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Hip hop producer-hosts, beat battles, and online music production communities on Twitch

by Jason Ng and Steven Gamble

Abstract

The livestreaming platform Twitch has become a home for online beat battle events, communal competitions among music producers which originated in hip hop culture. This paper investigates the factors that led to the adoption of Twitch by beatmakers and the formation of communities based around participation in livestreamed events. We consider the event hosts crucial to establishing beat battles on Twitch, and define them as a new creative industry actor, the 'producer-host', whose novel cultural practices combine several roles: performing artist, music production educator, event manager, livestream broadcaster, and community manager. Drawing on 18 months of ethnography, active community participation, and interviews with three producer-hosts, we analyse beat battles on Twitch to understand participants' motivations and the consequences of these cultural interactions for music producer communities. This article contributes to scholarship on expanding uses of livestreaming platforms and debates around the democratisation and platformisation of cultural production.

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Introduction

The challenges to social gatherings and mobility presented by the 2019 novel coronavirus pandemic (COVID-19) illustrated the significance of digital technology for maintaining communities and industries across the globe. During these extraordinary circumstances, individuals quickly adopted existing and

emerging Internet technologies, whether to work from home or maintain relationships from afar. In addition to a desire for social connectivity to counter the effects of physical isolation, a broader diversity of platform uses and digital trends emerged. As a result, both technology developers and consumers rushed to establish new means of sustaining connections with an enterprising intensity. In particular, the music industries experienced disruptions including restrictions on live performances and delays in physical distribution due to postal closures, with significant economic consequences. Creative industry personnel such as artists and event managers faced serious challenges due to strict public health regulations placed on physical congregation and travel. Consequently, the pandemic encouraged individuals to test new practices related to music production, live performance and communal participation.

In early 2020, a number of hip hop producers began broadcasting on the video livestreaming platform Twitch, originally known for its emphasis on video gaming (Taylor, 2018). Indeed, the dominance of video game streams and eSports have sometimes overshadowed other forms of creative practice broadcast on Twitch, such as the domestic performance of intimacy (Ruberg and Lark, 2021) and arts education (Pfeiffer, *et al.*, 2020). It has been suggested that research into how musicians and music communities use Twitch would both nuance and expand existing scholarship on the platform [1].

Although the role of music on Twitch has gradually diversified over the course of the platform's history, most studies of music on Twitch have focused on live concerts, referred to variously as e-busking (Thomas, 2020) or portal shows (Rendell, 2021). Recently, however, newly online forms of cultural media production have emerged. The stay-at-home health measures of the pandemic gave rise to an increase in the use of Twitch for livestreamed beat battles: events combining entertainment, education and group participation among music production communities which diverge from traditional music performance practices. The sudden popularity of these online events, including a two-hour session at Glitchcon, the 2020 virtual Twitch convention, demonstrates the need for urgent investigation into the social and technological interactions at play. This study addresses these new interactions in detail and asks: what factors have led to the development of live-streamed communal beat battles?

We propose that a central figure in this development is a new creative industry actor, the 'producer-host' [2], whose cultural practices combine several formerly distinct roles: performing artist, music production educator, event manager, livestream broadcaster and community manager. We show that producer-hosts use an array of digital technologies spanning digital audio workstations (DAWs), instant messaging platforms, voice call services and — the focus of this article — livestreaming platforms (most popularly Twitch) in the development of communities and cultural exchanges online. While there are precedents in the form of music producers interacting online (Bennett, 2016) and existing uses of livestreaming technologies by musicians (Rendell, 2021; Vandenberg, *et al.*, 2021), producer-host practices are distinguished by a reorientation of broadcasts around active communal participation in informal, competitive, and educational beatmaking events.

To investigate this new type of communal cultural production taking place on livestreaming platforms, we used a mixed-methodology combining practice-led ethnography, discourse analysis, and in-depth interviews with three producer-host case studies. Given the unprecedented nature of these technological engagements, we analyse and discuss hosts' and beatmakers' motivations for participating in Twitch beat battles, as a means of understanding how these events and communities have developed.

Cultural production on Twitch

Emerging at the intersection of broadcast media and real-time communication, Twitch is well known as a leading platform for livestreaming cultural activities. It has also been argued that the interactive elements of the platform — voice and video broadcasting, live text chat, channel points, follower and subscriber functions among them — enable various participatory experiences (Taylor, 2018). Twitch's popularity has

broad implications for cultural production and infrastructures of social participation. The platform introduces dimensions of active engagement to quasi-televisual experiences which facilitate ‘a strong sense of presence and community, created through the interactive affordances of the platform’ [3]. Hosts and their audiences are, however, distinguished by unique extrinsic and intrinsic motivations. Hosts seek challenges, pursue self-promotion, enjoy self-expression and explore the economic potential of broadcasting (Zhao, *et al.*, 2018), while audience incentives typically include fulfilling desires for social interaction, a sense of community, entertainment, information or to redress a lack of external support off-line (Hilvert-Bruce, *et al.*, 2018). Despite these diverging motivations, Twitch has become an important space for online cultural exchanges between creative producers and fan communities (Lingel and Naaman, 2012). Twitch shapes digital public spheres for multidirectional participation in the model of Jenkins’ (2006) influential work on participatory culture and media convergence.

It is tempting to frame livestreaming platforms through a digital-utopian lens that valorises ‘amateur and community media’ by asserting ‘hopeful ideas about the democratization of cultural production’ [4]. Optimism about the potential of digital media platforms to democratise culture may overlook the political economy and corporate governance of such platforms. Media sites like Twitch capitalise upon the unpaid labour of individual creators, not to mention the valuable attention of their viewers (in line with critiques of the ‘attention economy’ [van Dijck, 2013]). While critics acknowledge the benefits of open broadcasting on livestreaming platforms, it is clear that platform agendas are still controlled and ‘shaped by elites and corporate power rather than a radical alternative’ [5]. Moreover, Twitch’s impetus towards monetisation can powerfully affect the motivations of cultural producers (Johnson and Woodcock, 2019), creating tensions around commercialisation, professionalisation, and the dynamics of community participation.

The notion of a ‘following’ has emerged as an important and visible measurement of online popularity (especially in the music industries), an umbrella term for audiences and consumers of a particular individual’s cultural production (Appel, *et al.*, 2020). Industry stakeholders and corporations usually consider the size and demographics of a cultural producer’s following to determine whether they merit interactions such as sponsorships and partnerships. On Twitch, a livestreamer’s following partially determines their market potential, as audience growth has a direct impact on the consumption of their various cultural products: streams, events, merchandise and even community initiatives. This is one of the major factors that determines the boundaries for inclusion in Twitch’s Partner Program. Partnering with the service provides both monetary and promotional benefits for specially selected streamers who satisfy an extensive range of criteria including a sizeable following (Törhönen, *et al.*, 2021). Twitch (2021) states that partners gain revenue from subscriptions, a share of advertisement revenue, various platform features including preferential algorithmic recommendation to viewers (noted implicitly) and access to Twitch-hosted training events on channel growth. The official framing of the partnership programme champions the labour of streamers as creative entrepreneurial work that enables individuals to leverage cultural capital (*i.e.*, reputation, skill and following) in exchange for symbolic benefits and financial sustainability (Johnson and Woodcock, 2019). Twitch therefore stands as both a powerful corporate gatekeeper of creative entrepreneurs and a major funder of online cultural production.

