Abstract

This project examines the oral history of the original dance style of Hip Hop, breaking. Breaking is performed to music in sequences of movement while standing, on the floor, and in the air. There is minimal quantitative or qualitative data about the practitioners and scholars in its culture. Most of the information regarding its history is spoken orally or locked away in Video Home System (VHS) tapes. This impacts future generations who want to learn the culture and dance because primary resources are limited and fragmented on the Internet. A hundred VHS tapes, encoded in analog frequency modulation (FM) on magnetic tape, were transcoded into 10-bit uncompressed and H.264 digital file formats over a 3-month period. Social media was used to crowdsource metadata on selected video clips. It was predicted that metadata collection would contribute to annotating video clips where supplemental explanations were nonexistent on the Internet or inaccessible to noncommunity members. Established community members collectively identified and verified people, places, and back stories in the video clips. This suggests that memories of moments are still shared orally in the culture but not widely known or documented.

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Keywords

digital humanities, breaking, dance, film studies, American studies, archival studies, Hip Hop studies

Breaking, notoriously known as “breakdancing,” has travelled through mainstream peaks and underground valleys from its creation in the 1970s to the Youth Olympics, planned for October 2018. Urban youth in New York City created their own style of dance, which was featured in early 1980 films such as *Style Wars* (1983), *Flashdance* (1983), *Wild Style* (1983), and *Beat Street* (1984). During this time the dance made a transnational impact, spreading to Europe and Asia through press tours and promoted performances. Mainstream exposure declined in 1990s and resurfaced during the 2000s.

During the 1990s, the culture flourished as a sub-culture and underground networked community. No mainstream films were released. As a result, artists and event promoters distributed VHS tapes of solos, documentaries, and annual events—most being independent productions, with only a few being commercially sponsored later in the decade. Steffan “Mr. Wiggles” Clemente, in an interview at Purdue University, confirms that VHS tapes served as a tool to “dump” footage, since “before that, getting footage was impossible.” Furthermore, he comments on how VHS tape distribution was analogous to a “bboy/bgrrl record deal” or “underground hustle,” an entrepreneurial generation of income. As a result, VHS tapes became traded commodities that doubled as pillars of knowledge for breaking culture. Clemente calls them “ancient scrolls” (Clemente 2017). Clemente confirms that his videos, *Breakaway Magazines Vol. 1–3*, were inspired by Kenneth “Ken Swift” Gabbert’s videos, *7-Gems Video Magazines Vol. 1–2*. Both Clemente and Gabbert are members of Rock Steady Crew, the group of dancers featured in films during the 1980s mentioned earlier. Their VHS tapes were the first batch of videos distributed about breaking culture. As an effort to preserve these artifacts, both their volumes were digitized and annotated with notes during the research process.

According to Fogarty (2012), both Clemente and Gabbert were setting up “imagined affinities” for the community. Breakers shared commonality in mediated communication that took place through VHS tapes. In *7-Gems Video Magazine Vol. 1* (Gabbert & Clemente 1996), Gabbert opens the introduction with a setting in Rio de Janeiro, Brazil: “We’re going to start off this seven grandmasters video tape, we’re going to start building with y’all, and hopefully with our trip over here we can build with y’all more on the capoeira influence that has been seen a lot since the early 90s in breaking” (Gabbert & Clemente 1996). Distributors shared their video collection with others in an effort to promote “cultural exchange and knowledge building,” but there were internal barriers.

In many instances, a dancer would receive a “copy of a copy of a copy of a video,” which eventually led to VHS tapes becoming safeguarded (Fogarty 2012). Toronto-based breaker Joseph “J-Rebel” Hersco states dancers “did not share” tapes because “there were no formal ways to learn how to break” (Hersco 2017). Hersco is suggesting that VHS tapes were rare resources. Miami-based breaker Rodolfo “Rudi Goblen” Cano remembers when he searched for these resources by “calling Blockbuster’s and mom-and-pop shops trying to find *Beat Street*, *Wild Style*, and *Style Wars*,” which evidently took him “a

