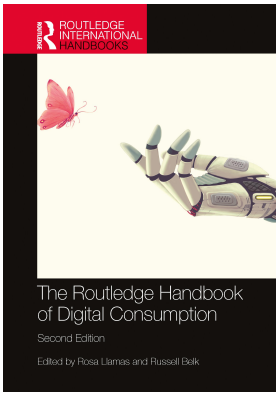

The Routledge Handbook of Digital Consumption

Rosa Llamas, Russell Belk

The Possibilities and Pitfalls of Capturing Livestreamed Performances

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Toni Eagar, Natalie A. Mitchell, Kevin D. Thomas, Yingnan Shi
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THE POSSIBILITIES AND PITFALLS OF CAPTURING LIVESTREAMED PERFORMANCES

Toni Eagar, Natalie A. Mitchell, Kevin D. Thomas and Yingnan Shi

Traditional live performances are distinguished by their ephemerality, the performance disappears as it is experienced (Phelan 1993; Reason 2006). This leaves performance researchers with only the material traces of past performances to reconstruct something that no longer exists (Reason 2006). However, livestreaming technology has enabled mediated social co-presence, replacing physical presence, with real-time bi-directional connections between performers and the audience (Auslander 1997, 2008, 2012; Webb et al. 2016). Livestreaming, also known as distributed liveness, "entails multiple forms of physical, spatial, and social copresence between performers and audiences across physical and virtual spaces" (Webb et al. 2016: 432). In concert with emerging forms of livestreaming, researchers are now both enabled and hindered by the technology that has made this possible. Using the context of Verzuz livestreamed music battles, we explore the possibilities and pitfalls of conducting research on digital live performances which involve composite texts, a mix of audio, visual, and textual data on multiple platforms. In this chapter, we address questions of what are the research possibilities, limitations, and ethics of collecting livestreaming performance data.

This chapter aims to aid social researchers interested in livestreaming phenomena. For people new to the area, this chapter will provide a roadmap of the possibilities available and the contingencies that are necessary for conducting this type of research. It also outlines some of the time and budgetary constraints that you are likely to face in entering the online field. For more advanced researchers, this chapter joins a larger conversation around the ontology, methodology, and ethics of conducting research online and in social media contexts. This is a timely addition for researchers grappling with the limitations that COVID-19 has placed on data collection, whether it be accessing subjects, increasingly tight budgets, and a world where many everyday performances (e.g., teaching) have gone online in a livestreamed format.

Conceptual Background

Social researchers tend to focus on the textual and quantitative, i.e., "big data," ignoring the wider set of data types inherent to online experiences. Some of this bias is a by-product of traditional methodologies and the technologies available to analyze and report research.

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Complex anthropological, ethnographic, or sensory phenomenology studies that include data sets of photos and audiovisual recordings of events and interviews, and the lived experiences of taste, sounds, and smells are traditionally required to be converted into text, in the form of fieldnotes, transcripts, memos, codes, and the final academic paper. While analysis software packages have added features to include non-textual data, e.g., Nvivo and Atlas TI, the publication methods of books and academic journals still hark back to the physical limitations of paper which privileges text, much to the lament of videographers (Belk and Kozinets 2005; Hietanen and Andéhn 2018).

Online and social media studies have not been immune to this domination of the textual data, despite the technology being its own representation of the social world of experience. Online methods such as netnography and content analysis tend to focus on the text of the online world, in the form of online forum or social media posts. So, while an increasing number of studies are incorporating more types of online data, images (Eagar and Dann 2016a), audio, and video (Hietanen and Andéhn 2018), the methodological toolkit for the systematic gathering and analysis of these data sets is relatively bare. This is especially true for contexts where researchers wish to understand how these data types represent a coherent performance that is experienced in situ as a composite text, i.e., how the types and composition of different data types are experienced as a coherent and complete event (Eagar and Dann 2016a, 2016b).

