Introduction: The Revolution Is Streaming Live: Cultural Perspectives on the Age of Live Streaming

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It's the end of May 2020, and I've been quarantining for almost three months now. My landlord has just told everyone in my house that we will be evicted if we don't leave in a month, so I go out for a walk outside my Cambridge apartment, trying to make sense of all the upheaval ringing in my brain by breathing the masked midnight air. The streets are eerily quiet. I can't tell if I'm getting used to the main square in my neighborhood being completely vacant. On the bricks outside the shuttered subway station, someone has scrawled in chalk "BLM 6:30 NUBIAN SQ 5/31." Calculating as I head toward home, I reckon that it would be about a seven-mile journey to get to that part of Roxbury on foot. By the time I'm unlocking my front door for one of the last times, I'm more full of angst than when I left.

I know that I am living through a collective trauma, a layer cake of global crises that includes both a raging pandemic and a surge of state-sponsored racial violence, and yet I am feeling so cut off from humanity. Reflecting, I realize that one of the reasons why I have spent so much of my time in isolation sewing masks and live streaming my "speedruns" of the process has been to create a new space for connection. It seems that making "cloth hugs" for people's faces and sharing that experience with the world has become my way of keeping in touch. But right now, rather than crafting and 'casting, I wish I were part of a crowd, chanting for change. Folks won't be gathering in the Boston area until tomorrow, so I open up Twitch and click on "WOKE," one of the channels I know will be live streaming the Black Lives Matter protests that are happening in other places tonight.

When I open the channel at around 2 a.m. Eastern time, there are already over 13,000 people tuned into WOKE's stream (figure 0.1). Tiled on the screen are nine live views being broadcast simultaneously, including
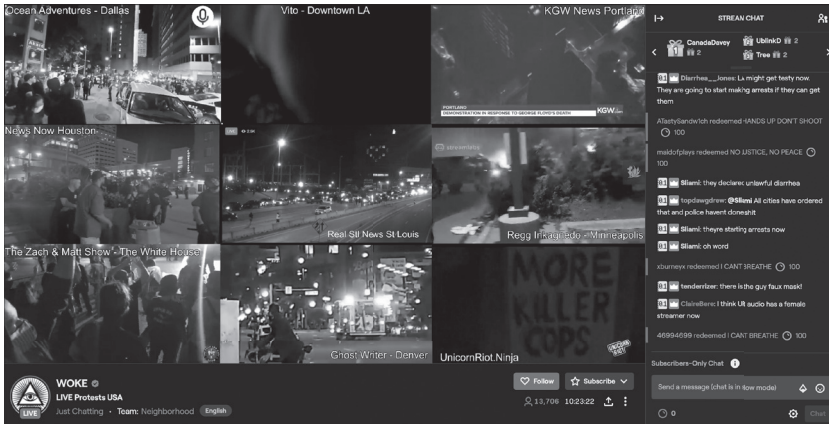
Figure 0.1
Channel of the streamer WOKE, with live feeds from many people.

footage shot from the first-person perspectives of protesters on the ground in cities across the US—Dallas, Houston, Los Angeles, Minneapolis, Denver, and Washington, D.C.—as well as feeds from TV stations in St. Louis and Portland and a nested stream from the independent news channel UnicornRiot. Even though it's nighttime all across the US, people are in the streets at this very moment. My screen fills with an explosion of flashing lights, jostling bodies dressed in black, and blurry clouds of mist or tear gas. Only the audio from a single video feed, the protest in Dallas, is playing, but the police sirens are as loud as their lights are bright, and I lean in to make sense of the confrontation that's unfolding in that corner of the screen. My pulse quickens as I think, "Is this happening? Yes, we are really doing it." It's like I can see the torrent of emotions that have been whirling inside me displayed in their countless variations across my screen. Outside, my soon-to-be-former city is quiet, but after drowning in silence all night, being able to immerse myself in the cacophony that is ringing out across the country makes me feel connected again.

As May spills into June, I spend the nights packing my belongings into boxes while witnessing historic events play out over real-time video. I notice a significant uptick in streamers using the platform for spontaneous citizen journalism, from longtime content creators like ZombiUnicorn to newcomers like JoshBeStill, and I find myself in awe at the groundswell of

people broadcasting from the front lines of what eventually will become a worldwide movement for racial justice.

Sure, I could say that I need to be watching this live because these emergent forms of platform activism are my current research focus, but in truth, I am drawing comfort from this new form of civic engagement. Lockdowns have made my life as a technology design activist feel like I exist in a virtual simulation. I have been working feverishly at my keyboard alone for months, fretting, "Does what I'm doing through organizations like AnyKey and the ACLU make a difference? Am I helping folks with the things I build and write? Is anyone even out there anymore?" Being able to participate in the protests remotely and feeling the energy of the millions of people across the country who I am in common cause with reassures me that I am part of something larger, that online and real life are connected, now more than ever. Although this moment of great upheaval has been fraught with uncertainty, I am exhilarated by the thought that no matter where I am living when it happens, the revolution will indeed be streaming live.

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This is Johanna's story, but each of the editors of this volume has had a moment much like this one: their own powerful instant of realization that live streaming, the practice of broadcasting video (and/or audio) footage live online, has been core to their experiences with the transformative events of the last few years. All four of us have been longtime live stream viewers, researchers, or streamers ourselves. Yet, with the pandemic on our doorstep, the planet seemingly poised for ecological collapse, and concerns of social justice in the US finally coming to a head, we have each been reminded— whether in joy or in sorrow—how live streaming now sits at the center of the contemporary digital mediation of our lives.