‘New amateur’ online music communities

Twitch has grown in popularity during the COVID-19 pandemic as various creative communities have adopted online technologies. For instance, researchers have recently investigated the migration of music concerts to livestreaming platforms and the effects of that transition on creative expression, audience connectivity, and economic relief (Rendell, 2020; Thomas, 2020; Vandenberg, *et al.*, 2021). The need for digital alternatives during this period highlights potential precarity brought about by over-reliance on concert revenues in the contemporary music industry. The movement of such cultural activity to the Internet can be understood as an instance of the ‘platformization of cultural production’ where platform architecture both enables and alters ‘the production, distribution, and circulation of cultural content’ [6].

Some online concerts attempt to subvert traditional artist-audience dynamics, emphasising parasocial interactions and 'the social connections of translocal and virtual scenes' [7]. Even while livestreamed performance is constrained by corporate platform logics, music communities have therefore found new ways to stay connected using live events on Twitch.

However, Twitch is also being used to facilitate the development of — and sustain participation in — transnational communities dedicated to music production. Such practices can be differentiated both from Twitch's traditional uses (especially video game livestreaming) and its emerging applications for music concerts. This is an important phenomenon given that livestreams have become a critical means of sustaining globally diffuse communities. Participants in Twitch-based communities are afforded a range of gratifying interactions on livestreams, exploring their own identities in real-time (Wulf, *et al.*, 2020) through dialogic processes of relating to others online (Partti, 2012; Wenger, *et al.*, 2009).

Alongside shifting notions of self-identity, the roles and practices of participants in online music communities are developing dramatically hand in hand with broader trends in the music industry towards portfolio careers and entrepreneurship (Haynes and Marshall, 2018). This study focuses on beatmaking communities where, in addition to a more passive viewership, many participants are themselves music producers who span the creative roles of beatmakers, composers, songwriters and audio engineers [8]. Rather than the archetypal figure of the rock record producer (Frith, 2012) the form of music production spotlighted here is situated within the contexts of hip hop culture (Gouly, 2020; Schloss, 2004) as well as electronic dance music and DJing (Butler, 2006). The active contributions participants make to livestreamed events exemplify Bruns' (2016) work on produsage and Prior's [9] term 'new amateurs', used to characterise individuals who partake in social music-making practices such as online collaboration and sharing with friends and family [10].

New amateur practices have developed additional dynamics of participation in the specific case of livestreamed beat battles. These online events resemble the fan remix competitions explored in Bennett's (2016) and Michielse's (2016, 2013) research on Indaba Music [11], Mashstix, ccMixter, and other artist-endorsed remix contests, although they differ in three key ways. First, while sampling is a central feature of hip hop and electronic music production (Schloss, 2004), samples are not always commercial songs with freely provided stems (specially prepared audio files) for the express purposes of remixing. Rather, in beatmaker communities, sampled material is often drawn from home recordings, unauthorised extractions from recorded music (ripped from YouTube, for example), or snippets abstracted from other media. Second, official fan remix competitions are authorised by record labels with the primary goal of promoting signed artists' original material (even in cases where fans' creative work is endorsed or even distributed as an official remix). There is no such directionality in community-based production contests, although they tend to help promote the cultural production of competition hosts and other event participants. Third, the remix contests studied by Bennett and Michielse often transpire via Web sites with limited participatory functions, whereas Twitch expands the technical toolkit offered to hosts and participants, with multidirectional dialogues occurring simultaneously in a virtual public space. With these departures in mind, creative practices demonstrated in other formats are increasingly reconfigured and mediated on Twitch by new amateur music producers who have adopted the role of the livestream host.

The producer as entrepreneur and stream host

From amateur laptop musicians (Rambarran, 2016) to high-earning industry veterans, music producers are creators and collaborators immersed in creative communities. Producers have (and, due to industry pressures, have had to) become increasingly interdisciplinary with their practice, assuming additional roles: alongside their musical practices, some are their own promoters, managers and social media content creators (Haynes and Marshall, 2018). With the economic barriers to professional music production technology such as DAWs gradually diminishing, a growing number of producers have developed

instructional videos to demonstrate their beatmaking practices (Brett, 2018). An endless array of beat production tutorials on video sharing platforms like YouTube provide a kind of informal music education among hip hop communities. Brett [12] argues that beatmaking videos, and the viewer discourses which accompany them, 'inhabit the liminal spaces between producers and consumers, amateurs and professionals, and between formal instruction and performance'. These new amateur forms of creative practice have given rise to fertile online spaces for cultural exchange, education and sociality among producers. Many individuals engaging in Web-based beatmaking cultures have, for example, created or joined communities on online platforms ranging from social networking sites (for instance, the Facebook group 'Beatmakers united', which has around 33,000 members as of September 2021), community management platforms (*e.g.*, the 'Prod.By' Discord server, with close to 7,000 members), and increasingly those that are mediated on livestreaming platforms.

Now, many producers are beginning to host their own Twitch channels [13]. Through the adoption of livestreaming, 'the [music] streamer is a paragon of a modern digitally literate individual' and can be understood as 'part disk jockey, part [music] critic, [and] part entertainer' [14]. This is an interesting turn for Twitch, suggesting an expansion of cultural uses of the platform to facilitate new forms of creative industry work. Beyond the original province of video games, livestreaming music performances has offered hosts the means to attract viewers, develop communities and receive economic rewards (Rendell, 2021; Thomas, 2020). These existing uses indicate that Twitch provides a legitimate field for diverse types of cultural production and entrepreneurship. This is especially relevant to the wave of music producers examined in this article, given the history of enterprising behaviours already demonstrated on the platform in the pursuit of personal, social, cultural and economic outcomes (Johnson and Woodcock, 2019; Törhönen, *et al.*, 2021; Zhao, *et al.*, 2018).

Although accelerated by COVID-19 restrictions, the uptake of livestreaming and community management tools by music producers corresponds with trends of 'technological change and the virtualization of music production and distribution', processes which contribute to 'differentiated configurations of value creation' [15]. Nonetheless, it is important to avoid a technologically deterministic view [16]. With social and financial incentives often closely intertwined on Twitch, the livestreaming practices of producers may be developed along a continuum of community-oriented and commercial motivations. As Twitch is a burgeoning space for music producers as stream hosts, we use the term producer-hosts to distinguish their activities from performing musicians researched in other livestreaming contexts (Rendell, 2021; Thomas, 2020; Vandenberg, *et al.*., 2021). This term clarifies music producers as a specific cohort of practitioners increasingly salient in the Twitch category 'music production'. The producer-host framing enables detailed investigation of how music producers use livestreaming technologies, considering specific gratifications and outcomes that emerge from their practice, and consequences for the communities they service and support.

Methodology

Our positionality in relation to the topic is one of close and sustained participation. We consider ourselves members of the beatmaking communities that form our case studies, which are geographically situated in the Australian and Pacific region, and we make additional engagement with producer-hosts based in the U.S. While this proximity risks introducing biases and cultural blindspots, it also enables a highly reflexive and sustained practice-led ethnography [17]. During our fieldwork we took care to address our presentation as digital ethnographers within what Abidin (2020) calls 'spectrums of conspicuousness', such that it was known among these communities that we were both participants and academic colleagues researching the very practices in which we partook.

Given the need for prolonged online engagement with producer-hosts and their communities during the pandemic, we felt it appropriate to restrict this introductory article to three interconnected hip hop-oriented

case studies. The producer-hosts we studied ran streams that varied in terms of audience size, sustainability, geographical location and the intensity of their local-global connectivity. Two case studies were situated in Naarm (Melbourne) and one in New York (with additional consideration of two other U.S.-based examples) [18]. Between March 2020 and September 2021, we participated in over 120 events streamed by producer-hosts, accounting for about 400 hours of community contact. This enabled long-term participant observation including discourse analysis of live chat and messages archived on Discord, which supplemented our understanding of community dynamics.