Digital Ontologies

Before considering livestreaming, it is important to understand the ontological background of the digital sphere and how the consumption of digital objects has its own characteristics. According to Watkins (2015), objects of digital consumption demonstrate several ontological particularities that distinguish them from material objects. Digital consumption objects exist within a complex web of interconnected technologies. For instance, engaging with objects of digital consumption typically requires simultaneous engagement with a host of hardware (e.g., desktop, laptop, smartphone, and power cord), software (e.g., login interface – account and password data, web browser navigation, and downloading social media applications), and traditional instruments of commerce (e.g., agreeing to and renewing usage and privacy contracts). As such, the enactment of digital consumption objects, and livestreaming, is situated within and dependent on a broader ecosystem of active agents, making the enactment of digital consumption objects a transient experience. Once the corresponding agents needed to engage with digital consumption objects are not present or become inaccessible, so too does one's ability to enact digital consumption objects (Watkins 2015: 276).

Watkins (2015) also posits that objects of digital consumption adopt characteristics of fluidity. Rather than existing in a singular state like material consumption objects, digital consumption objects can generally be accessed across multiple devices and platforms at any given time and physical location, thereby creating the possibility to enact digital consumption objects irrespective of spatiotemporal considerations. The replicability and transferability of digital consumption objects adds to their fluid nature. These traits enable objects of digital consumption to easily be replaced or transmitted to another party, and in many instances, these "copies" are indistinguishable from the digital "original." As Watkins (2015) explains, corporate tech entities constantly attempt to manage and minimize the level of fluidity present in objects of digital consumption, so as not to jeopardize the commercial returns of enacting digital consumption objects. However, as outlined in the following the ability to experience a livestreaming event with others is time-dependent, so the "live" version of a livestreaming event enacts the ability to co-consume with immediate and shared reactions

between the audience. Whereas "copies" of a livestreaming event represent a past performance, depending on the platform, this may also include the audience's response; subsequent responses lack the immediacy of the live version as time has moved on and the audience dissipated (Parmentier and Fischer 2015).

Lastly, objects of digital consumption exhibit instability in ways not akin to material consumption objects (Watkins 2015). Unlike material consumption objects which are widely characterized as static and perennial, objects of digital consumption are unstable precisely because of their transient and fluid qualities. Efficient and effective engagement with digital consumption objects breaks down when essential co-actants, such as required hardware and access passwords, are lost or corrupted. Additionally, modes of engaging with digital consumption objects are co-constituted by multiple agents within the digital landscape. For instance, user interface updates and deplatforming (company or self-enacted) can significantly impact how and what digital consumption objects can be enacted. These realities cause objects of digital consumption to often deviate, fluctuate, and deteriorate (Watkins 2015, p. 276).

It is important to situate these distinct ontological attributes of digital consumption objects as enacted rather than innate, especially in the context of livestreaming as performance roles are enacted and mediated through technology. These defining qualities are neither the inherent result of the digital consumption objects composition, nor are they merely constructed by the consumers, performers, and audiences that engage with them. Alternatively, they emerge from the layered and complex interactions between consumer and object (Auslander 1997, 2012; Watkins 2015).

Live Performance as a Research Context

Performance is related to two functions, the first is the presentation of an artistic event, such as a play, concert, or some other form of entertainment, while the second is the more general accomplishment of action, task, or function, such as an employee's job performance (Oxford Dictionary 2021). This chapter focuses on Verzuz battles, a livestreamed performance of a "music battle" between two artists, representing the first type of performance, but the issues associated with this may apply to other online phenomena. This section provides an overview of the nature of live performances and how these translate to livestreaming as performance experiences and as sites of research of the ephemeral and archival.

A performance is generally composed of performers and audience actors. Traditional conceptions of live performances require the co-presence of these actors within the same physical space, a theatre, gallery, or arena (Phelan 1993; Reason 2006). However, this need for physical co-presence has increasingly been challenged as technology has afforded greater freedom for distributed liveness, where the performers and actors are physically distant while being digitally and socially co-present (Meyer-Dinkgräfe 2015). These digital forms of co-presence in online spaces reconfigure the relationships between the performance actors (Eagar and L'Espoir Decosta 2018). Being physically co-present affords three types of interactions between performance actors: (1) between performers, e.g., banter between bandmates; (2) between audience members, e.g., smiles, frowns, and asides; and (3) between the performer and the audience, e.g., calls to sing along or applause (Reason 2006). The digital ontologies afford greater capacities to document the first two types of interactions, as the internet captures the performance as it is created (Bainotti et al. 2020) and the audience engages in the performance through posting (Meyer-Dinkgräfe 2015). However, the technologies required to have effective online interaction between musical performers and the audience to allow real-time feedback is a work in progress (Wang et al. 2014; Wu et al. 2017).