For Bo, as for Johanna, this moment came during the Black Lives Matter protests. One afternoon, in the midst of conducting research on domestic space in live streaming, Bo opened Twitch's "Browse" page and was shocked to find that one of the channels with the platform's highest current viewer count was the breathless, frenetic, multicamera footage of the protests Johanna describes above. Living in Orange County, a staid suburban bubble and California's seat of political conservatism, they felt an immense and sudden flood of relief upon finding WOKE's stream and joining the tens

of thousands of viewers who were similarly watching on the edge of their seats. Here was a way, certainly small but nonetheless significant, to be there, to gain access to the world, and to stand in solidarity with those putting their bodies on the line in the critical fight for social justice.

Chris has been a longtime watcher of various gaming content creators and esports players on Twitch, having grown up playing competitive *Super Smash Bros.*, among other games. In a way, the COVID-19 pandemic made live streaming strange again: a comfortable leisure medium became a curious portal to the unknown almost overnight. As drag performances, book talks, concerts, and even sexual encounters all remade themselves in live streaming contexts, he came to understand his usual outlets for fun and intimacy through fresh eyes. One night in June 2020, as he danced his way through a queer DJ set and fundraiser, he noticed that there were people in the audience whom he recognized from his new home in Los Angeles, as well as friends of friends and Instagram crushes from around the world. Turning his camera off for a moment, Chris wiped some sweat from his chest and noticed some other moisture had dripped onto his lap. He was crying. Chris was profoundly moved by the level of connection that was possible through the ordinarily mundane Zoom interface that he had grown accustomed to using for graduate school seminars and meetings. However lonely it was to move to a new city right before IRL sociality became quickly unavailable, live streamed queer nightlife had become a crucial site of communion and belonging.

Amanda's most impactful encounter with live streaming came earlier, and it was also her first. In 2014, a friend sent her a link to the original *Twitch Plays Pokémon* live stream: a cacophonous, crowdsourced playthrough of the video game *Pokémon Red* controlled by the rapid chat inputs of viewers (figure 0.2). In this instant, Amanda found herself amazed both by the technical setup of the stream—a system that allowed thousands of people to influence the actions of a player-character collectively, in real time—and by the narrative and lore that viewers were constructing as they played, building off of the emergent and often unintentionally hilarious scenarios that materialized through their unruly play. For Amanda, still in the formative moments of her journey to game studies research, *Twitch Plays Pokémon* represented the power of fannish affect, full of creativity and exuberance, but also the potential of live streaming technologies specifically to bridge distances and form communities on a global scale.
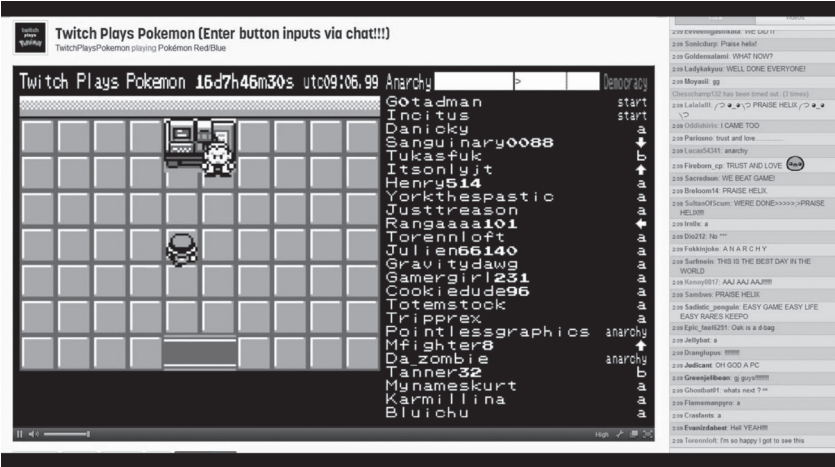
Figure 0.2
Screenshot of the first *Twitch Plays Pokémon* broadcast. *Image:* DDR's Let's Plays

A few years later, live streaming would facilitate another critical moment in Amanda's life. In 2016, while watching an *Overwatch* competition on Twitch, she happened to glance at the user chat while a woman "shout-caster" (the esports equivalent of a traditional sports commentator) was on screen. To Amanda's horror, the chat was quickly flooded with derogatory comments from dozens of viewers about the shoutcaster's physical appearance and the legitimacy of her expertise. Witnessing this blatant display of gender-based harassment is what pushed Amanda to research not only live streaming, but specifically the experiences of women streamers. Here, it became clear that the same radical potential of live streaming technology that had seemed so full of promise in the case of *Twitch Plays Pokémon* was being weaponized against those who were seen as unwelcome in gaming spaces. Ever since, even as she continues to be a passionate participant in streaming communities, Amanda is known to always question who gets to participate in cultural and technological innovations, and on what terms.

The significance of these moments goes beyond our own individual experiences as live streaming researchers and citizens of a society that is increasingly being live streamed. They also go beyond the political and cultural landscapes of the US, where we four editors currently live. As both existing work and many of the new contributions in this volume show, live streaming is a worldwide phenomenon, touching everything from protests in

Hong Kong to rallies for democracy during the Arab Spring to music in Brazil and LGBTQ communities in South Korea (Davies 2020; Kavada and Treré 2019). These anecdotes serve as illustrations of a much broader set of cultural phenomena. Live streaming, which takes place on a wide range of platforms and entails the broadcast of a diverse array of content, has rapidly expanded beyond its image as the domain of video game players and online influencers to become an integral part of fields as wide-reaching as politics, policy, activism, labor, business, education, art, performance, identity expression, community formation, and much more. The pressing relevance of live streaming to society today and the importance of its continued academic study are made particularly palpable in examples like those given here.