Interacting with producer-hosts only via Twitch would have risked limiting the range of potential findings to what was publicly mediated online. Therefore we conducted three semi-structured in-depth interviews (in person and via Zoom) in March 2021, with follow up correspondence between July and September 2021 providing further insight into producer-hosts' cultural production, uses of livestreaming technologies, and consequences for their communities. While limited to a small cohort of case studies, this mixed-methodological approach yielded rich empirical qualitative insights into the dynamics of online beat battles, the development of communities, and the nascent facilitating role of the producer-host.

Case studies

While beat battles have long been a competitive feature of hip hop culture (with some similarities to battle rapping and breaking, for instance), their migration to the Internet highlights their communal and participatory affordances. In his study of DIY music and social media, Jones [19] identifies how competitive aspects of cultural practice 'can be arranged in such a way as to bring benefits to the community as a whole' while resisting market intervention. The use of competition by producer-hosts on Twitch similarly plays a role in developing producer communities in a convivial way, generating reciprocal value for streamers and audiences. It is important to note, however, that this does not function identically among communities of different sizes. The emphasis on collaboration and connection is sometimes minimised when celebrity producers — for instance, Timbaland, Monte Booker, and IllMind — run Twitch streams, revealing tensions between community-directed programming and explicit commercialisation [20].

One of the most prominent producer-hosts is Kenny Beats, a producer, DJ and songwriter well known in mainstream hip hop culture. During an early surge of online cultural activity in response to COVID-19 restrictions, Kenny began livestreaming a weekly beat battle on his Twitch channel [21]. At these events, Kenny shares an audio sample (specific source material) which producers download, manipulate (colloquially, 'flip') and augment, usually by adding other samples and synthesised instruments. Once the time limit (usually one to two hours) is up, participants submit their original compositions for audience evaluation. The ten beats rated highest by other viewers are played live on-stream then ranked by Kenny and his guest judge(s). Finally, the winners are announced and awarded prizes, which include production equipment, software and cash alongside promotion (naming and publicly endorsing the participants).

The popularity of the format (with 250,000 channel followers and up to 30,000 viewers per stream) led to a Kenny Beats 'world final' battle being hosted at Twitch's 2020 virtual convention GlitchCon. The event brought together 10 previous finalists from around the world competing for $10,000 and a track to be mixed and mastered by Grammy Award winning audio engineer MixedByAli (known for his work with Top Dog Entertainment artists such as Kendrick Lamar), which exemplifies the involvement of top-level traditional music industry actors in this emerging online practice. The beat battle format echoes the competitive spirit of televised talent shows focusing on musical performance. However, its emphases on peer evaluation, a low barrier to entry and communal interaction demonstrate a modernisation or updating of creative competitions, enabled by the participatory dynamics of Twitch and during a period of physically restricted global culture. As Kenny Beats' stream was cited by our interviewees as a blueprint for their own events, we take it to represent a professional model of beat battles where celebrity artists, producers of all experience levels and hip hop fans seeking entertainment intersect.

Drawing inspiration from Kenny Beats, other producer-hosts have developed community configurations based around similar formats. For instance, the beatmaker, performing artist, and YouTube video producer bad snacks created a Discord server in May 2020 to connect more closely with her audience during international lockdowns. In August 2020, she began livestreaming beat battle competitions in addition to feedback sessions (offering constructive criticism on audience-submitted productions). Rather than celebrity endorsement — vying for the attention of an A-list producer — appearing as a primary motivation for competing in such beat battles, participation in smaller (less publicly known and popular) groups resembles collaboration in a community of practice [22]. In this framing, producer-hosts can be understood as stewards, which Wenger, *et al.* (2009) describe as individuals who usher participants through digital activities while brokering connections between group members and other virtual communities. The producer-host therefore acts as an intermediary using competitive and collaborative dynamics to generate and maintain an online international community dedicated to music production, leveraging audience participation into livestreams to satisfy their own commercial and community-oriented motivations. The following case studies of three producer-hosts are characterised by different stream sizes and styles of communal interaction. Given their varied levels of expertise, motivations, investments, responsibilities and outcomes, they warrant detailed analysis.

Spell's beatswaas [23], community sample flips, and beat battles

Spell (sometimes known as DJ Spell or spell316) is a Māori DJ and producer from Kirikiriroa, Aotearoa (Hamilton, New Zealand) who currently resides in Naarm. He is a DMC World DJ competition winner and social media personality with approximately 50,000 Facebook followers. Spell runs a Twitch stream that has generated a large audience during the COVID-19 pandemic, typically with a thousand live viewers. He became a Twitch partner in April 2021 with upwards of 350 monthly paid subscribers. A previous winner of at least two of Kenny Beats' beat battles (with such consistent success that he was disqualified from further participation), Spell also won the majority audience vote and placed in the top three of the GlitchCon final. His Twitch channel features beatmaking instruction (sharing his DAW screen as he produces music) and three weekly community events, each with slightly different dynamics: beatswaas, where producers submit any material for (often comically blunt) criticism; the community sample flip, a time-bound low-stakes competition using a specific sample, with audience feedback; and more formalised beat battles where submissions go head-to-head in a single-elimination format to determine the winner as voted by the audience. Spell's streams frequently punctuate music production with informal DJ performance, chat and humour.

'Tap in to level up': Producer workouts hosted by Swerv

Swerv (whose online username is badmonswerv) is a Thai-Vietnamese DJ, event manager and producer from Naarm who runs what he calls a weekly 'producer workout'. In contrast to the other producer-hosts discussed thus far, Swerv's channel has a stronger geographical connection to his regional community as many of the producers participating are local artists (including Foura, Amin Payne, Jordan Astra, Jacob Aedam and Max Glyde). In the early stages of the pandemic, there were over 200 live viewers of his channel, which has now reduced to a smaller, consistent cohort of around 25 viewers. Swerv's streams focus on providing a supplementary space for producers to connect during the pandemic, to share music and beatmaking tutorial videos, to learn from one another and ultimately to improve (hence the 'workout' metaphor and the gamifying stream title we quote here). An accompanying Discord server is used to submit beats, promote new releases and local events, discuss collaborations and store community resources such as free-to-use samples.

The Phlip with Phuse

An early participant of Swerv's streams, the New York-based, African American producer Phuse (appearing as phusemusic) created his own regular workouts for producers who live in the Eastern Standard time zone. Relaxed, non-competitive beat battle events hosted by Phuse, dubbed The Phlip, initially ran on Twitch from August 2020 in the style of Swerv's producer workouts, streamed to an audience of at most 10

specific participants. Phuse abandoned the Twitch stream format in October 2020. Until March 2021, he instead paired participation on a Discord server with live video calls using Zoom, which he felt was more appropriate for the intimate community of producers.

Analysis and discussion

The case studies, along with our ethnography and discourse analysis, indicate that a new form of communal cultural production is taking place on Twitch, with the producer-host acting as an intermediary between technological affordances and new amateur collective motivations. Below, we elaborate on our research findings from the producer-host case studies. There are a number of factors contributing to the formation of music communities around livestreamed beat battle events, which we identified and organised into five themes: economic sustainability, personal and professional gratifications, online followings, community identity and belonging and informal community-based education.