Verzuz Battle – The Context

The onset of COVID-19 in early 2020 led to a nearly complete shutdown of the live music scene around the world. In the United States, lockdowns prohibited live music performances of concerts, festivals and at bars and clubs, decimating the industry and resulting in boredom for people stuck at home (Blistein and Millman 2020). In response Swizz Beatz and Timbaland, two veteran US-based music producers launched Verzuz live battle sessions on Instagram Live in late March 2020 to offer an escape from a grim reality.

The Origin and Format

What initially began as a virtual battle between Swizz Beatz and Timbaland on Instagram Live (March 24, 2020), Verzuz quickly developed into a popular, spontaneous phenomenon due to its unique structure. "Rap" battles are "in the DNA of Black music" (Cochrane 2020), but typically they occur among artists and deejays, not songwriters or producers. The Verzuz battle consists of two comparable music artists, primarily hip hop and R&B, who play 20 songs from their music catalog in a three-hour livestreamed session. Anecdotal stories are shared about the origin of the songs and music collaborations. During the early stages of quarantine, the battles featured artists remotely on Instagram TV streaming their music due to COVID-19 lockdowns, with Apple Music/TV simulcasting the event from July 2020.

Battling artists were responsible for production and live broadcasting via a cell phone, tablet device or a web-camera on their personal verified Instagram accounts. In some cases, sessions had poor video and audio quality due to Instagram algorithm issues and led to a rematch on one occasion with the Babyface V. Teddy Riley battle that yielded 1 million viewers (Cochrane 2020). Initially attracting 22,000 viewers in March on its first session, Verzuz experienced rapid success and reached 1.2 million viewers of most sessions after six months. Although the livestreaming series is referred to as a battle, Verzuz leans more toward a "friendly competition" and a fun virtual activity to entertain viewers at home while reigniting artists' music catalogs. "Winners" are chosen by viewers through discussion on Instagram and Twitter. Neither artists nor Verzuz producers are paid for participating and organizing the battles at the time of this written chapter. Timbaland states "the money is the love that we get from the people" (Cochrane 2020). However, Verzuz artists have experienced 300% increases in music sales, illustrating the powerful influence of livestreaming on the music market. Apple Music's Head of Content Larry Jackson states, "The only other thing I've seen that has been this good for [music] catalog is the Super Bowl halftime show" (Cochrane 2020).

Data Collection Assessment

In the following assessment, we investigate nuanced differences when studying livestreamed performances using the three official platforms for Verzuz battles, Instagram, Apple Music/TV, and Twitter. Although, it should be noted that the platforms used by this event continue to evolve, with Apple TV being dropped as a platform in February 2021 and the new platform Triller added in March 2021. The focus of this assessment was two Verzuz battles – rappers Gucci Mane vs. Young Jeezy (November 19, 2020) and R&B artists Ashanti vs. Keyshia Cole (January 21, 2021), both simulcasted on Instagram Live and Apple TV with audience involvement through Instagram and Twitter. It should be noted that as Facebook owns Instagram, many of the issues encountered with collecting data on the Instagram

platform apply to the Facebook platform, except for the prevalence of "closed groups" on the latter that complicates data accessibility and ethics. We focused on these platforms as they are some of the most popular, but each platform has its own affordances that enable or hinder data collection, and these change over time. Thus, the insights reported in the following are a guide for things to consider when approaching data collection in the sphere of livestreaming. The following discusses the options available and applied, why they were selected, how they worked or did not work in practice, and what alternatives may exist.

