reverses," as Marshall McLuhan would say, into the deeper terrain of notes, video lectures, and academic papers (51). To the extent this mixing of modes is desirable in education, as Hayles argues it is, livestreaming represents an important tool for media scholarship.

Third reward: communities of play. The game scholar Celia Pearce uses this phrase as the title of an ethnography of online gamers. Pearce argues that play is inseparable from community, making critical understanding of play necessarily a shared enterprise. For us, streaming activity involves an array of regular shows producing hours of weekly programming – a notably demanding operation – but even a more casual scheme will involve a collaboration between the performer and viewer/followers. T.L. Taylor, another ethnographer of play and the first major researcher of livestreaming, notes that streaming starts with an orientation to audience (6). Streamers are always "on" (socially-oriented) when they are on-stream. Streaming promotes connectedness. For us, the activity has fostered a remarkably successful academic community across schools and departments. A considerable amount of published work, much of it collaborative, has emerged from the first four years of this project, as have important critical insights and innovative approaches to teaching. We have begun making links to other streaming groups in our region and abroad. The senior members of our group, drawing on their prior experiences in digital humanities (electronic literature) and collaborative game studies (*World of Warcraft* guild play), emphasize the value of these connections, which may significantly impact developing scholarly careers. They may even influence the development of the academy.

In addition to these three clear benefits to streaming, we also suggest some issues that are perhaps more open to debate – questions that seem worth asking as you consider making streaming part of a scholarly or cultural project.

1. What is the relationship between play and learning or reflection? In addition to Hayles' dualistic scheme, there is also James P. Gee's more unified view, in which (computer) games are inherently cognitive activities,

a fusion of learning and play. What practices, structures, or assumptions will you use to coordinate these functions? Will you keep them distinct or encourage boundary crossing? How does interpretation intersect play? When can performance also be called research?

2. Play may imply community, but where are the limits to community in institutions that evaluate individual performance? How much sharing can we get away with? How can we understand ourselves as original or independent agents within contexts of shared discourse? Should we instead understand play as radically subversive of these institutions? Could shared play be the starting point of action to reform schools, companies, and states?

3. Should we apologize for fun? As our colleague Thomas Malaby has argued in "Beyond Play," play can be an anxious and agonized activity, but our experience is generally the opposite. We more often find play fulfilling and stimulating. Even the most deeply flawed game can be an occasion for insight, invention, and shared thinking. Livestreaming tends to produce joy. Can your institution or context handle that?

These questions seem pertinent now, in the first years of the turbulent twenties. It is impossible to know if they will still be appropriate in years to come. To paraphrase a certain song, the waters around us are still growing. No matter how you think about livestreaming, one thing is clear: a stream of any kind is an active proposition, embodying movement, energy, displacement, and change. You cannot step into the same one twice, nor will you be the same coming out as you were going in. Streams can be enlightening, inspiring, transformative – and just as often bewildering and bizarre. We can never say exactly what is going to happen when we step into the streams in which we play but can be certain that we will have the experience together.

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