long time” (Cano 2017). As an alternative method of “digging” for these films, he was able to find short clips of breaking on the television program, *Yo! MTV Raps* (1988–1995). The program featured hundreds of rap music videos and is credited to have put “hip-hop on the map around the globe” (Weingarten 2018). One particular video Cano remembers is *Chief Rocka* (1992) by musical group Lords of the Underground. The music video included breaking for approximately “2 seconds,” and Cano “would look at those 2 seconds and rewind those 2 seconds” to learn how to “top-rock” and do “footwork,” two essential elements of the dance (Cano 2017). Recording home videos (VHS tapes) using a video-cassette recorder (VCR) was common in the 1990s. For Cano, these short video clips served as a learning tool until he eventually found and rented *Beat Street*. His rental accrued “eighty dollars” worth of late fees, and that was okay because the video was sacred, like the “Bible” (Cano 2017). Both Hersco and Cano are well known for being members of the breaking community with distinct styles, or flavors, and have established their brand names in the local community of Toronto and Miami respectively. Furthermore, it is possible to link their legacy in breaking to films and home videos archived in this research project.

In the 2000s, technological innovations such as the Internet and video games changed how new generations encountered breaking. There was a shift from analog to digital storage mediums. Noncommunity members were able to share any type of video by uploading content to YouTube, for example. As a result, as stated by Steven “Zulu Gremlin” Roybal, many videos only “show the art, but not ask the questions of what the art is, and that would make it confusing for the world.” Unfortunately, in the past, “the media falsely named everything ‘breakdancing,’” which included many dance styles in one, such as “popping, locking, and breaking” (Roybal 2017). Therefore, the absence of primary sources limits knowledge in the community and changes the general public’s perception of the culture. Moreover, the Internet transformed “imagined affinities” (Fogarty 2012) into solid connections through community discussion forums and social media networking, leaving the cultural value and significance of VHS tapes depreciated. Today, YouTube and Instagram are treated as digital repositories where community members shallowly engage with content. In Jorge “Popmaster Fabel” Pabon’s article “Physical Graffiti” (2006), he states that “the best way to preserve the dances is by learning from the earliest available sources” and that “many other

genres of dance have borrowed without giving credit to their rightful owners.” The life expectancy of magnetic tape medium is estimated to be 10 to 30 years. This largely depends on how the objects are stored and the quality of the tape from the manufacturer (Council on Library and Information Resources 2017). Overall, the medium is considered to be obsolete with production of VCRs ending in 2006. As Fouché (2012) states, “Hip-hop is about the music and the cultural expression of a sense, a feeling, or a style”; therefore, in an effort to preserve the first texts in breaking culture, this project was created.

MATERIALS AND METHODS

Materials

Archiving Workstation

I conducted the first part of the study by adapting materials and workflow in Ashley Blewer’s “minimal viable workstation” (MVW) documentation (Blewer

Materials	Group
Dell Optiplex 7010	Computer
Dell 1908FPb	Computer
Seagate 2TB External Hard Drive	Computer
Panasonic AG-1980	Audio/Visual Equipment
Sony SLV-951	Audio/Visual Equipment
AVT-8710 (Multi-Standard Time Base Corrector)	Audio/Visual Equipment
Xdimax Grex 7.4 (Video Stabilizer)	Audio/Visual Equipment
Blackmagic Intensity Shuttle	Audio/Visual Equipment
Blackmagic H.264 Pro Recorder	Audio/Visual Equipment
Sony MDR-XRB700	Audio/Visual Equipment
S-Video 4 pin Male	Audio/Visual Equipment
BNC Male adapters	Audio/Visual Equipment
2-Male to 2-Male RCA Audio Cable	Audio/Visual Equipment
Blackmagic Design Media Express	Software
Adobe Premiere CC	Software
Sony DCR-TRV280	Camcorder
Sony DCR-TRV19	Camcorder

■ **Table 1.** Workstation materials for encoding.

Figure 1. X-rayed images of workstation materials.

2016). All hardware inventory was purchased through secondary marketplaces (Purdue Surplus, eBay, Amazon). Although this workstation was built from consumer technology, it did allow encoding and transcoding of analog VHS tapes into 10-bit uncompressed and MPEG-4 digital file formatted videos. Both digital formats are recognized as standard video formats and are used in professional archival workstations. In contrast, the VHS tape format is obsolete. The MVW for this study included computers, software, audio/visual equipment, and cameras.

Inventory of VHS tapes were a mixture of personal collections, purchases from secondary marketplaces (eBay and Amazon), and donations from breaking community members. One hundred VHS tapes were processed in a 90-day period, approximately one to two digital encodings per day.