Collecting Textual Data

Textual data is the most common form of data collected from social media and has the most options and services for collection. The official Verzuz social media platforms were Instagram (responding to the Instagram Live broadcast) and Twitter (responding to the Apple Music/TV broadcast), although there was a lot of crossover between platforms. The following will discuss the synchronous (as the livestream happens) and asynchronous (after the livestream has concluded) options for data collection on each platform. These approaches relate to collecting data from an audience perspective, researchers may have access or can request access to the account owners, which offers additional types of data than what is described in the following, although most platforms do not allow "to collate audience replies".

Instagram

Following the Cambridge Analytica controversy (Isaak and Hanna 2018), Facebook, Instagram's parent company, has increasingly restricted access to its platforms by making its API (Application Programming Interface) unavailable to third-party aggregating services. Recently Facebook has added a service called Crowdtangle (www.crowdtangle.com), which has a free access program for academics to asynchronously collate data from open groups on Facebook and public profiles and hashtags on the Instagram platform. Information on this capability is scant and the authors' found that the data collection was limited to collecting initial posts, but this system could not collect responses. Besides Crowdtangle, there are limited options for synchronous data collection as a third-party service performing this function is likely violating Facebook/Instagram's terms of service, and programming skills are required for the automated collection of asynchronous and synchronous textual data from Instagram.

The manual options for asynchronous data collection on Instagram are time-consuming. Due to the way Instagram displays search results, posts, and replies, there is no easy way to compile data. If you are interested in Instagram posts for a particular hashtag, e.g., #verzuz, Instagram displays the search result as an image tile window. The researcher is then required to select each post of interest and "save" the post, but capturing the replies to these posts is a separate procedure. This also leaves the researcher reliant on the platform's algorithm for selecting content, which is an issue that third-party services and programming options can overcome.

Options to manually save a post include NCapture, which is linked to Nvivo and thus requires saved posts to subsequently be imported into Nvivo. Another option (suggested on the Digital CCT Research Methods Facebook group) is to print as PDF, then go to Adobe Acrobat and click on "edit PDF" which makes the content searchable and codable. However, both options work better on Facebook where you can access the complete comments section. On Instagram, the original post can be captured, but the reply section structure means that

replies to a post cannot be captured via these methods if they are not visible. To capture the replies of a post requires manually expanding the replies section, then copying and pasting replies. However, this can be prohibitively time-consuming, for instance, some of the Verzuz battle posts had more than 10,000 replies.

A note on capturing image data from Instagram, this project was less interested in still imagery used as part of the Verzuz battles, but the above processes will work for images too. There are programming solutions for capturing Instagram images, but doing so may violate the platform's terms of service.

Rather than trying to capture the text as separate from the video, another option is to code replies as they appear in the video. The Instagram broadcast displays replies to the Verzuz battle as a scrolling list in a side pane (on desktop, the mobile app displays these posts as embedded at the bottom of the video). On the upside, this allows researchers to see and code audience responses as they occur within the performance, while also coding the performance. On the downside, coding is time-consuming, and posts are not searchable as they are embedded in an image format. Again, there were too many posts to make this a feasible option for this study. Instead, we used an automated asynchronous approach discussed in the later section on data collection using programming for both searches of Verzuz-related hashtags and for compiling replies to the Verzuz performances.

Twitter

Unlike Facebook and Instagram, Twitter's API is available to third-party services and researchers. So, while you can collate Twitter posts manually using the processes described previously, if you are interested in a popular event or capturing as many aspects of a performance as possible, then automated procedures are advised.

Twitter's API policy allows for automated synchronous and asynchronous data collection of Twitter posts. The easiest option is to use a third-party service such as IFTTT (IFTTT.com), Zapier (Zapier.com), or Supermetrics (supermetrics.com), which can aggregate data synchronously based on pre-determined search parameters. These services function in a similar manner, the user sets up a search (called an applet in IFTTT with 3 free, a zap in Zapier with 5 free, a connection in Supermetrics with a free trial period), and depending on the functionality of the service, it can connect between social media platforms and notification systems or data storage. For example, we used IFTTT to create the following IF Twitter posts include "verzuz" THEN Add row to Google Sheet. The data points are limited to the post date and time, User ID, post text, the Twitter web link, and a link to referenced websites. This allows researchers to set up searches that will automatically collect data in a searchable and codeable format that is unaffected by the platform's algorithms. These services can be used to send notifications when a particular Twitter user posts, which can aid in tracking announcements and events.