Economic sustainability

Making money emerged as a key consideration of producer-hosts given that most of their streaming activity began as an alternative to live performance events cancelled due to COVID-19 restrictions. Unlike other Internet platforms which have faced extensive criticism for their marginal revenue dividends (Aly-Tovar, *et al.*, 2020), the Twitch subscription model may offer a more direct consumer-to-producer economic exchange. For streamers not partnered with Twitch, 50 percent of their subscription revenue (priced at US$5 per month) is engrossed by Twitch, not unlike traditional royalty settlements involving managers, promoters and record labels. The Twitch partnership model and its higher revenue share therefore offers a clear financial incentive for producer-hosts. In addition, streamers can be gifted subscriptions by viewers (automatically subscribing other logged-in viewers) and partners can be donated bits (a virtual currency associated with ‘cheering’) in exchange for their performance, inviting comparisons to e-busking practices (Thomas, 2020).

Twitch partners can be offered a potentially economically sustainable income stream, with top-tier streamers earning upwards of US$1 million annually. Although producer-hosts (with the notable exception of Kenny Beats) have been unable to attain the market value of Twitch’s highest earners, they are increasingly realising the platform’s economic potential. Concerning his livestreaming revenue, Spell reflected:

> I can pay my rent with Twitch [...] I don’t have to do all that extra shit. I don’t have to DJ any more. [...] I mean, I’ll do little things here and there, but now I can kind of pick and choose, whereas before I just said yes to everything, even if I didn’t want to do it, ’cause I was poor. I needed the money (Interview with Spell, 2021).

Spell’s testimony demonstrates the legitimacy and financial security offered to streamers who can secure a sizeable base of regular subscribers. Partnering with Twitch provides him with a greater degree of freedom in choosing work opportunities, avoiding obligations like in-person music performances that were previously necessary for basic income.

Although each of our interview participants described some prior experience of online cultural production, Spell in particular has applied years of creative practice — producing comedy videos, competing in DJ battles and hosting online events — to inform the running of his stream. This indicates the application of a cultural entrepreneurial capacity that is similarly deployed by streamers elsewhere on Twitch (Törhönen, *et al.*, 2021) and, more generally, by cultural producers in the creative industries [24]. Cultural

entrepreneurship is a useful frame for understanding how popular producer-hosts are leveraging their prior experiences, audience, and cultural capital to attain social, cultural and economic advantages online. However, relative newcomers to livestreaming, such as Swerv, have also identified promising routes to generating income:

> In terms of financial [impacts], it has helped a little bit [...] it didn't replace, but it, it helps with the income when I wasn't able to work. And that's income through when people subscribe to your channel or they donate directly to your stream (Interview with Swerv, 2021).

While there are evidently some opportunities to make money as a streamer, this field of creative labour is still emerging, at least in how it offers newer producer-hosts consistent revenue. It has been a significant factor in enabling specific types of producer-host labour and forms of cultural production. Ultimately, however, Twitch's business model is designed around extracting economic value from video game and chat livestreams, so it may not provide the most sustainable income for producers (and other musicians). The ecosystem of Twitch — like other social and digital media platforms — is 'composed of complex techno-economic dynamics between platform owners and complementors' that are fundamentally exploitative of cultural producers, leveraging power asymmetries 'in order to aid in the evolution of platforms as technical objects' [25]. Therefore, although the monetary benefits appear promising for enterprising producer-hosts, how the dynamics of commercialisation and platform control affect the long-term sustainability of such cultural production is yet to be seen.

Personal and professional gratifications

Aside from economic incentives, a number of professional, personal and symbolic motivations typically drive Twitch livestreaming practices, satisfying intrinsic needs and desires similar to those of video-game streamers (Zhao, *et al.*, 2018). For one, it is clear that many producer-hosts derive personal satisfaction from running entertaining streams, hosting events and interacting with the communities that comprise their audiences. Spell conceptualises the stream as a liberating expression of self, likening it to the emotionally cathartic effects of therapy.

> Spell: You know when you go to a psychologist, and you fucking ... [gesturing hands outwards from torso]
>
> Interviewer: Release?
>
> Spell: It's something like that for me. It's more about me than it is about everyone else. And it's more about me being able to just do whatever I want, and rant, and throw my ideas on everyone, you know, and there's an exchange. There's conversation that happens (Interview with Spell, 2021).

By contrast, Swerv considers his work on Twitch a form of reciprocal investment back into his local music community, serving as an event manager, steward, and promoter:

> The goal was to teach my process. But then it, now it's turned into building a whole community and connecting people and making sure those who weren't able to have someone to help them early on in the production game, they now have someone who's there to guide them and give them assistance. It's also there to help people who are experienced in music production, but who also need to get out there more, share their work more so they get more well-known which helps with [...] their

> releases in the future (Interview with Swerv, 2021).

Surprisingly, the opportunities to connect community members and encourage peers to professionalise became critical gratifications for Swerv, even though his original intent was more in line with individual online beatmaking instruction (as in Brett, 2018). Comparably, Phuse, who committed to a full-time career in music production in early 2020, approached his workouts with enthusiasm to meet peers dedicated to their practice and foster meaningful creative exchanges with them: 'I just wanted to get better at producing and I just wanted to learn from producers [...] I just always wanted to kind of surround myself with people that are interesting and motivated and talented and cool' (Interview with Phuse, 2021).

Among the three producer-hosts studied, there is a shared sentiment that their events might also promote the public and professional visibility of their work, while offering participants a promotional space to showcase their own creative practices. These personal and community-oriented incentives have been critical for establishing cultural exchanges, communities of support and professional networks through beat battles. These events often cross over to other livestreams and spread to other online media platforms. Artist profiles on social networking sites like Instagram are often secondary sites where content from Twitch is reposted by producer-hosts and participants to help to cross-promote cultural productions, typically with a goal of growing mutual public followings.

Online followings

In addition to prior experience, Spell's substantial pre-existing following on social networking sites has seemingly contributed to the success of his beat battle events and his work as a producer-host on Twitch. This success echoes the argument of Haynes and Marshall (2018) that for the majority of creators, social media is more useful for sustaining audiences than building new ones. Spell's high status may also come at the cost of constricting opportunities for aspiring artists, reflecting a winner-takes-all trend observed both in the music industry and on Twitch (Johnson, *et al.*, 2019). New producer-hosts like Phuse, for example, find themselves at the mercy of a saturated streamer marketplace, and their efforts can evidently be short-lived.

However, the competitive aspects of livestreaming can be offset by building networks of peer-to-peer exchange, leveraging the individual followings of each participant to help promote other community members. Workouts like Swerv's mobilise such strategies by combining the potential audiences of each participant's cultural production. While this community-oriented approach may not represent a significant shift in sustainability within the creative industries, it does provide support for independent artists who struggle to self-promote and build a following effectively.

Cross-promotion between producer-hosts operates as both a seal of approval from peers and a means to direct traffic to other community members' channels. Unique to Twitch, the raid function — where viewers are automatically redirected to another active livestream — offers a particularly important opportunity for community building through inter-channel audience generation:

> It's a good way to cross-pollinate the audience. I've been exposed to some really cool people through raids [...] and also it's like that stamp of approval from the person that's raiding you, you know? Kenny's raided me a couple of times. Stamp of approval! 'We're raiding Spell 'cause he's cool. Everyone, let's go watch Spell. Have a good night', you know? And then everyone migrates over to the next show — me, or whoever, you know — so that's very cool. (Interview with Spell, 2021)

Similar to the raids he has received from Kenny's channel, Spell has raided Swerv's stream, endorsing Swerv's producer workouts among his following and thereby bridging their communities. Consequently, many beatmakers began participating on both channels and providing support to each producer-host through subscriptions (and sometimes administrative duties). This demonstrates in practice why raiding is

‘considered a high honor’ with cultural and material benefits for the recipient of the raid, as ‘viewers become currency in a type of gift economy’ [26]. However, the raid function’s specificity to Twitch naturally restricts the activity to those using the platform. Phuse’s move away from livestreaming therefore limits the opportunity for peer recognition, channel growth and economic rewards of this kind.

