

Digital Preservation of Dance, Inclusion and Absence

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CHAPTER ?

Digital Preservation of Dance, Inclusion and Absence

Sarah Whatley

Abstract:

Digital technologies have introduced a raft of opportunities for novel modes of dance documentation and preservation. More particularly, digital tools have been developed that have offered dance scholars and artists opportunities to develop new modes of dance visualization and transmission, creating new ways to access dance content and in turn provide new insights to dance, and its compositional and relational properties. This chapter examines three digital dance resources that have emerged in recent years; Siobhan Davies RePlay, Digital Dance Archives and Synchronous Objects, and will draw on a series of interviews with dance practitioners and researchers who have worked long-term with technologies, to explore what it is that is preserved and for whom, the nature of the documents or ‘objects’ that are created, the role of the spectator, viewer or ‘user’ in the construction and preservation of dance, and how digital methods disrupt the temporal properties of the dance ‘event’. The chapter seeks to argue that the opportunity afforded by digital technologies to access the hidden processes of dance creation, shows how these digital artefacts become new kinds of records of performance.

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Introduction

Digital technologies have introduced a raft of opportunities for novel modes of recording, documenting and preserving dance content. More particularly, digital tools have been developed that have offered dance scholars and artists opportunities to develop new modes of visualising and transmitting dance, creating new ways to access dance content and in turn provide new insights to dance, and its compositional and relational properties. Many of these tools and resources have been created by interdisciplinary teams, thereby stimulating novel partnerships that have generated increased interest in dance – for its access to body knowledge and different kinds of intelligences (Leach 2014) - whilst also probing the embodied practice/document dichotomy. Consequently, dance is now distributed more widely and what was once an art form that struggled to persist beyond the live event, dance is now available through digital archives, scores, websites and open data banks, and many of these are experimental in nature (Sant 2014). The increased availability of digital technologies has also revealed that the dance making process is a process of distributed cognition and authorship, thereby unleashing the choreographer from the conventional role of single author, with the potential to make more visible the work of dancers who were hitherto on the margins of the dance community.

This chapter will examine three digital dance resources that have emerged in recent years that raise a number of questions about the digital preservation of dance. These questions revolve around what it is that is preserved and for whom, the nature of the documents or ‘objects’ that are created, the role of the spectator, viewer or ‘user’ in the construction and preservation of dance, and how digital methods disrupt the temporal properties of the dance ‘event’. I will claim that the opportunity afforded by digital technologies to access the hidden processes of

dance creation, shows how these digital artefacts become new kinds of records of performance.

I will chart recent initiatives and projects that seem to have been particularly influential in how dance and digital technologies have found a synergetic relationship. This will inevitably be only a partial picture; the field is far too rich and diverse to cover the many activities, projects, and the artists who have contributed to innovation in this field. I will focus particularly on the sphere of activity that is primarily concerned with strategies for documenting and preserving dance, but where artists are core to how these projects have developed. Hence whilst my primary focus is not on digital dance in live performance; where dance artists have experimented with digital processes to innovate their own performance making, using tools such as motion tracking, motion capture, sensors, wearables and telematics, some of these processes have seeped into dance preservation processes and have influenced methods used. Indeed, new experiments that have emerged because of technological possibilities have influenced changes in archival practices and the relationship between the artist and archive.

Interesting in this context is that some of the early innovators in artistic practice are now rejecting digital processes in favour of returning to the body as a primary source for their arts practice. It may well be that the close examination of the workings of the dancing body afforded by digital technologies, and the concomitant impossibility of digital technologies to fully capture the intricacies and idiosyncrasies of human bodies in motion, has drawn many back to wanting to work with the fleshy, corporeal dancing body. Some of those dance artists and researchers who have worked long-term with technologies, shared their views during a series of interviews between 2014 and 2016 as part of the European-wide 'RICHERS' project,

which focused on how cultural practices are being recalibrated because of digital technologies¹. Comments drawn from those interviews are included in the sections that follow (and all are anonymised unless the interviewee specifically agreed to being named)². For example, one respondent talked about wanting to use digital technologies not to distance her from her own body but as another way of encountering self, asking “rather than seeing technology as something that takes that away, how do we use technologies to bring that back?” (Respondent 1 interviewed by Amalia Sabiescu, 2014).³