Methods

Archiving Workflow

The method of digitizing was a linear workflow as diagrammed in Figure 2. The analog signal started with the VHS tape through the Panasonic AG-1980 (or Sony SLV-951), which was then connected to the AVT-8710 Multi-Standard Time Base Corrector (TBC) through an S-video 4 pin Male. The TBC was

connected to the converter through an S-Video 4 pin Male to 2 BNC Male adapter for real-time H.264 encoding through Blackmagic H.264 Pro Recorder. Alternatively, using the Blackmagic Intensity Shuttle (BIS), the TBC was connected through S-Video 4 pin Male and 2-Male to 2-Male RCA Audio Cables. BIS was used for 10-bit uncompressed capture. Blackmagic Design Media Express video preferences were NTSC 720x480, 30-frames per second with varying bitrate quality 2 Mbps to 10 Mbps. Audio preferences were 256 kbps, 48000 Hz, stereo output. Once digitized, files were further packaged into shorter videos for analysis. The method was the same for Hi8 and miniDV tapes. This is noted in Figure 2 as the second option for analog format into the workflow.

Uncompressed 10-bit digitization is approximately 100GB per hour of video, while H.264 encoded is approximately 2GB per hour of video. Therefore 100 VHS tapes at 100GB per hour is 10,000GB or 10TB. Since this study used a single 2TB (2,000 GB) external hard drive, 95 out of 100 VHS tapes were encoded using H.264 to decrease storage requirements.

Annotations

I recorded and cataloged metadata using an adaptation of the Dublin Core Metadata Initiative (DCMI) Metadata Element Set, Version 1.1 (Dublin Core Metadata Initiative 2012).

Figure 2. Workstation workflow from analog to digital format.

Metadata Element Set	Description
Identifier	An unambiguous reference to the resource within a given context
Title	A name given to the resource
Creator	An entity primarily responsible for making the resource
Date	A point or period of time associated with an event in the lifecycle of the resource
Type	The nature or genre of the resource
Format	The file format, physical medium, or dimensions of the resource
*Version	An original or multigenerational copy
*Cover	The details of cover art or the type of casing
Source	A related resource from which the described resource is derived
*Location	The origin and language of the resource
Relation	A related resource
*Annotation	An account of the resource

Table 2. Custom metadata element set.

Figure 3. Official panel discussion flyer distributed online and posted on campus.

The DCMI element, *description*, was replaced with *annotation* to enable documenting of crowdsourced metadata. I uploaded H.264 encoded video clips ranging from 30 to 60 seconds to the Instagram social media mobile platform. Each video clip was *tagged* with keywords to initiate a conversation with community members. Keywords included DCMI elements (title, creator, date, and relation), as well as oral history, and hashtag #hiphopscholarship. The comments section for each video clip served as a container for annotations. Community members were free to engage in conversation and tag other users. Furthermore, video clips were uploaded and tagged to coincide 2017 breaking event productions. For example, *Battle of the Year* (1996) video clips were posted during the weekend of *Battle of the Year 2017*.

Panel Discussion

I organized a panel discussion at Purdue University's Black Cultural Center on February 10, 2018, to collect qualitative data. Kenneth "Ken Swift" Gabbert, Ayumi "B-girl Ayumi" Fukushima, and Raphael Xavier were panelists, while Dr. Joseph Schloss moderated the discussion. Schloss has written extensively about the foundation of breaking in his book, *Foundation: B-boys, B-girls and Hip-Hop Culture in New York*. The three panelists were chosen based on their experience in underground, commercial, and academic perspectives in breaking culture. Xavier has been awarded a Pew Fellowship in the Arts, Guggenheim Fellowship, and USA Knight Fellowship. Both Schloss and Xavier teach Introduction to Hip-Hop Dance, a lecture/studio hybrid class, at Princeton

University. Gabbert, as mentioned earlier, was featured in films from the 1980s, created VHS tapes in the 1990s, and has been appointed a teaching position at University of California, Los Angeles. Fukushima, from Kyoto, Japan, competes extensively around the world in breaking competitions and was chosen as the first womxn to compete at Red Bull's annual flagship breaking competition, Red Bull BC One. Panelists discussed the relationship between music and dance, archiving, and the role of gender in breaking culture.

RESULTS

Archiving

Table 3 shows the results of archiving using the workflow in Figure 1 in terms of the adapted DCMI Metadata Element Set. The data set is abbreviated from 100 to 10 objects. The selected objects were both encoded in 10-bit uncompressed and H.264 digital formats.