Moreover, while raids can help the mutual growth of producer-hosts’ followings, they are often most successful when there is a pre-existing social or professional connection which helps reinforce audience conversion. Channel development therefore depends partly on the endorsement of other streamers and partly on corporate sponsorship in the form of Twitch partnership. Reflecting traditional music industry dynamics, it remains the case that ‘support/sponsorship from music industry gatekeepers is necessary to move up to the next level, not merely because of money but also because it provides a form of validation which is recognised by other gatekeepers’ [27].

Community identity and belonging

The producer-hosts we interviewed also highlighted that a critical part of the development of beat battles was tied to the communal connections and experiences of participants. The Twitch (and Discord) ecosystem of each producer-host is a significant place for local and global engagement, providing entertainment, education and various forms of communal interaction. A concise example of this is Spell’s use of the Māori term ‘whānau’, a culturally specific substitute for ‘family’, which features prominently in his stream chat as a collective identifier for his community. On the Discord servers that accompany our case studies’ streams, individuals expressed gratitude to the producer-hosts for a range of reasons: providing regular entertainment, cultivating a productive environment for developing their own beatmaking skills and helping to stave off social isolation during the pandemic.

Across all the events we examined, the identity formations of community members are actualised through participation — usually by chatting, beatmaking and giving feedback on others’ beats — rather than passive viewership. Such forms of engagement are incentivised (though not determined) by platform design, with Twitch providing technical infrastructure and cultural norms that ‘inscribe a form of use where viewing and interaction, content and community, are inseparable’ (Ask, *et al.*, 2019). Evidently, this is a good fit for the participatory traditions of beat battle events that have helped sustain producer-host communities.

The expectation that viewers should participate actively in streams, in combination with the new amateur-style development of producer-host channels, has led to some viewers taking on additional community management responsibilities. In particular, the embrace of volunteer fan-moderators, many of whom have no prior connections to producer-hosts, represents an important example of online participatory activity, even a form of casual labour (Wohn, 2019). Moderators perform a range of technical duties that lower administrative overheads for channel hosts, even though many have never met the streamer for whom they perform such tasks. Spell explained:

> [I have] maybe ten [mods], something like that. Yeah, and they all just help with the stream. They help the stream run, like, I couldn’t do anything without the mods. And they do it because they want to! [...] But I feel like I know all of them now. I talk to them every day. [...] We’re all mates, we just haven’t met (Interview with Spell, 2021).

These comments demonstrate the strength of the relationships developed through online participation in producer-host communities. Following our interview with Spell, one of his volunteer moderators built a Web site to host beat battle submissions and assist with the organisation of events. This development both points to potential limitations for beat battle events in the existing Twitch infrastructure and indicates a significant, gratifying investment in the administrative work that maintains the stream.

Swerv similarly described feelings of gratitude for his moderators, having offered the role to participants as

a privilege:

> Mods are like [...] my right-hand man, because they help me run the stream by doing things I can't do whilst I'm on the stream [...] I've got three mods. Two of them, I didn't know. They came — I don't know how they found me — but they came to my stream, they were extremely supportive, and so I just decided to make them mods (Interview with Swerv, 2021).

The responsibilities awarded to — and trust placed in — moderators is rather striking, given their pseudonymity. To some extent, participation in online production communities allows for the suspension of everyday social rules, since aliases inform the status quo of Twitch. It may be tempting to frame engagement with online beat battles as a kind of parasocial interactivity, but the active processes of moderation — and the views of the producer-hosts on such labour — make it clear that real personal and professional relationships have been established (Wulf, *et al.*, 2020).

At a broader level, the degree of commitment that participants make to producer-hosts' communities (especially at smaller scales, as in the case of Swerv's and Phuse's events) is noteworthy. Though conceived of as a substitute for local meetups during Australian lockdowns, Swerv was surprised by the consistency of his transnational community:

> Back then when everything was closed, this was just another form of entertainment for people who are coming in. It was just another hub where we all hang out, we all talk together online in real time. Now that COVID laws have lifted [...] I've got a core following now, which is great, and I kind of prefer it this way because it's [...] quality producers that all hang out together and it's nice (Interview with Swerv, 2021).

Among his core following, individuals express a strong sense of accountability, and frequently post on Discord in advance to inform others when they are unable to participate in a weekly event. The act of touching base in this way implies a tacit social contract involved in their entirely voluntary participation. This form of commitment operates in line with the finding of Cheliotis, *et al.* [28] that online communities based in peer production 'rely critically on a small core of committed contributors but also on the maintenance of an extended circle of more ephemeral participants'. Although Swerv emphasises the real time interactions at the core of his community, any ephemerality of participation is accounted for using the Discord server. In this way, Discord serves as an important accompaniment to Twitch, as a space where individuals can stay informed of the latest happenings among the community and develop social relationships off-stream in more 'intimate modes of connection' [29].

Some communities, like the large audience engaging in Spell's streams, comprise globally distributed participants with fewer local connections. Feelings of belonging in his community are therefore based upon online interactions and the dynamics of Web-based activity. In Swerv's case, the Twitch channel and Discord server act as a virtualisation of a pre-existing local producer scene in Naarm. However, the participation of individuals from other countries, and between different streams, demonstrates a kind of hybrid model where new transnational connections can be established. Phuse's work as a producer-host, initially using Twitch, and later using Zoom, sought to bring together specific actors whose connection was facilitated entirely by online interactions, 'inspired' by his participation in Swerv's stream (Interview with Phuse, 2021). In each case, a sense of communal belonging is established by the conduct of '*regulars*', which dictates the overall manner of group interaction [30]. Regular participation enables personal investment in online music communities, increasing influence among participants, fulfilment of individual needs and the development of emotional connections 'through shared history and an identification with other members' [31]. As COVID-19 intensified a need for communal belonging, Twitch offered producer-hosts fertile ground to build and connect communities around participatory cultural practices like beat

battles. In the process of doing so, producer-host streams have been enabled, shaped and connected by the participation of regulars who frequent beatmaking events across an informal network of different producer-host streams.

Informal community-based education

Aside from the social implications of producer host-communities, participation at beat battle events provides opportunities for education in light of the casualisation and diversification of producer roles. Alongside communicating production knowledge first-hand, producer-hosts often call on community members to collaborate on skills exchanges, such as particular software techniques that one individual might learn from another, thus brokering informal learning partnerships (see Wenger, *et al.*, 2009). Groups of people engaging regularly in beat battle events are examples of 'task-based learning communities' [32], with opportunities for global collaboration, blurring the lines between amateur and professional, and merging music cultures (electronic dance music and hip hop, for example). Our interviewees emphasised how producer-hosts' Twitch events particularly enable producers to practice working under time pressure and to receive peer and audience evaluation.

The typical structure of events encourages participants to familiarise themselves with producing music under time constraints. For producers of hip hop and electronic dance music, creating a beat quickly to deliver to peers (so they can record vocals, for instance) is an essential skill for effective collaboration [33]. Phuse used a basketball analogy to understand how beatmaking events enabled him to practice time management:

> I think it's cool to practice [...] when you're doing hip hop, for me, I kind of equated a lot of times to basketball. It's just like open gym practice, like just getting shots up [...] Making music, making a song in a day is cool, but it's good to practice making a song in 40 minutes and it doesn't, it doesn't even need to be great (Interview with Phuse, 2021).