As the chapters found in this book demonstrate, live streaming, often misunderstood either as an internet fad or a simple source of entertainment, is deeply bound up with culture, both reflecting and meaningfully influencing the broader cultural context from which it emerges. For that reason, we present this work in a mode that is simultaneously analytical and polemical: calling for a greater engagement with live streaming not just as a set of technical tools or monetization systems, but as a mirror of the culture and an increasingly potent force shaping both major events and everyday life as they manifest online today.

Live streaming is many things at once. It is the possibility for making connections among people, for sparking joy across distance, for presenting oneself in true and empowering ways to the world. But live streaming is also corporate, controlled, a case study in the complexities and murky practices of platform politics. And live streaming is often a magnet for discriminatory behavior, exploitative labor practices, and the reactionary silencing of those whose messages or even whose bodies do not fit the dominant notions of the kinds of content that deserve to be seen. Above all, in its many manifestations, live streaming is culture: real life happening in real time.

The Age of Live Streaming

Although the term "live streaming" broadly describes the practice of broadcasting video live online, live streaming itself takes many forms, across a variety of platforms. Often, live streaming broadcasters, or "streamers," stream footage of themselves by appearing on camera or using a camera to broadcast their activities from a first-person perspective. Depending on the

particular streaming platform or event, different live streams may entail different levels of audience interactivity, offering opportunities for viewers to chat, express themselves through emotes, or leave tips. While live streaming today is often associated with the popular platform Twitch.tv, it also takes place on numerous social media and content-sharing sites, including YouTube, Facebook, and Twitter. Outside the US, platforms like South Korea's AfreecaTV and a number of live streaming services in China are among the important forces shaping the practice on a global scale. Live streaming is also a feature of community-oriented communication platforms like Discord and an important component of online sex work, exemplified by the popularity of webcam modeling sites like MyFreeCams and subscription-based services like OnlyFans.

Live streaming can also encompass many everyday online practices that users may not initially think of as live streaming: forms of real-time self-broadcasting such as the use of Zoom, FaceTime, and video call features in mobile apps. Increasingly, these tools have become a crucial component of everything from dating and hookups to court hearings. Simultaneously, many of the activities being live streamed on widely recognized platforms like Twitch fall far outside the realm of what many would consider typical live streaming content: from sleeping or eating to reading tarot or milking goats (figure 0.3). Especially at a time when worldwide health concerns have driven so much of professional and personal life online, live streaming is
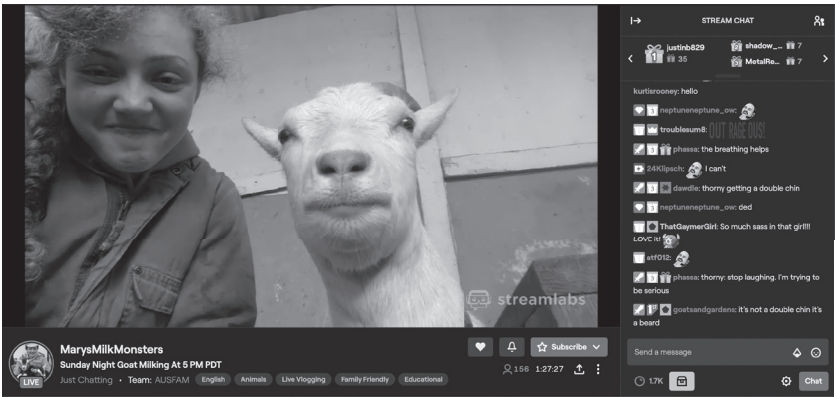

Figure 0.3
156 viewers watch goat milking live on the Twitch channel MarysMilkMonsters.

now everywhere. It is how we live our lives online today. This is the age of live streaming.

Indeed, although live streaming has a long history, its popularity has skyrocketed in the last five years. In 2018, when T. L. Taylor published her landmark study *Watch Me Play: Twitch and the Rise of Video Game Live Streaming*, live streaming platforms like the prominent Twitch.tv had already become part of everyday life for millions of people around the world, as both streamers and viewers. Since then, these numbers have continued to grow dramatically. According to news sources, Twitch alone went from 2.2 million registered streamers broadcasting content in 2017 to a height of 9.8 million registered streamers by the end of 2020 (Taylor 2018; TwitchTracker 2021). This is not to mention the nearly incalculable number of students and educators who moved online to live streamed classrooms during the pandemic, receiving their learning and sharing their own ideas remotely, via video. There are many ways to explain the rise of live streaming, which relate to but also extend far beyond the "new normal" of COVID-19 and the events of 2020 (Khobra and Gaur 2020). Live streaming can provide an important sense of community and connection for broadcasters and viewers alike, bridging the physical gap of distance by beaming real-time footage from the home of one individual into the homes of others. Live streaming also offers meaningful opportunities for self-expression, whether through playing video games, making art, creating music, giving lessons on how to apply makeup, cooking food, or sitting around and just chatting.