We used IFTTT as it had the easier steps to follow in setting up a search for Tweets that mentioned "Verzuz" or "#verzuz." The advantages of this approach are that it is easy to use, it requires no coding skills, and it is free for three searches at one time. It was very useful for providing data over an extended period, as searches can run indefinitely, this is particularly useful if you are interested in consumer sentiment or discourses on a topic over time. However, the limitations we found with IFTTT came when using the service for collecting Twitter posts "#verzuz" during the time critical Verzuz battles. These services work by running the search at intervals, meaning that there are gaps in the data in the periods between these search runs. We also found that the service would cease working during a battle,

meaning that there were extended gaps in the data. In addition, problems also emerged as we reconstructed the composite data of the Twitter posts with the video data, where events in the video were recorded to the second, whereas the Twitter data was recorded to the minute, creating difficulties in reconstructing the performance with the audience response. So, while we started using data collected from this approach, we then switched to using an asynchronous programming approach.

Collecting Audio Visual Data

Collecting audiovisual data in the form of videos is largely a manual process unless you have more advanced programming skills. In addition, recording video requires a significant amount of digital storage capacity, and access to a large capacity hard drive or cloud account is needed. However, an increasing number of social media platforms are based on or enabling video performances and communications, from YouTube and TikTok as video-sharing platforms to Instagram Live and Twitch that enables livestreaming with audience engagement, and the plethora of entertainment streaming services that are seeking ways to differentiate their content, such as AppleTV. The Verzuz battles were simulcast on Instagram Live and Apple Music/TV, requiring a different data collection approach due to the affordances of the platform. Verzuz also added Triller (triller.co), a specialized high-definition livestreaming service, to its array of platforms. Other platforms, usually have the "live" performance and then allow the owner to post a copy, with associated comments, as a unique record of the performance and audience responses. This record can be watched later, but responses are made either separately or as addendums to the existing comments section. In contrast, Triller rebroadcasts the live event, all responses to the original are removed, the audience must wait until a specific time to watch a rebroadcast, and the audience to the rebroadcast can respond as if it was a new performance. Triller represents an interesting evolution in the livestreaming platform landscape, but its configuration meant that it defeated all the researchers' efforts to access the textual data of the audience responses and could only be recorded as an audiovisual data set, using the same procedures as Instagram.

Instagram Live

To record live performances streamed synchronously on Instagram, we used screen recorder program, Camtasia. It is a subscription-based app, which was easily accessible as the research team's universities owned a subscription. Camtasia's easy-to-use software for educators, businesses, and entrepreneurs enables users to capture audio and video content. We manually selected the specific content, the visual live performance for recording, and pressed record. However, Camtasia also has a scheduled recording feature for efficiency and convenience to set designated recording times in advance of a live performance.

Other options to record synchronous video content may include Zoom or Windows 10 Xbox Game bar and other apps depending on the device and operating system being used. Zoom is free and widely accessible. As it is primarily used for video conferencing, the recording feature requires a meeting to be started, the online performance to be shared, and the recording settings to be initiated (remember to share computer sound if you want audio). If using a Windows 10 system, the inbuilt video capture option is the Xbox Game bar. This is also a free screen capture recording application that is commonly used by video game streamers but will automatically stop recording if you change windows/tabs/programs, so it requires a dedicated computer.

As Instagram Live also enables the audience to watch performances on their phone, with a slightly different interface, there may also be a need to record videos from mobile devices. Camtasia offers a mobile device app that provides better visuals but can consume a lot of data and strain the phone's battery life.

Apple Music/TV

Verzuz livestreamed in high-definition on Apple Music/TV between July 2020 and February 2021. Unlike Instagram Live, which was accessible across mobile and desktop platforms, accessing the Apple Music/TV livestream requires an Apple device (i.e., iPhone, iPad, or Mac computer) as well as the Apple Music app or Apple TV subscription.