He explained why this form of practice through repetition is beneficial for producers in the context of a hypothetical professional setting:

> You never know [...] if an artist you really respect is going to pull up, just like 'oh, he's in town right now. I need to get over there' and then he wants you to make something quickly. You're going to need to do it, you know? [...] I always wanted to be ready for any situation (Interview with Phuse, 2021).

With professionalisation an end goal for many producers, participants can engage in several weekly events to repeatedly practice beatmaking under time constraints and receive frequent peer evaluation.

Feedback appears in different configurations across each community. In 'the Phlip with Phuse', which Phuse preferred to host on Zoom, each participant voiced real-time feedback to one another, and could share their screen, highlighting aspects of their DAWs for others to see. Indeed, this was Phuse's primary motivation for replacing Twitch with direct video calls:

> A Zoom call just made more sense with, if you have five people, everyone can talk [...] And also since, you know, my goals were to learn more from it, like making it a Zoom session and making it so anyone could kind of share their screen after, I think we're able to, kind of, learn a lot more in that way [...] if we have fewer people. I think that became the better format (Interview with Phuse, 2021).

The small group size (of five participants on average) meant that individuals on a call did not overwhelm each other with too many simultaneous comments. Producers were able to discuss their practices in detail and interact through voice and video rather than through Twitch's one-to-many mode of communication with a pseudonymous chat. These technological differences revised the cultural dynamics of the events, which proceeded less like entertainment and encouraged closer 'mutual engagement with each other, including a trust of one another and a sense of being included in something that matters' [34].

Phuse's use of Zoom encouraged peer evaluation that was more detailed, personalised and arguably more useful than the Twitch-based events. However, Swerv's stream enables him to publicly suggest others in the community who might enhance a given beat submission through collaboration: here we identify stewarding and brokering in action [35]. With the largest community of the three case studies, Spell uses a quantified form of audience evaluation asking for a binary judgement of quality from viewers, who vote on whether each beat is 'on' or 'off' (*i.e.*, good or bad) using a poll. While this may seem less constructive, Spell's beat battles still enable participants to gain direct feedback from a highly skilled, established producer.

Engaging in these events for community evaluation offers varying degrees of support and group intimacy (often based on the size of the participating communities), ultimately encouraging further participation and skills development. As a point of pride, Swerv (2021) described providing opportunities for this type of informal learning as 'the most valuable tool within the music industry. By having genuine and real relationships where you're able to connect with each other [...] you can build with each other and you grow'. Accordingly, a mentality of continually making progress and improving one's craft through these collaborative events pervades the communities under study.

Conclusion

As one of the leading video livestreaming platforms, Twitch has become an important infrastructural component in establishing music communities around beat battle events. Beat battles range from strikingly popular entertainment (as in the case of Kenny Beats and Glitchcon) to more intimate, regular meetings of beatmaking communities, connecting audiences, practitioners and professionals across the world. These events are shown to be established and sustained by producer-hosts, a cultural actor that we distinguish from both traditional stream hosts and other practices of new amateur music production. While there are notable precedents for producer-hosts, the emerging communities of livestreamed participatory beat battles illustrate a development of Twitch's interactive capacities, leveraged for a range of new social, cultural and economic ends.

This expansion in the use of livestreaming platforms by music producers has developed from a number of key motivating factors and investments into regular beat battle events. This has led to alternative routes for professionalisation and thoroughly communal forms of new amateur cultural production. For popular producer-hosts, Twitch has provided a significant source of income that establishes a sustainable alternative to labour in the traditional creative industries. The economic potential for new streamers is, however, still significantly constricted by corporate gatekeepers whose requirements (*e.g.*, a following to merit partnership) mirror gatekeeping power dynamics in the traditional creative industries. Producer-hosts also stream for communal purposes and to provide opportunities for informal education, collaboration and skills development. These social engagements feature exchanges where participants and producer-hosts alike move between events to continue to refine their skills and sustain peer networks.

Further research could attend to how the politics of identity inform cultural interactions in online music production communities, especially gendered dynamics of participation, given the high concentration of male participants in this study. More critical attention is also required to address the motivations and exploitations of Twitch viewers, and their entanglements in the attention economy and conditions of

surveillance capitalism. This study has nonetheless helped to understand how corporate-owned Internet media platforms both profit from the entertainment value of cultural production and enable the development of new creative communities.

Both commercial and communal motivations drive the activities of producer-hosts, demonstrating how these enterprising individuals have adapted to Twitch. Producer-hosts extending conventional uses of Twitch appear to be 'doing what amateur musicians have always done, which is to use whatever resources they have at their disposal to make music with others. But they now do so in denser, speedier and more globally connected ways' [36]. Contextualised by the new amateur framing, this study of livestreamed beat battles on Twitch makes a significant contribution to the debate between the democratisation and the platformisation of cultural production.

About the authors

Dr. **Jason Ng** is a CIPHER Postdoctoral Research Fellow at University College Cork, researching global hip hop with a focus on dance, media and cultural production in the Asia-Pacific region. His research explores the intersections between contemporary music cultures, media, creative industries, urban geographies and globalisation and has been published in the journal *City Culture and Society*. He continues to work in the field, drawing from his own critical practice as an artist in dance, film, music and theatre.
E-mail: jason [dot] ng [at] ucc [dot] ie

Dr. **Steven Gamble** is a Marie Curie Research Fellow in Music at University College Cork. He is the author of *How music empowers: Listening to modern rap and metal* (Routledge, 2021) and *Digital flows: Internet-based hip hop music and culture* (Oxford University Press, forthcoming). Specialising in the study of popular music and Internet cultures, digital technology, and listening, he has published work in *Popular Music & Society, Journal on the Art of Record Production*, and *Metal Music Studies*.
E-mail: info [at] stevengamble [dot] com

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Notes

1. Bennett, 2016, p. 372; Johnson and Woodcock, 2019, p. 9.

2. The term 'host', used as a vernacular alternative to 'broadcaster', recalls the televisual context of a specifically structured show and its presenter, or even (and especially in the hip hop context) a master of ceremonies. It is an appropriate term to address the event-based convention of the music production streams under study. Our use matches the conventional reference of the term to any streamer — the host of their own channel — rather than the Twitch-specific practice of one inactive channel redirecting to a live channel.

3. Spilker, *et al.*, 2020, p. 616.

4. Burgess and Green, 2009, p. 12.

5. Curran, *et al.*, 2016, p. 2,014.

6. Nieborg and Poell, 2018, p. 4,276.

7. Rendell, 2021, p. 1,099.

8. Brett, 2018, pp. 7–8.

9. Prior, 2018, pp. 89–90.

10. Communal music practices not only challenge traditional distinctions between amateurs and professionals but can also expand the boundaries for participation in the mainstream music industry, as demonstrated by Kai Arne Hansen and Steven Gamble's (2022) study of the new media practices of hip hop collective Brockhampton.

11. Indaba Music was acquired in 2018 by the music production platform Splice (best known as a sample library), which invites further considerations of the drive towards corporate control over participatory music cultures.

12. Brett, 2018, p. 13.

13. Taylor, 2018, p. 231.

14. Gerber, 2017, p. 343.

15. Lange and Bürkner, 2013, p. 149.

16. Prior, 2018, p. 5.

17. O'Reilly, 2009, pp. 109–117.

18. Naarm is the Woiwurrung name for the Melbourne area, used here to recognise and pay respect to the unceded Kulin land renamed during British colonisation. Almost all participants in the scene we studied use the term Melbourne in everyday conversation.