These forms of personal expression are only part of the story, however. Live streaming is also now being put to all kinds of professional and political purposes, including some that have had an immediate and undeniable impact on our society. On October 20, 2020, the New York congresswoman Alexandria Ocasio-Cortez (AOC) participated in a live broadcast of the video game *Among Us*, as she encouraged the nearly 435,000 viewers who tuned into the stream over the course of its run to vote in the upcoming US presidential election (figure 0.4). Months later, in January 2021, viewers around the world watched the inauguration of President Joe Biden via live streamed video. All the while, citizens have been Zooming into live streamed local town halls, making sense of the daily news by listening to commentary from their favorite live streamers, and occasionally watching in horror as live streamed public lectures given by marginalized people have been disrupted by harassers who use the affordances of live streaming to enact
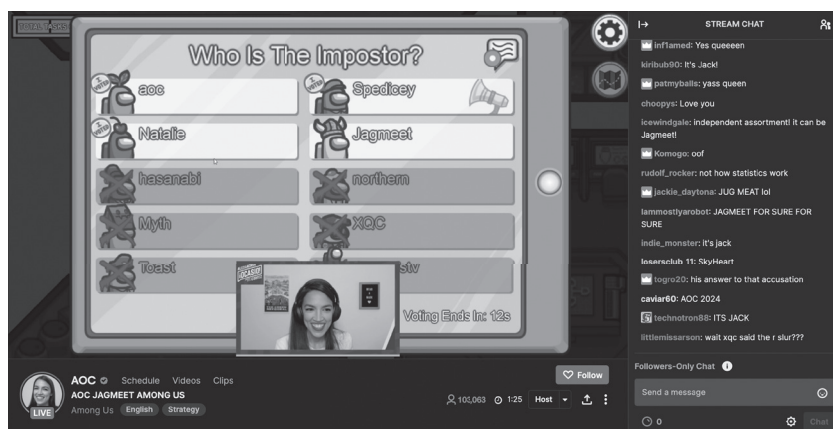
Figure 0.4
AOC plays *Among Us*, in an effort to encourage voter turnout in the 2020 US election.

online violence in real time. Live streaming is how the events of the world reach us today, and how we participate in them. More than that, though, live streaming is shaping these events. The technologies, interfaces, and norms that make up live streaming are now major forces in mediating (and thereby transforming) how we know the world and the people in it. This is not just life live streamed; it is life refracted through live streaming.

Above all, live streaming is a matter of culture, as each of the chapters in this volume evidences in its own fashion. We mean this in a number of ways. First, live streaming is shaped by culture, growing and adapting specifically in response to the larger cultural forces that surround it. For example, the tools and platforms that make up live streaming, as we know them today, have evolved (and continue to evolve with each new update and iteration) in response to shifting standards of technology design that are themselves deeply rooted in cultural assumptions. Second, live streaming shapes and regulates culture, exerting its own increasingly potent influence by setting the terms of possibility for what kinds of people and what kinds of content can be broadcast live. After all, if live streaming is rapidly becoming the central platform for sharing voices on the internet, where does that leave those who feel unwelcome, or even unsafe, in such spaces? Third, live streaming is itself a locus of cultural formation. Live streaming has already formed and will continue to form its own "live streaming cultures": subcultures and communities with their own unique characteristics.

Although they may have many things in common, different corners of live streaming culture often hold diametrically opposed views. In all these ways and more, just like any form of communication technology, live streaming can never be a culturally neutral set of tools, nor are live streams ever simply "virtual." Much to the contrary, they are imminently, materially real—and getting more real every day.

Contradictions in Live Streaming

Live streaming is a realm of productive contradiction, especially when it is viewed through the lens of culture. These contradictions speak to the powerful ways in which live streaming both exists within and overturns established expectations about the interplay between digital media, society, and everyday life. Rather than trying to resolve such contradictions—that is, to boil down the "truth" about live streaming—it is crucial to draw out and critique these tensions. Attending to the clashes between notions of what live streaming *is* or what it *does* can show us how live streaming itself serves as a microcosm in which broader issues of history, power, identity, and access play out. Many elements of these contradictions are already reflected in the existing scholarship on live streaming: a rapidly growing interdisciplinary area of research that comes together to build conversations across a range of methodological approaches and ideological investments. In addition to the topics addressed here, valuable research on live streaming has been done in many areas, such as communication practices of live streaming, the intersection of work and play in streaming, audience motivations and consumer practices, community formation, and genres of streaming related to creative expression (Gandolfi 2016; Ford et al. 2017; Pellicone and Ahn 2017; Faas et al. 2018; Johnson and Woodcock 2019; Sjöblom and Hamari 2017; Cai and Wohn 2019a; Diwanji et al. 2020; Hamilton, Garretson, and Kerne 2014; Seering, Kraut, and Dabbish 2017; Wohn 2019; Phelps and Consalvo 2020; Parker and Perks 2021; Haaranen 2017).

One such contradiction is the tension between understanding live streaming as fundamentally new or reframing it as an extension of older technological advances. On the one hand, streaming is very much of the present moment. However, the age of live streaming has always been a long time coming. It is often celebrated in news reports and corporate marketing copy as a fundamentally new phenomenon—an innovation or "disruption"

(to use a buzzword from the tech industry) that brings online video broadcasting into everyday life for the first time. In truth though, live streaming has a long history. We can locate its origins in many places: the introduction of broadcast media into domestic spaces through the adoption of the television set in the home during the 1940s and 1950s (Spigel 1992); the practices of "camgirls" in the 1990s and 2000s, whose early efforts to broadcast their lives to viewers on the internet have been documented by scholars like Theresa Senft (2008); the rise of online platforms structured around the algorithmic sharing and monetization of user content documented by Tarleton Gillespie (2010). From a more conceptual standpoint, we can place the very notion of streaming within larger aquatic discourses that make sense of technology dating back as far as the telegraph through metaphors of water and flow—a connection that Arun Jacob and Christine H. Tran explore in chapter 6. Situating live streaming within these longer histories matters because it highlights how individuals, communities, and societal forces that came before the present moment have played a fundamental role in shaping live streaming today.