As Apple Music/TV has a unidirectional structure, the new partnership was extended to include Twitter so that the Apple Music/TV viewers could provide real-time commentary on Twitter as the event unfolded, using the hashtag #verzuz, a selected few of these were included as part of the broadcast. The Apple Music/TV experience was less seamless than on Instagram, with a greater lag time between comments posted and its appearance on screen (if it all).

Synchronous recording of the Apple Music/TV livestream was accomplished using an Apple iPad Mini 3. Verzuz events were accessed on the iPad via the Apple Music app and recording took place through the screen recorder application, Go Record, a free app offered for download via the Apple App Store. While several free screen recorder applications are available for download in the Apple App Store, Go Record was chosen because it was specifically designed for the iPad and had acquired a high user rating (4.5 out of 5 with over 45,000 reviews). Upon completion, Go Record would generate an MP4 file that was initially saved to the iPad Mini's hard drive and then transferred to the research team's cloud storage.

Holding true to the particularities of digital ontologies, especially its capacity to be transient and exhibit varied levels of fluidity and instability, the research team's experience with capturing the Apple Music/TV simulcast was highly precarious from one Verzuz event to the other. For instance, the research team initially intended to access Apple's livestream on a PC desktop using Apple Music's web player (https://music.apple.com/), but live simulcasts are only offered through Apple Music or TV app which is best accessed on an Apple device. Additionally, the successful protocol that was used to record the Gucci Mane vs. Jeezy event failed to capture the subsequent Ashanti vs. Keyshia Cole battle. While the research team employed the same hardware and software to document both events, it appeared that Apple had devised a way to detect when a screen recording app was in use and implemented a process that rendered the screen blank as a response. As noted by Watkins (2015), tech companies are continuously trying to manage and minimize the fluidity (the ability to replicate and distribute) objects of digital consumption like Verzuz to protect its commercial value. While we are not certain this is the case, it certainly appears that Apple took direct action to stymie the ability of audience members to capture the Apple Music/TV simulcast.

Collecting Data with Programming Skills

Relevant programming skills are useful and offer more flexibility if you wish not to rely on a third-party service. For the Verzuz case, we built a "crawler" and accessed the Instagram and Twitter official APIs when the third-party service options proved to be problematic. The "crawler" systematically browses Internet content and then scrapes this into an index file. It automates the manual functions outlined previously of searching, copying, saving,

converting, etc. The benefits of using a crawler are that it can be extremely powerful in collating a large volume of data efficiently, it is flexible in that it can be applied to different data types, videos, images, and text, and to a certain extent it is customizable, where the researcher can specify the data points extracted.

Using Selenium (https://www.selenium.dev/) and webdriver packages, we used Python programming language to develop a crawler that mimicked end-user online behaviors (clicking, extracting, pressing, etc.) to collect and store posts accordingly. Using the API option depends on the platform—for Twitter, researchers need a Twitter Developer account and need to apply for access to the APIs. One can submit a standard or an academic research application to Twitter to gain access, and the latter type requires additional information that is not required for standard approval. Specific methods for searching and retrieving media from Twitter can be found in its developer documentation (https://developer.twitter.com/en/docs/twitter-api/v1/direct-messages/message-attachments/guides/retrieving-media). For Instagram, researchers can use a crawler together with the official Instagram API, but the current version of the API can only provide limited data.

Users who want to crawl Instagram Live sessions of videos and replies require the URLs (Uniform Resource Locator). Each live session has a unique session key that is incorporated in its URL, so researchers can use the session key to uniquely identify a live session and retrieve relevant data. There are also command-line-based applications available (such as Instagram Scraper) that can scrape and download Instagram users' photos and videos, but this raises issues with user privacy and may violate the platform's terms of service. Collecting text data is similar to that described above. Each post has a unique key and a unique URL; using them we can identify posts and comments, if they are publicly accessible.