Annotations

Video clips that were tagged and commented with questions initiated discussion between community members (CM). Annotations were analyzed for context, then added into the metadata table. Instagram analytics provided additional data about impressions and reach per post, which confirmed the number of CM able to engage with the video content. Additionally, CM sent private messages to the Instagram

Identifier	Title	Creator	Date	Format	Version	Location
BP-001-SM	<i>7 Gems Vol. 1</i>	Ken Swift, Mr. Wiggles	1995	VHS	1	Various, World-wide
BP-002-SM	<i>Breakaway Video Magazine Vol. 2</i>	Mr. Wiggles	199x	VHS	1	Various, World-wide
BP-003-SM	<i>Honey Rockwell's B-girl Video</i>	Honey Rockwell	199x	VHS	2	New York City, USA
BP-004-SM	<i>Overflow Vol. 1</i>	Easy Roc	199x	VHS	1	California, USA
BP-005-SM	<i>Freestyle Session 1</i>	Cros 1	1997	VHS	2	San Diego, USA
BP-006-SM	<i>Boogie Brats: Just To Prove a Point</i>	Boogie Brats	N/A	VHS	3	Toronto, Canada
BP-007-SM	<i>Style Elements: Strategic Monsters</i>	Style Elements Crew	1997	VHS	3	California, USA
BP-008-SM	<i>Battle of the Year 1998</i>	Thomas Hergenröther	1998	VHS	1	Germany
BP-009-SM	<i>Who Can Roast the Most 4</i>	Ground Zero Crew	2001	VHS	1	Miami, USA
BP-010-SM	<i>Survival of the Illest</i>	Navator	2001	Digital8	1	Connecticut, USA

Table 3. An abbreviated metadata element set of digitized artifacts.

Question

Can someone comment about Brooklyn rocking in the battle here? In the 90s it was common to see Brooklyn rock, why not in 2017?

User Responses

"Brooklyn rock was done in a BBOY set because of the feeling, musicality, and the Battle spirit but many later learned that it is a separate Dance from Breaking and not the same as top rock the prelude to going down. Bboys nowadays understand that Rocking will not be judged and kills your thighs and uses a lot of energy so is usually not expressed in competitions but more so in a solo freestyle show off demo"

"In Texas it is still used quite a bit. He rock dancers came out around 2005 and heavily started educating the bboys on the jerk and freestyle. Brooklyn style. I'd say for some it inspired and for some it may have discouraged. Although it wasn't meant to discourage, people didn't want to misrepresent that dance."

"Can't say for sure why it's not seen as much these days . . . many factors at work. First off, the term 'Brooklyn Rock' is questionable. Many have stated that the style is NOT from any specific borough in NY. Many have argued the actual timing, steps & technic. In my opinion, it has become yet another Dance Form to fall victim to, TOO much debate. It is simply NOT fun to do anymore because of all the ridicule."

Table 4. Crowdsourced annotation of artifact BP-004-SM.

account wanting to donate VHS tapes, and requesting copies of video clips posted on the account. In some cases, video clips were downloaded through third-party applications, then uploaded by other users for their followers (audience). In these cases, I created a new set of annotations for video clips, distinguishable by Instagram's post identification number.

DISCUSSION

The results of archiving primary sources and enhancing metadata with annotations indicate that the concept of creating a breaking archive is a useful tool for preserving and teaching breaking history. Supported by practitioners and scholars, a breaking archive must preserve individual experiences as well as the collective culture. Information and knowledge about the culture should be monitored before circulation.

Schloss discusses these topics with panelist during the 48-minute mark in the panel discussion, he states:

Figure 4. VHS cover of artifact BP-004-SM.

Figure 5. Screenshot of video from artifact BP-004-SM.

The idea of what should be remembered, what should be documented, and how and who should make that decision because we are getting to a point where there is a history now and for the most, right now, that history exist in individuals people's minds, and those people won't necessarily be around forever. Should history be preserved in breaking? If it should, how or what should be preserved and what aspects in ways of preserving are important? (Breaking Project 2018)

Xavier responds:

As a relatively young genre it still has some growing to do. This is the first time anything in the older sense has been able to be done because they were kids before. For example, Jazz musicians 188 years old, they play drums and they better than they were, they become masters. That thing has yet to be seen in this form. So there's a lot of stuff [Gabbert] holds that people may not know or they may haven't seen before

because he's holding on to that. Until he puts a book out or until he has someone that who is studying him specifically, those things may never be known. So 25 years from now someone comes along says now these things need to be documented. You start with the young people who do things that came from the generation before, who do things from the generation before, who do things from the generation before until you get to Kenny's era, and then before . . . I think it's a difficult thing to do, but I think it's important. (Breaking Project 2018)