Yet, at the same time, live streaming *is* new. Even accounting for each of these historical influences, we still see reflected in live streaming a large-scale shift in the relationship between technology and the everyday lives of those in internet-connected societies. Just as certain innovations of the Industrial Revolution, like the locomotive and the movie theater, offered a newfound mobility to women in the past, live streaming technology allows marginalized people in the modern era to transcend geosocial boundaries in profoundly novel ways. In an age of surveillance panic, the immersive, intimate nature of streaming manages to create a previously unimaginable bridge between the public and private spheres, bucking societal norms about what it means to see and be seen in the world when millions of people are regularly inviting strangers to visit their bedrooms virtually. As we open ourselves up to one another through this fundamentally fresh form of rich, real-time mass communication, individuals from previously disconnected communities forge new powerfully affective connections on a global scale. Broadcast entertainment and internet technologies can have a profound effect on the development of not only contemporary aesthetics, but also the modern economy and structures of governance. We see that live streaming represents a unique inflection point in which entrenched issues of the past, like misogyny, racism, homophobia, transphobia, ableism, classism,

and economic exploitation, are being challenged by the emergent logic of a revolutionary creative context. This tension between the history of live streaming and its radical newness, which potentially represents its own kind of break from history, is just one of the many challenging yet productive dichotomies that characterize live streaming.

Another contradiction lies in the relationship between live streaming and video games. It is true that video games, in the form of amateur gameplay and professional esports, hold a prominent place in the landscape of live streaming today, with platforms like Twitch (and Microsoft's Mixer before it shut down in 2020) emphasizing the centrality of gaming content. While live streaming has risen to prominence through other forms of social media as well, video games have played a sizable role in the phenomenon's widespread visibility and adoption. Live streaming has also come to play a central role in practices of the video game industry. Many new games are often announced first or debuted on Twitch; some games are being explicitly designed to be more "streamable" or incorporate the participatory affordances of live streaming into their gameplay (Conditt 2020). Live streaming has even changed the design of game hardware—one notable example is the Share button that came standard on the PlayStation 4 controller (and is now labeled "Create" on the PlayStation 5), making all gameplay, in effect, ready for streaming. Just as we cannot understand live streaming today without at least a partial accounting for video games, we cannot understand video games today without recognizing that streaming has had a huge impact on how video games are played, promoted, and designed.

Relatedly, since live streaming maintains such close ties to video games, understanding the cultural aspects of live streaming also requires understanding the cultural forces at play around games. Because the technological and corporate structures of live streaming have taken shape around gaming, live streaming of all sorts is caught up in the concerns of video game culture, including types of streaming that appears to have little to do with video games. Academics and media outlets alike have noted that the meritocratic, misogynistic, and racist beliefs that often run rampant in video game culture also strongly affect live streaming, in many cases creating significant challenges for already marginalized streamers and players (Grayson 2020). We can see this, for example, in Ge Zhang and Larissa Hjorth's work on gender performativity in the practices of women streamers on the Chinese platform Douyu (Zhang and Hjorth 2019), or in Brian Chan and Kishonna

Gray's writing on Black men's paths to microcelebrity in video game stream-
ing, "a space not made for them" (Chan and Gray 2020). Many of the con-
tributors to this volume, as well as this volume's editors, have also worked to
confront what Mia Consalvo has termed "toxic gamer culture" as it bears on
the cultures of live streaming (Consalvo 2012). Bo Ruberg, Amanda Cullen,
and Kat Brewster (2019) have studied how sexist attitudes toward women's
bodies set problematic expectations for streamers' legitimacy. Meanwhile,
Johanna Brewer, Morgan Romine, and T. L. Taylor (2020) have made a call
to the human-computer interaction (HCI) community to improve Twitch's
moderation tools in the name of fostering inclusive communities.

At the same time, live streaming is also about so much more than video
games. As illustrated by the numerous examples mentioned in the introduc-
tion, along with the many more that surface in the chapters of this volume—
live streaming is being put to purposes so vast and diverse that video games
now represent only a fraction of live streaming practices and their related
cultures. Even on Twitch, which has remained the dominant presence in
the live streaming landscape over the last half-decade, its "IRL" categories
have now eclipsed game-related categories in viewer numbers (figure 0.5).
Continuing to see live streaming as the stuff of video games risks overlook-
ing the many other forms of streaming that are taking place today, much
of them spearheaded by the very people that toxic gamer culture has often
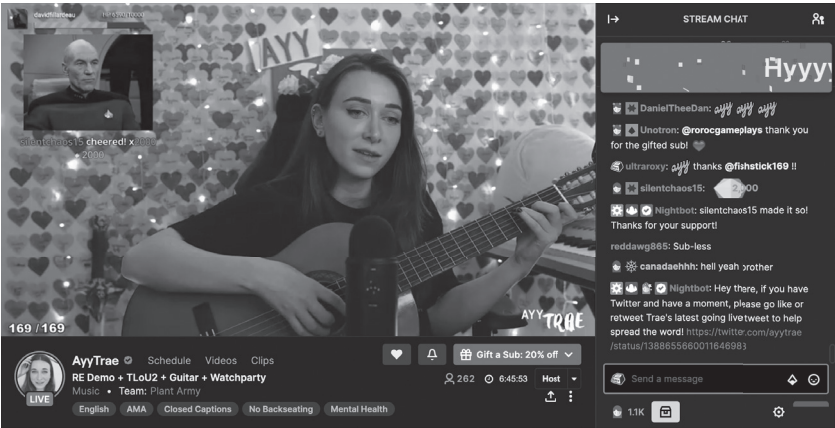

Figure 0.5
AyyTrae plays guitar while getting ready to host a *Star Trek* watch party—an example
of "IRL" streaming.

pushed aside. It also risks leaving the impact of live streaming tools on other realms of society and everyday life unaddressed and uninterrogated.