Procedures that asynchronously capture multimedia data from Twitter and Instagram were used in our study when third-party solutions proved insufficient. The procedures used are very similar to the ones that capture synchronously. They have an additional benefit in that it can be used in situations where data has been deleted. However, the usefulness of web archiving services for Instagram is not as common because it is more "closed" than Twitter. It is possible to find and store deleted Tweets via web archiving services if the original tweet's URL is still available. The world's largest web archiving service is http://web.archive.org. With relevant media capturing software as mentioned above, videos in those deleted tweets are still accessible and downloadable. This is a manual process, and there are no programming skills needed. For Instagram, Isdb.pw is a large archive of stories on Instagram, but it was closed in early 2020. There are a few data collections available on Archive-it.org, mostly uploaded by researchers from American universities.

Capturing Audio Visual or Image Data on Twitter

There are programming options for streamlining the capture of videos. For instance, as mentioned above, Camtasia is a software that can record screen and corresponding audio and video. Using macroinstruction software, such as Quick Macros, researchers can automate the process, but this requires relevant programming skills. Various software and browser-based plugins can also store cached videos while browsing the Tweets. For instance, Twitter Media Assist is an extension that can convert and save MP4 video to GIF animated picture from Twitter in real-time. It has a Chrome and Firefox version, and it can be automated using software such as Quick Macros.

Similarly, there are scripts available for downloading images automatically. For instance, Twphotos (https://pypi.org/project/twitter-photos/) is a command-line front-end tool that

can link to Twitter API and retrieve photos. Whilst downloading, one can specify photo size, number of photos to get, and whether to download only new photos since last downloads. Note that image files, due to either their number or file size, may require a large amount of storage space.

Capturing Audio Visual or Image Data in Instagram and Other Platforms

As mentioned earlier, Instagram and Facebook closed their public API to third-party developers. Researchers may seek cooperation with Instagram or account owners if they want to use API to access visual or audio data through Crowdtangle or their Developer services (https://www.instagram.com/developer/). Programming solutions without cooperation are possible and are similar to Twitter but may violate the terms of service. For other platforms, the ability to use programming solutions to gather data depends on the platform's API policy, and the configuration of content; for instance, we were unable to apply these procedures to Triller as posted replies to livestreams "disappeared." Each new platform requires its own approach; either the terms of service or the appearance of the platform in third-party solutions options will indicate whether the API is available to program data collection, but ultimately some trial may be necessary to test the best approach for a particular research project.

Do I Need Ethics Approval?

The prevalence and accessibility of social media data mean that researchers are often tempted to follow the data before they have done their due diligence on whether and how they should gather the data. The internet and social media data reside in a grey space ethically, as data can be seen as both publicly available archival data on the one hand, and personal and private data on the other. Just because it is on the internet does not mean that it can be used in research without following your institutions and national human research ethics protocols. Figure 15.1 is a rough guide to when seeking ethics approval is appropriate (Townsend and Wallace, n.d.). Note, you should always check your institution's policies and the social media platform's terms of service first before conducting your research.

Methodological Recommendations

This chapter explored the unique process social researchers encounter when capturing livestreaming music performances. The uncertain future outcomes of COVID-19 and live music events make this research area ripe for more inquiry as the phenomenon continues to evolve. Based on the possibilities and pitfalls of research on livestreaming performances, we make recommendations for methodological best practices and issues to avoid after exploring Verzuz battles via Instagram, Apple TV, and Twitter.

A well-defined research question is first highly recommended before launching data collection. Research questions guide investigations and help researchers determine the data collection criteria—data type, temporality, and social media platform, which is imperative for a study on livestreamed music performance. The time investment on research question development prompts researchers to explore the various data types (video, image, text), temporality (asynchronous and synchronous), and social media platforms (Twitter, Instagram, Apple TV, etc.). Each option yields different results and may or may not support the proposed research aim.