19. Jones, 2021, p. 71.

20. Burgess and Green, 2009, pp. 15–26.

21. Notably, Kenny's use of social media platforms as a producer-host precedes beat battles held under the premise of entertainment specific to COVID-19 cultural circumstances (or 'pandemic media'). His YouTube series 'The Cave' merges beatmaking instruction (Brett, 2018) with interviews and collaborations with rap artists.

22. Partti, 2012, p. 30.

23. The pun Spell uses to name his beat feedback events, 'eetswaa', is a pig Latin-like variation of the word 'sweet' used in Australia, which speaks to the implied regionality of Spell's audience. This sits alongside frequent uses of the Māori language by both Spell and his audience.

24. Naudin, 2018; Ng, 2019, pp. 46–50.

25. Partin, 2020, p. 10.

26. Bingham, 2017, pp. 157–158.

27. Haynes and Marshall, 2018, p. 1,989.

28. Cheliotis, *et al.*, 2014, p. 1,013.

29. Sheng and Kairam, 2020, p. 12.

30. Hamilton, *et al.*, 2014, p. 1,318, italics preserved.

31. Hamilton, *et al.*, 2014, p. 1,318.

32. Partti, 2012, p. 76.

33. Schloss, 2004, pp. 171–174.

34. Partti, 2012, p. 30.

35. Wenger, *et al.*, 2009, p. 108.

36. Prior, 2018, p. 90.

References

C. Abidin, 2020. “Somewhere between here and there: Negotiating researcher visibility in a digital ethnography of the influencer industry,” *Journal of Digital Social Research*, volume 2, number 1, pp. 56–76.
doi: https://doi.org/10.33621/jdsr.v2i1.20, accessed 14 May 2022.

R. Aly-Tovar, M. Bacache-Beauvallet, M. Bourreau and F. Moreau, 2020. “Why would artists favor free streaming?” *Journal of Cultural Economics*, volume 44, number 2, pp. 255–280.
doi: https://doi.org/10.1007/s10824-019-09358-z, accessed 14 May 2022.

G. Appel, L. Grewal, R. Hadi and A.T. Stephen, 2020. “The future of social media in marketing,” *Journal of the Academy of Marketing Science*, volume 48, number 1, pp. 79–95.
doi: https://doi.org/10.1007/s11747-019-00695-1, accessed 14 May 2022.

K. Ask, H.S. Spilker and M. Hansen, 2019. “The politics of user-platform relationships: Co-scripting live-streaming on Twitch.tv,” *First Monday*, volume 24, number 7, at https://firstmonday.org/article/view/9648/8054, accessed 14 May 2022.
doi: https://doi.org/10.5210/fm.v24i7.9648, accessed 14 May 2022.

S. Bennett, 2016. “The listener as remixer: Mix stems in online fan community and competition contexts,” In: S. Whiteley and S. Rambarran (editors). *Oxford handbook of music and virtuality*. Oxford: Oxford University Press, pp. 355–376.
doi: https://doi.org/10.1093/oxfordhb/9780199321285.013.23, accessed 14 May 2022.

C. Bingham, 2017. “An ethnography of Twitch streamers: Negotiating professionalism in new media content creation,” Ph.D. dissertation, University of Oklahoma, at https://shareok.org/handle/11244/50709, accessed 14 May 2022.

T. Brett, 2018. “Rhythm technologies, workflows, and convergence culture in amateur hip hop beat-making YouTube videos,” In: J.D. Burton and J.L. Oakes (editors). *Oxford handbook of hip hop music*. Oxford: Oxford University Press, pp. 1–18.
doi: https://doi.org/10.1093/oxfordhb/9780190281090.013.23, accessed 14 May 2022.

A. Bruns, 2016. “Prosumption, produsage,” In: K.B. Jensen and R.T. Craig (editors). *International encyclopedia of communication theory and philosophy*. Hoboken, N.J.: Wiley-Blackwell and the International Communication Association, pp. 1–5.
doi: https://doi.org/10.1002/9781118766804.wbiect086, accessed 14 May 2022.

J. Burgess and J. Green, 2009. *YouTube: Online video and participatory culture*. Cambridge: Polity.

M.J. Butler, 2006. *Unlocking the groove: Rhythm, meter, and musical design in electronic dance music*. Bloomington: Indiana University Press.

G. Cheliotis, N. Hu, J. Yew and J. Huang, 2014. “The antecedents of remix,” *CSCW ’14: Proceedings of the 17th ACM Conference on Computer Supported Cooperative Work & Social Computing*, pp. 1,011–1,022.
doi: https://doi.org/10.1145/2531602.2531730, accessed 14 May 2022.

J. Curran, N. Fenton and D. Freedman, 2016. “The Internet we want,” In: J. Curran, N. Fenton and D. Freedman (editors). *Misunderstanding the Internet*. Second edition. London: Routledge, pp. 203–209.
doi: https://doi.org/10.4324/9781315695624, accessed 14 May 2022.

S. Frith, 2012. “The place of the producer in the discourse of rock,” In: S. Frith and S. Zagorski-Thomas (editors). *The art of record production: An introductory reader for a new academic field*. Burlington, Vt.: Ashgate, pp. 207–221.
doi: https://doi.org/10.4324/9781315612638, accessed 14 May 2022.

H.R. Gerber, 2017. “eSports and streaming: Twitch literacies,” *Journal of Adolescent & Adult Literacy*, volume 61, number 3, pp. 343–345.
doi: https://doi.org/10.1002/jaal.692, accessed 14 May 2022.

D. Gouly, 2020. “SoundCloud, sampling and sonic experimentation: Knowledge transmission in hip-hop’s underground,” Ph.D. thesis, Open University, at http://oro.open.ac.uk/70506/, accessed 14 May 2022.
doi: https://doi.org/10.21954/ou.ro.0001136a, accessed 14 May 2022.

W.A. Hamilton, O. Garretson and A. Kerne, 2014. “Streaming on Twitch: Fostering participatory communities of play within live mixed media,” *CHI ’14: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, pp. 1,315–1,324.
doi: https://doi.org/10.1145/2556288.2557048, accessed 14 May 2022.

K.A. Hansen and S. Gamble, 2022. “Saturation season: Inclusivity, queerness, and aesthetics in the new media practices of Brockhampton,” *Popular Music and Society*, volume 45, number 1, pp. 13–30.
doi: https://doi.org/10.1080/03007766.2021.1984019, accessed 14 May 2022.

J. Haynes and L. Marshall, 2018. “Beats and tweets: Social media in the careers of independent musicians,” *New Media & Society*, volume 20, number 5, pp. 1,973–1,993.
doi: https://doi.org/10.1177/1461444817711404, accessed 14 May 2022.

Z. Hilvert-Bruce, J.T. Neill, M. Sjöblom and J. Hamari, 2018. “Social motivations of live-streaming viewer engagement on Twitch,” *Computers in Human Behavior*, volume 84, pp. 58–67.
doi: https://doi.org/10.1016/j.chb.2018.02.013, accessed 14 May 2022.

H. Jenkins, 2006. *Convergence culture: Where old and new media collide*. New York: New York University Press.

M.R. Johnson and J. Woodcock, 2019. “‘And today’s top donator is’: How live streamers on Twitch.tv monetize and gamify their broadcasts,” *Social Media + Society* (25 November).
doi: https://doi.org/10.1177/2056305119881694, accessed 14 May 2022.

M.R. Johnson, M. Carrigan and T. Brock, 2019. “The imperative to be seen: The moral economy of celebrity video game streaming on Twitch.tv,” *First Monday*, volume 24, number 8, at https://firstmonday.org/article/view/8279/8058, accessed 14 May 2022.
doi: https://doi.org/10.5210/fm.v24i8.8279, accessed 14 May 2022.