Live streaming also inhabits a paradoxical space between self-expression and control. Even as we celebrate the ways that live streaming allows individuals the opportunity to share their passions and proudly broadcast their identities, we must recognize that such freedom goes hand in hand with regulation. All live streaming platforms have their own community guidelines and terms of service: documents that dictate what kinds of content and behaviors are or are not allowed. Sometimes these rules helpfully limit condemnable behavior like harassment and the use of hate speech. However, just as often, such rules justify the exclusion of already precarious participants in the culture of live streaming—for instance, by deplatforming women streamers whom straight male viewers deem too "sexy," or banning LGBTQ+ content that is held to different standards of respectability than content about heterosexual sex and romance (Ruberg 2020). Toxicity in live streaming cultures itself functions as a mechanism of control, often attempting to set the terms for who can appear on screen, what they can say, and how they can say it. The possibilities for self-expression through live streaming are vast, but the realities of platform politics and digital cultures mean that those possibilities are also contested and far from limitless (Cunningham, Craig, and Lv 2019).

Similarly, in tension are the qualities of live streaming as empowering or exploitative. Many individual live streamers are, to some extent, their own bosses: setting their own hours, producing content of their choosing, and building their own personal brand. Through live streaming platforms, they have stages from which they can perform to the world—often from the relative comfort of their own homes. Yet, for all the power that live streaming puts in the hands of creators, it also has the potential to take power from them, such as in the form of overly extractive labor expectations. Streamers bring page views and donations to the platforms that host them; the most successful streamers are also the most lucrative for their platforms. Meanwhile, whether or not they see themselves as having attained success, streamers must perform myriad forms of labor, engaging in work that is simultaneously creative, entrepreneurial, physical, relational, and affective (Woodcock and Johnson 2019; Törhönen et al. 2021; Meisner and Ledbetter 2020). As Charlotte Panneton argues in chapter 18, platforms like Twitch have themselves fostered unreasonable expectations for streamers,

normalizing a culture of crunch that can lead to burnout and the deterioration of streamers' mental health. Is this empowerment? On whose terms, and at what cost, do streamers get access to the promised power of the live streaming age? These are questions, like so many in this volume, that resonate far beyond the domain of academic study, out into the wider landscapes of our society that grow more and more intertwined with streaming practices each day.

Particularly salient for the present volume is one final point of tension: the contradiction between live streaming as liberatory or discriminatory. Existing research has rightly highlighted the prominence of gendered and racialized harassment in streaming, as well as addressing the ways that issues of problematic labor practices and unequal access often fall along lines of identity and privilege (Uszkoreit 2018; Cai and Wohn 2019b; Guarriello 2019; Wang 2020; Chan and Gray 2020; Nakandala et al. 2017). A number of the chapters in this volume address toxicity and the hard work that streamers, moderators, and community members are undertaking to combat it. At the same time, there remains within live streaming the potential to operate as what Ruha Benjamin refers to, drawing on Black radical traditions, as a "liberatory" technology: one that resists the norms of "discriminatory design" (and, we would add, the discriminatory technoculture) in order to foster a "liberatory imagination [that] opens up possibilities and pathways" (Benjamin 2019). Live streaming is both discriminatory and liberatory at once. This becomes clear if we think back to the personal anecdotes with which we opened this introduction. LGBTQ+ folks often face derision and derogatory remarks on live streaming platforms; yet it is also on these same platforms that we find LGBTQ+ folks gathered at queer parties, joyfully dancing the night away. Black streamers are confronted with numerous challenges, ranging from viewer harassment to instrumentalization by streaming platforms, and yet live streaming is also the means through which untold thousands of viewers were able to access and lend their virtual presence to Black Lives Matter protests. There is no resolution to this contradiction; the answer lies in making the contradiction visible.

Live Streaming Culture: Mapping the Present, Imagining the Future

It is time for an intervention in the ways that we—as scholars, students, designers, and viewers—make sense of live streaming. Let us be clear in

our claim: There can be no truly meaningful study of live streaming that does not account for its relationship to culture. The interplays between live streaming and culture are vast, and their implications touch many fields of academic study, from social scientific studies of the internet to humanistic analyses of digital media to design-focused investigations of live streaming as a set of tools for HCI. Although many scholars have begun delving into research on live streaming (and some have already been experts on the topic for years), there has yet to be a centralized hub for conversations about the cultural implications of live streaming that cut across these disciplinary boundaries. Yet, we believe, it is crucial for perspectives on live streaming culture to be shared among students and scholars of many sorts. Technologists can learn from humanists and social scientists by coming to understand how the systems they design have the potential to perpetuate or resist dominant and often oppressive systems of power and privilege. Those studying internet technologies from a more theoretical perspective can benefit from the contributions of sociologists and anthropologists, whose methods of speaking directly to participants in cultural phenomena can bring rich and arguably more socially just insights to humanistic analysis. Meanwhile, those who research people—whether they are streamers, viewers, moderators, or technology professionals—can deepen their understanding of both technological systems and underlying conceptual forces that influence the lives of their subjects. Fittingly, you will find all these voices present in this volume, as well as those speaking from the perspectives outside academia.