Digital Technologies and Dance – A Recent History

In the 1990s, a seismic shift began in the way that dance was being made, performed, transmitted and distributed. With the introduction of the World Wide Web, communication technologies brought about new kinds of collaborations and a growing interest in how digital tools could be positively disruptive to traditional creative processes. Consequently, dance as an art form expanded in new directions. Several landmark projects prompted artists and scholars to reflect on how dance as an art form could respond to digital technologies and the decades since have been marked by experimentation, often bringing dance artists and experts together with practitioners and researchers in other disciplines to move the art form forward. The evolution of contemporary dance in particular has been heavily influenced by digital and networked media. The meeting between dancing bodies and computers provides the opportunity to consider how computers transform how we think about and conceive of motion. Whether through simple video recordings, motion capture, animation, sensors or holograms, whenever dance is captured and rendered through technology, it is transformed into data. The growth in the generation and circulation of dance as data has fueled an emerging discourse that considers its impact on issues such as ethics, intellectual property and copyright in dance.

Of the many significant projects that have revolutionised the progress of dance in the digital environment since the closing years of the twentieth century, I mention only a few here. One that was a catalyst for many artists who were exploring the potential of new technologies was Paul Sermon's *Telematic Dreaming* (1992). In this virtual reality performance installation, dancer Susan Kozel 'performs' with her projected image, as her image is in relation with audience members, at the same time as being able to watch her own projection in duet with the audience member on a screen. The work opened up new modes of encountering dance where the audience become more implicated in the action, moving away from the passive viewer, seated and removed from the action in the traditional theatre setting. Merce Cunningham and OpenEndedGroup's 1999 motion tracking project *BIPED*, where projections of dancing avatars appear to interact with the live dancers on stage, brought together virtual and material bodies on stage. His later work with *LifeForms*, a computer choreographic software tool, was born out of his own desire to continue inventing choreographically when his own body became less able to explore and demonstrate new movement ideas to his dancers.

Such artist-led projects paved the way for other initiatives that transformed dance into digital data. One example is William Forsythe's 2009 project *Synchronous Objects*; a substantial website that focuses on one single dance work; *One Flat Thing, reproduced* (2006). It includes information about how the dance was made, to help audiences understand how to view the abstract work, which is highly complex in its structure. A number of digital scores show how the choreography is built up around several systems at play in the choreography. Scott deLahunta, one of the researchers involved in the project explained in an interview as part of the RICHES project referred to earlier:

One is a cueing system, when [the dancers] look at each other and then they wait for one person to move, and then another person moves. And another is a system they call *alignment*, so it's when one person moves this way in space, and some other person, maybe his head moves this way in space. The lines that are on top, these lines help the audiences see why the choreographer made those decisions.

(deLahunta, interviewed by Amalia Sabiescu, 2014)

Digital Dance Objects

Synchronous Objects was designed as a “choreographic object or a collection of twenty choreographic objects that function together to communicate the ideas in the dance into animations, interactive tools and so on” (Zuniga Shaw 2014). It developed out of Forsythe’s earlier explorations that were informed by film and digital media, even though he did not use a computer in the studio. As deLahunta commented in interview for the RICHES project in 2014, “early in the ‘80s [Forsythe] would choreograph dance and he would talk about bringing an algorithm into class, or an algorithm into the composition process, he would talk about cutting and pasting. So his language, the composition ideas, were informed by media”. But in the same interview, deLahunta pointed out that “if you looked in a different direction, you could find a hundred experimentalists around the margins, working with technology” (2014). Although these projects on the edges are harder to track, they are likely to have played their role in influencing many other interdisciplinary or transdisciplinary dance and media projects.