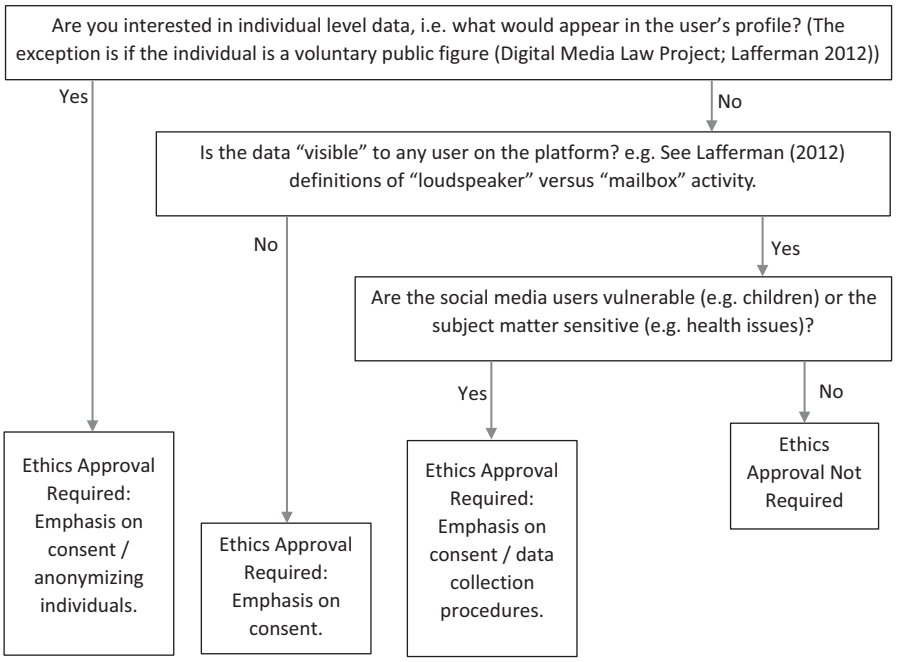

Figure 15.1 A flowchart of ethics
Source: Own elaboration.

We faced challenges with each of the data collection options. First, having programming skills or hiring a programmer is highly recommended to collect the needed content, particularly on Instagram. Second, Twitter proved to be the easiest platform to access because it supports third-party services. Third, the different data formats—video, image, and textual data—require a tailored approach to their collection and their subsequent reconstruction into a complete composite text of the performance experience. The aggregation of these manual tasks can be tedious, laborious, and time-consuming for collection, reconstruction, and analysis. There is no third-party or programming solution for all aspects of this process. Our process of recombining the text and video data required coding the timing of both the video and text data to marry the response to the event within the larger performance it corresponded to. Analyzing composite text also requires specific processes to understand the meaning of the whole performance (Eagar and Dann 2016b). However, textual social media data generates a huge quantity of data, using automated text analysis software, such as LIWC or Leximancer, which may offer a way to reduce the analytic burden (Wilk, Soutar and Harrigan 2019; Berger et al. 2020).

Technology reliability is uncertain. While technology and digital platforms offer convenience for researchers and consumers, it is ephemeral, fluid, and ever-changing. It is recommended to not rely on one digital platform for data collection. System updates, new features, and potential recording barriers may impact data collection. After determining the proposed research questions, select more than one digital platform, if possible, and remain abreast of any functional updates in advance of recording synchronous data. Advanced research and diligence are helpful to avoid pitfalls and determine alternate plans if needed. Further, explore approaches to asynchronous data in cases where archives are relatively intact or

synchronous options are not available. For example, Verzuz battle video content is uploaded to YouTube by others capturing different views, textual data, and video data, which the researchers could rely on rather than capturing their own recording of the performances.

Finally, deploying a realistic approach to livestreaming research is highly recommended. Accept that you cannot capture all the intended data. This approach is supported by the earlier recommendation of selecting well-defined research questions to ensure efficiency and manage productivity, while collecting desired data via the most suitable and functional digital platform. Patience and flexibility are also suggested. Aside from the platform challenges, studying the Verzuz battles illuminated impediments to data collection, beyond the researcher's control, such as cancellations, COVID-19 outbreaks, delayed starts, heightened tension between artists, and changing platform and data collection affordances. Data collection is a fluid process, and it is important to know your options so you have backup plans for when things go wrong, and they will go wrong.

Further Reading

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