E. Jones, 2021. *DIY music and the politics of social media*. London: Bloomsbury Academic.https://doi.org/10.5040/9781501359675, accessed 14 May 2022.

B. Lange and H.-J. Bürkner, 2013. “Value creation in scene-based music production: The case of electronic club music in Germany,” *Economic Geography*, volume 89, number 2, pp. 149–169.
doi: https://doi.org/10.1111/ecge.12002, accessed 14 May 2022.

J. Lingel and M. Naaman, 2012. “You should have been there, man: Live music, DIY content and online communities,” *New Media & Society*, volume 14, number 2, pp. 332–349.
doi: https://doi.org/10.1177/1461444811417284, accessed 14 May 2022.

M. Michielse, 2016. “A digital recording consciousness: Analysing, mixing and evaluating audio in the mashup community,” *IASPM Journal*, volume 6, number 2, pp. 139–153, and at https://iaspmjournal.net/index.php/IASPM_Journal/article/view/781, accessed 14 May 2022.

M. Michielse, 2013. “Musical chameleons: Fluency and flexibility in online remix contests,” *M/C Journal*, volume 16, number 4, article 4.
doi: https://doi.org/10.5204/mcj.676, accessed 14 May 2022.

A. Naudin, 2018. *Cultural entrepreneurship: The cultural worker’s experience of entrepreneurship*. London: Routledge.
doi: https://doi.org/10.4324/9781315444680, accessed 14 May 2022.

J. Ng, 2019. “Connecting Asia-Pacific hip-hop — The role of the cross-cultural intermediary,” Ph.D. thesis, Monash University, at https://doi.org/10.26180/5d4805f266eeb, accessed 14 May 2022.

D.B. Nieborg and T. Poell, 2018. “The platformization of cultural production: Theorizing the contingent cultural commodity,” *New Media & Society*, volume 20, number 11, pp. 4,275–4,292.
doi: https://doi.org/10.1177/1461444818769694, accessed 14 May 2022.

K. O’Reilly, 2009. *Key concepts in ethnography*. Los Angeles, Calif.: Sage.
doi: https://doi.org/10.4135/9781446268308, accessed 14 May 2022.

W.C. Partin, 2020. “Bit by (Twitch) bit: ‘Platform capture’ and the evolution of digital platforms,” *Social Media + Society* (27 July).
doi: https://doi.org/10.1177/2056305120933981, accessed 14 May 2022.

H. Partti, 2012. “Learning from cosmopolitan digital musicians: Identity, musicianship, and changing values in (in)formal music communities,” Sibelius-Akatemia, at https://taju.uniarts.fi/handle/10024/6446, accessed 14 May 2022.

A. Pfeiffer, S. Bezzina, N. Denk, S. Kriglstein, S. Wimmer and C. Thielen, 2020. “Life-world oriented education in times of the COVID-19 lockdown. Twitch.tv as pedagogical tool,” *ICERI2020 Proceedings*, pp. 3,507–3,513.
doi: https://doi.org/10.21125/iceri.2020.0785, accessed 14 May 2022.

N. Prior, 2018. *Popular music, digital technology and society*. London: Sage.
doi: https://dx.doi.org/10.4135/9781529714807, accessed 14 May 2022.

S. Rambarran, 2016. “‘DJ hit that button’: Amateur laptop musicians in contemporary music and society,”

In: R. Mantle and G.D. Smith (editors). *Oxford handbook of music making and leisure*. Oxford: Oxford University Press, pp. 587–602.
doi: https://doi.org/10.1093/oxfordhb/9780190244705.013.19, accessed 14 May 2022.

J. Rendell, 2021. "Staying in, rocking out: Online live music portal shows during the coronavirus pandemic," *Convergence*, volume 27, number 4, pp. 1,092–1,111.
doi: https://doi.org/10.1177/1354856520976451, accessed 14 May 2022.

B. Ruberg and D. Lark, 2021. "Livestreaming from the bedroom: Performing intimacy through domestic space on Twitch," *Convergence*, volume 27, number 3, pp. 679–695.
doi: https://doi.org/10.1177/1354856520978324, accessed 14 May 2022.

J.G. Schloss, 2004. *Making beats: The art of sample-based hip-hop*. Middletown, Conn.: Wesleyan University Press.

J.T. Sheng and S.R. Kairam, 2020. "From virtual strangers to IRL friends: Relationship development in livestreaming communities on Twitch," *Proceedings of the ACM on Human-Computer Interaction*, volume 4, number CSCW2, article number 94, pp. 1–34.
doi: https://doi.org/10.1145/3415165, accessed 14 May 2022.

H.S. Spilker, K. Ask and M. Hansen, 2020. "The new practices and infrastructures of participation: How the popularity of Twitch.tv challenges old and new ideas about television viewing," *Information, Communication & Society*, volume 23, number 4, pp. 605–620.
doi: https://doi.org/10.1080/1369118X.2018.1529193, accessed 14 May 2022.

T.L. Taylor, 2018. *Watch me play: Twitch and the rise of game live streaming*. Princeton, N.J.: Princeton University Press.

M.D. Thomas, 2020. "Digital performances: Live-streaming music and the documentation of the creative process," In: E. Mazierska, L. Gillon and T. Rigg (editors). *The future of live music*. London: Bloomsbury Academic, pp. 83–96.
doi: https://doi.org/10.5040/9781501355905.0012, accessed 14 May 2022.

M. Törhönen, J. Giertz, W.H. Weiger and J. Hamari, 2021. "Streamers: The new wave of digital entrepreneurship? Extant corpus and research agenda," *Electronic Commerce Research and Applications*, volume 46, 101027.
doi: https://doi.org/10.1016/j.elerap.2020.101027, accessed 14 May 2022.

Twitch, 2021. "Twitch partner program," at https://www.twitch.tv/p/en/partners/, accessed 14 May 2022.

J. van Dijck, 2013. *The culture of connectivity: A critical history of social media*. Oxford: Oxford University Press.
doi: https://doi.org/10.1093/acprof:oso/9780199970773.001.0001, accessed 14 May 2022.

F. Vandenberg, M. Berghman and J. Schaap, 2021. "The 'lonely raver': Music livestreams during COVID-19 as a hotline to collective consciousness?" *European Societies*, volume 23, supplement 1, pp. S141–S152.
doi: https://doi.org/10.1080/14616696.2020.1818271, accessed 14 May 2022.

E. Wenger, N. White and J.D. Smith, 2009. *Digital habitats: Stewarding technology for communities*. Portland, Ore.: CPsquare.

D.Y. Wohn, 2019. "Volunteer moderators in Twitch micro communities: How they get involved, the roles they play, and the emotional labor they experience," *CHI '19: Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*, paper number 160, pp. 1–13.
doi: https://doi.org/10.1145/3290605.3300390, accessed 14 May 2022.

T. Wulf, F.M. Schneider, and S. Beckert, 2020. “Watching players: An exploration of media enjoyment on Twitch,” Games and Culture, volume 15, number 3, pp. 328–346.
doi: https://doi.org/10.1177/1555412018788161, accessed 14 May 2022.

Q. Zhao, C.-D. Chen, H.-W. Cheng and J.-L. Wang, 2018. “Determinants of live streamers’ continuance broadcasting intentions on Twitch: A self-determination theory perspective,” *Telematics and Informatics*, volume 35, number 2, pp. 406–420.
doi: https://doi.org/10.1016/j.tele.2017.12.018, accessed 14 May 2022.

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