Since its launch, *Synchronous Objects* has spawned the emergence of other ‘choreographic objects’⁴ as a category of digital dance ‘things’ or artefacts, often made by the artist in

partnership with designers and researchers, and that have had an impact on artists, scholars, and on collaborators from beyond dance, including architects, engineers, software developers and those working in human factors and ergonomics. According to one RICHES project interviewee, the impact of this developing research was that “performing arts could draw upon the sciences and sciences could also invite artists [to collaborate] Dance or performance suddenly became a valued partner in the production of cultural knowledge, or know-how” (Respondent 2 interviewed by author, 2014). Collectively, this growing corpus of digital choreographic objects have helped to assert dance as a knowledge-producing practice, or a “knowledge-making enterprise” (Leach 2017, 142), catalyzing thinking about the complexity of the ‘object’ when situated in the domain of dance, and acting as a supplement, extension or expanded iteration of the dance ‘work’ itself.

Of these ‘things’, digital scores emerge as a recurrent feature of digital dance preservation projects, either as a naming for a document that aims to record the structural, spatial or temporal components of a dance work, or as a form of translation from the live to the digital. As artist Myriam Van Imschoot describes in relation to her *Oral Site* archive project, which began by dealing with scores;

The score is a perfect case for a platform that works with documents, questions their functioning and alters their status. Sometimes a score refers to a past creation, reveals its compositional matrix, but many times it has a pro-active dimension too when it calls for new instantiations. It breaks open temporalities (past, present and future) and possibly agencies too, because scores can be passed on to other executioners. This dynamic element and unstable status, of a document

unhinging fixed authorship, underlines the active nature of documents and their performative possibilities for reuse. (Van Imschoot and Engels 2013, 37)

Imschoot points to the concerns that underpin many of the projects that provide a backdrop to the digital documentation projects that I focus on here, each of which is similarly initiated by a dance artist or has the artist at the core of the project. Each also disrupts the temporal nature of preservation, by intervening at different stages of the before, during or after of the dance event.

Preservation and the Legacy of the Digital on Dance

Whilst digital technologies have led to a culture of greater openness in dance, whereby sharing work has been facilitated through the ease of online video platforms such as YouTube and a broader context in which social media is the norm, less attention has been paid to how digitalization can support the long-term preservation of dance works. This is a situation that has not changed even as the recording of material has become more commonplace, affordable and immediate (through streaming services, for example). To some extent, this reflects the experimental drive of many of these projects that seek to expand beyond creating an archive of dance with the principal aim of categorising, stabilising and ‘fixing’ the dance for preservation purposes. Dance preservation has for some time generated debate about its purpose and impact on the dance field (Jordan 2000). However, the speed at which dance can be made immediately available, accessible and consumable, mirrors the speed at which technology and file formats advance and change, making digital preservation vulnerable.

For some artists and scholars, the disappearance of dance is less of a concern if the body is believed to be the primary holder of memory. In interview for the RICHES project,

contemporary artist Isobelle Choinier describes how the evolution of technology presents her with a huge problem when the hardware doesn't exist anymore or software stops working, yet believes that "we are just beginning to understand those very complex forms and relations because it changes the way you perform, it changes the way you have to deal with aesthetics, with communication. So it is really a very complex thing, but I think that it's really part of the experience, but I'm not the one that will defend the disappearance of the body. I think it is part of what can be explored" (Respondent 2, interviewed by author, 2014). Disappearance might thus be experienced as an inevitable property of the dance/digital interface, whether desirable or not. Indeed, because digital archives of performance retain a condition of ephemerality, they may not be so distanced from the performance that they seek to document, "but which necessarily distance themselves from other foundational notions such as presence, embodiment, non-reproducibility, and liveness" (Bench 2017, 160). Diana Taylor, who has been highly influential in thinking about the relationship between live performance repertoire and the archive, argues that the question of disappearance in relation to the archive and the repertoire is one of kind as well as degree (2003, 20). In considering the analogue archive, she further claims that:

the 'live' performance can never be captured or transmitted through the archive. A video of a performance is not a performance, though it often comes to replace the performance as a *thing* in itself (the video is part of the archive; what it represents is part of the repertoire). Embodied memory, because it is live, exceeds the archive's ability to capture it. (20; italics in original)