Fukushima responds:

We have the same kind of problem [in Japan]. In this scene we have many videos. We used to not have. When I start[ed], we have YouTube, but I didn't know because I'm really bad on the Internet, so I always have DVD. It is really special. We don't really have the chance to see all the time—'Somebody got it. Okay! Let's watch together'—you know? The DVD's come to my town and one day I need to give to the people and then the next person. That's how I learned when I start[ed]. (Breaking Project 2018)

Gabbert responds:

I think the archiving thing is a big deal. . . . I can identify with the way as we become older, our siblings and families don't realize the connection we have with the things we have. . . . I think archiving is what's up, I took a lot of notes, I got into it heavy right after that [archiving symposium in Harlem] and I started at looking at what I own and how bad I was storing it and how it was aging so fast and did the research. We just did 140 8mm VHS, VHS-C's, and all these different types of media that we had we just dumped them all to hard drives, got it all done. It was expensive but it was worth it and it's protected. . . . Right now in the scene, just to finalize what I'm saying, the real importance is because there's a lot of information that is going out and rushed out information in the Internet and the culture and so many questions worldwide, so many young people have all these interesting questions about the history and you know I think everybody has, you know, an experience, and if you can share that experience that's what's up. Definitely everyone has a story, you don't want to read one book you may want to read maybe 25 or 30 and then make a conclusion, and that's why we need a lot of people archiving their

Question

Is this an airtrack, airflare, or airtwist? The body is more horizontal than vertical. Also, he's moving in a circular, windmill pattern on the ground and in the air.

User Responses

"He referred to this as a 'Star Tracks.' My recollection is, ppl who were learning airflares were emulating Ivan's 'Star Track' which at the time, everyone refer to as 'airtracks.' *Note, this is just my recollection & not to take anything away from Pablo (Soul Control), who is credited for first doing continuous air flares."

Table 5. Crowdsourced annotation of artifact BP-005-SM.

Figure 6. VHS cover of artifact BP-005-SM.

Figure 7. Screenshot of video from artifact BP-005-SM.

Figure 8. Ayumi Fukushima pictured with students after panel discussion and dance workshop. Image courtesy of Monica Chang.

experience. . . . It's good for the students of the culture to have as much access to the information as possible, so archiving is what's up. (Breaking Project 2018)

CONCLUSION

By creating a sustainable archiving workflow for media tapes, it is possible to work directly with donors and community members in archiving their personal collections. There is an opportunity for Purdue University to contribute to this initiative by creating physical and digital space for a breaking archive in its Archives and Special Collections Research Center. Academia is the perfect bridge between the underground and commercial worlds in breaking culture.

Next, an innovative, collaborative approach for video annotating must be explored further. Crowdsourcing verification of metadata can be applied to larger semantic-based technologies, allowing for a searchable index to be created. For example, an index of

breaking culture's dance moves could be matched with video content in a database. Operations such as searching, filtering, and linking can take place through gamification (Viana & Pinto 2017). Once metadata structures are implemented, oral history of breaking culture can be further researched and analyzed. For example, in terms of the United Nations Human Development Index, a three-dimensional index including life expectancy, education, and gross national income indices (United Nations Development Programme 2016).

There is a genuine opportunity to discover valuable cultural information about the Hip Hop dance diaspora by establishing a platform for discussion. This can be accomplished through academic programming. Breaking is one of many styles that are under the umbrella of Hip Hop dance. Other dance styles also deserve the same research and resources because they share cultural roots with breaking in Hip Hop culture. Members of Mop Top, Mystidious Misfits, and Elite Force featured in the documentary *Reck'n Shop—Live From Brooklyn* (1992) visited Purdue University in April 2018 to teach dance workshops

Figure 9. Ejoy Wilson demonstrating the difference between Chicago and New York City house dance at Purdue University CoRec. Image courtesy of Saad Mukhtar.

and talk about their underground and commercial experiences with students. Their collective experiences clarified what Hip Hop dance was like in the early 1990s in parallel with breaking. Through additional panel discussions and scholarly research, connections can be made between geographic locations where different styles or flavors of dance were formed and created, such as the transnational connections between Hip Hop dance styles in North America and Europe or Asia.

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