This volume opens with a foreword by T. L. Taylor, whose landmark book *Watch Me Play* has served as a critical entry point into live streaming research for many contributors to this volume. Addressing topics like labor, identity, politics, community, and users' own efforts to develop technologies for streaming, Taylor reflects on how live streaming has grown and changed—and, in some ways, notably not changed—since she began her research on streaming a decade ago, in 2012. Following this foreword, the chapters of the volume have been grouped into five sections.

The first section of the volume, "Streaming beyond Video Games," demonstrates how live streaming has emerged from nongaming practices and, crucially, how it is increasingly becoming adopted in far-flung areas of society, art, and labor. In chapter 1, Bo Ruberg makes a case for a feminist retelling of the history of live streaming, centering the importance of webcam modeling, a form of online sex work, in narratives about how the

contemporary cultural phenomenon of self-broadcasting came into being and rose to popularity. In chapter 2, Gabriel Pereira and Beatriz Ricci explore how the COVID-19 pandemic inspired Brazilian musicians to use YouTube's live streaming feature to organize massive, interactive, virtual concerts, representing a notable shift in Brazilian cultural engagement with new media. Next, in chapter 3, Kelli N. Dunlap, Marie Shanley, and Jocelyn Wagner look at the role of mental health in live streaming, drawing from interviews to reveal the mental toll that streaming often places on broadcasters, creating anxiety and distress related to the constant threat of viewer harassment, long hours, work burnout, and the need to "act as shrinks to their fans." This section ends with chapter 4, in which Olivia Banner looks at the for-profit medical industry's growing practice of live streaming surgeries, part of marketing and public relations efforts. As Banner reveals, these live streamed surgeries, typically promoted through the rhetoric of technological innovation or sensationalistic voyeurism, are themselves deeply shaped by visual logics of racial and gendered inequity.

Live streaming offers inspiring new possibilities for self-expression, but the cultures that surround it are still often mired in issues of discrimination and harassment. In particular, the heightened visibility that live streaming provides often comes with increased risk for women, people of color, LGBTQ+ people, and those with disabilities. The volume's second section, "Tackling Toxicity in Real Time," looks at how discriminatory practices manifest in streaming spaces, as well as how these forms of harassment are confronted by live streaming broadcasters and other participants. In chapter 5, Olivia Rines turns to consider the creative tactics that streamers themselves can use to resist harassment, providing a detailed examination of how one streamer handles her trolls by creating parodies of "breaking news" segments, in which she comically calls out the viewers who have posted discriminatory or inappropriate content in chats. Arun Jacob and Christine H. Tran's reflection in chapter 6 on the history of disrupting live streams situates what has come to be known as "Zoom-Bombing" within the context of larger cultural ruptures—struggles for the right to make oneself seen within digital publics. Bringing race explicitly into considerations of live streaming toxicity, Aaron Trammell confronts the discriminatory whiteness of board game streams in chapter 7. By critiquing live streamed content produced by *The Dice Tower*, a popular hobby gaming review site, he draws attention to concerns about racialized labor and what he

terms "white geek privilege." Concluding this section in chapter 8, Andrew Zolides writes about how Twitch's moderation and reporting tools are frequently put to toxic purposes, often being weaponized by discriminatory viewers to harass marginalized streamers.

Among the many cultural factors that shape live streaming, issues of identity play a particularly powerful role. The third section of this book, "Broadcasting Gender and Sexuality," focuses on the interplays between live streaming and issues of LGBTQ+ experiences, gendered bodies, and the challenges of navigating identity onstream. This section begins in chapter 9 with Jin Lee's discussion of queer live streaming in South Korea, which reveals how LGBTQ+ YouTube streams have become sites of queer expression in the midst of an often-homophobic cultural environment. Similarly interested in queer streaming communities, then, in chapter 10, Christopher Persaud turns to online drag performances during the pandemic, exploring how queer nightlife pleasures translate to the live streaming format. By focusing on the event series *Black Girl Magic*, which features an all-Black cast of drag artists, Persaud brings a vital "queer of color" lens to studies of community-building through streaming. In chapter 11, Amanda Cullen examines the case of a woman who streamed while visibly pregnant; in the piece, Cullen addresses both the streamer's deft self-performance and her audience's entitled response to her body. Finally, in his interview with esports player Sasha "Magi" Sullivan in chapter 12, Matt Knutson presents an element of Sullivan's experiences with shifting gender pronouns during live streamed coverage of competitive gaming—offering a case that, as Knutson writes, "reminds us that the conditions of visibility in live streaming remain fraught."

Design is also central to live streaming, as an important facet of human-computer interaction in the landscape of contemporary internet technologies. The fourth section of this book, "Designing the Live Aesthetic," brings to the fore the cultural implications of the emergent designed aspects of live streaming platforms, such as their interfaces and communication affordances. Emma French explains in chapter 13 how "actual play" live streams have significantly reshaped cultural practices around tabletop role-playing games (TTRPGs), bringing new models of participation to games like *Dungeons & Dragons (D&D)* through the interactive tools of streaming. Next, in chapter 14, Evelynn Kersting, Janelle Malagon, and Casey O'Ceallaigh recount their experiences hosting *The Arena*, a weekly live stream about competitive game play that shifts the traditional format of academic

conversation to make it more accessible to a broader community of participants. In chapter 15, Michael DeAnda turns the lens of cultural critique to *Twitch Plays Pokémon*, a phenomenon in which a live chat community created a new narrative for the classic Pokémon video games, in order to examine how streaming's affordances can allow for modes of collective play that empower fans to transform the meaning of original media content. Finally, in chapter 16, Nathan Jackson offers a reading of the cultural meaning of Twitch emotes, bridging discussions of the body and design by critiquing the emojis that have come to characterize the language of audience participation on streaming platforms; specifically, Jackson looks at the PogChamp emote and its messy relationship to race and white supremacy.

Live streaming is not just a concern of the present; it is a sign of things yet to come. The final section of this book, "Revolutionizing Cultural Production," explores the disruptive implications of live streaming and its relationship to culture, interrogating the shifts that live streaming has already sparked in media cultures and prompting us to question what further change awaits over the digital horizon. Here, Will Partin posits in chapter 17 that live streaming represents a new "cultural industry," while also arguing that seeing live streaming in this light reveals streaming itself to be less novel than proponents often suggest. In chapter 18, Charlotte Panneton confronts the labor politics of live streaming and explains how Twitch has created a culture of "grinding," in which streamers must accept precarious working conditions in order to fit Twitch's "narrative of self-actualization and aspirational entrepreneurialism." Offering a more hopeful interpretation of live streaming's revolutionary impact on culture, Robyn Hope describes how the charity-focused live streams of speedrunners have positively reshaped the stated values of retro game fan communities in chapter 19. Finally, in chapter 20, Johanna Brewer concludes with a polemical call for digital media users to take inspiration from live streams and learn to "see like streamers": flipping the panopticon of internet technology and finding within the cultures of streaming new and powerful tools for revolution.

What emerges across these works is a rich, complex, and productively ambivalent picture of live streaming and its relationship to culture. Taken together, the chapters in this volume challenge us to find new ways to tell the history of live streaming while also offering a broader view of what live streaming is being used for and whose lives it affects. Some chapters raise concerns about how the cultures and affordances of live streaming create

breeding grounds for harassment, suggesting that the potentially liberatory tools of self-broadcasting might be put to discriminatory ends. At the same time, a number of authors address the agency and ingenuity of streamers themselves, who also author their own self-performance and find ways to reclaim the medium of live streaming. Intimacy, togetherness, and community are themes that cross these works, suggesting that streaming can valuably be used to bridge gaps between people, while also giving rise to problematic expectations around access: the assumption that viewers have the right to see or know or comment on intimate, embodied lives of streamers.

These chapters also serve as clear illustrations of how the technological and design elements of live streaming, like any other digital system, are deeply bound up with culture, and indeed often encode questionable cultural norms in their very design. Ultimately, this volume and its contributors challenge us to look to the future, training our eyes simultaneously on the possibility for harm and the potential for radical change that the cultural practice of live streaming contains within itself.

The Revolution Is Streaming Live

To conclude this introduction, we return to the images with which we began—images of a world in upheaval, a world in crisis, a world on the brink of change—and to this notion of live streaming as participating in revolution. Gil Scott-Heron's 1970 poem and song "The Revolution Will Not Be Televised" draws its title from a slogan of the 1960s US Black Power movement, giving voice to a rejection of the appropriation and exploitation of social action movements for racial justice by the commercial media. In each verse, Scott-Heron parodies and rejects different aspects of television as both a business and a culture: "You will not be able to . . . skip out for beer on commercial breaks," he sings. "The revolution will not give your mouth sex appeal, the revolution will not make you look five pounds thinner" because, as he repeats, "the revolution will not be televised."

Thinking about the revolutionary potential of live streaming while listening to Scott-Heron's iconic piece, so often referenced in popular culture and already the inspiration for so many plays on words from media studies, is both jarring and fitting. If Black Lives Matter protests and other forms of citizens taking to the streets to demand equality in the midst of a global pandemic are the revolution (and they are), then the revolutions of our

contemporary live streaming age will most definitely be televised: captured, broadcast, and consumed via live streaming, a mode of viewership that is quickly becoming the dominant televisual medium of the twenty-first century. In many ways that Scott-Heron might well take issue with, thanks in part to mobile phone camera technology as well as live streaming, the revolutions of today go hand in hand with today's media industries and practices of media consumption.

Yet, if we return to Scott-Heron's words, we find something unexpected in his concluding lines. "The revolution will not be televised," he intones one final time. "The revolution will be no rerun, brothers. The revolution will be live." And there it is—the sticking point at the crux of live streaming's revolutionary potential: The revolution will be live. If we interpret Scott-Heron's piece through the framework of today's media landscape, we see a stark contrast between prerecorded media (which becomes the stuff of reruns and commercial breaks) and live streaming, which brings its content to viewers in real time. Live streaming, then, still has a potential place within the revolution: the possibility of offering a sense of there-ness, of urgency, of participation that challenges the passive, viewing consumption that Scott-Heron and those after him who have drawn inspiration from his words resist when they insist that the revolution will not be televised. The revolution may not be televised, but perhaps it can be live streamed.

And, in this way, live streaming itself may be revolutionary. This is a slippery claim—one that risks reiterating technoutopian and corporate tech rhetorics about the infinite "revolution" of new devices. But it is worth lingering with this provocation and allowing it to hang over the chapters to come. How might live streaming be put into the service of the revolution? Can a set of tools and platforms be reactionary in nature while supporting radical ends? And, if live streaming is already its own revolution, who gets to claim that revolution as their own?

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