Despite Taylor's assertion, for many there is a recognition that documenting dance is important for being able to study dance in depth, because it is necessary for ensuring that dance is fully present as part of our cultural heritage, and digital technologies can be a

valuable asset in preservation strategies. Taylor (2010) has since considered the impact of the digital on archival practices. She notes that “the objects in the digital archive require, rather than resist, the ‘change over time’ I associated with the traditional archive” (2010, 7), recognizing the flux that is inevitable with digital resources. Whilst she insists that “the embodied, the archival, and the digital overlap and work together and mutually construct each other” (3) she concerns herself mostly with examining what she names the “antiarchival practices” (14) that the digital environment has led to. She is referring to the ease at which content can be recorded but without the professional standards or institutional controls that typify archival practices. If not “antiarchival”, another consequence of the digital is the ‘accidental’ archive that emerges when dance motion is tracked and captured for other purposes, such as for analyzing biomechanical, expressive or other reasons and a valuable library of dance content is collected. These unintended archives accumulate value for their preservation of dance, even if these corporeal data banks are ‘open’ and accessible for others to use and reuse varies from project to project.

Despite the increasing availability of digital technologies, the costs and labor involved in digitizing analogue content for archival purposes, or for creating more expansive and multi-layered digital web-based dance resources, means that there are relatively few openly accessible dance resources.⁵ Many physical dance archives have online catalogues. Some have a limited range of content accessible online (predominantly text and static objects rather than video). The lack of video and dynamic content reflects the relative lack of this kind of dance content in historic collections as well as the cost of building the data bases, of digitizing, conserving, storing and backing up large files. Dance companies, organizations and individual artists typically have websites that can offer access to rich content including some video extracts, but most are produced for the general audience and are designed primarily for promotional purposes. These

digital artefacts are quite different from the archives created by artists and scholars concerned with the construction of memory and their affect. English and Theatre scholars Guilia Palladini and Marco Pustianaz put forward the idea of the “affective archive”, describing it as wavering “between materiality and immateriality, between conservation and transformation” and which “is intended to acknowledge the impulse that both creates and mobilises the archive as an endless process” (2017, 12). Their project is concerned more with physical or material archives and affect may be less palpable in the digital environment, but as with all archival materials, any dance collection provides a glimpse into the relationship between the subject of the archive and the act of collecting, and between all those involved in its creation. Moreover, the short shelf-life of digital technologies is as relevant to the digital resources that seek to preserve dance works as it is to dance artists who utilise these technologies, and shapes the discussion that follows. I now turn my focus to three contrasting digital dance resources, which are designed primarily as experiments in dance documentation, transmission and preservation, and have had impact in dance practice, research and teaching.

Siobhan Davies RePlay

My own direct involvement in the creation of *Siobhan Davies RePlay (RePlay)*, the digital archive of the work of British choreographer Siobhan Davies (1950-), provides me with an insider perspective on its development, impact and subsequent migration in an effort to extend the life of the archive in response to the inevitable short shelf-life of software noted earlier. I have written elsewhere, on the process of building *RePlay* (Whatley 2013a, 2013b, 2013c, 2014, 2017) so my focus here will be on its wider contribution to digital dance resources. *RePlay* was developed initially between 2006 and 2009, a dynamic time in which artists and scholars alike were contemplating questions about archive, repertoire and dance documentation. YouTube and Vimeo were only just emerging and there was almost no dance

available on open channels so many dancers were understandably wary of sharing their work in this new and untested environment. Similarly, custodians of other archival collections where there were some traces of Davies' work were understandably protective about what could be accessed and for what purpose. But digital technologies were shifting efforts away from analogue tools for recording dance, such as dance notation and film, to methods that would not only document the dance as a 'product,' but which could provide access to other traces of dance making and performance, such as rehearsal material, choreographic notebooks, design prototypes and so on.

Making use of the ability to store content in a digital repository in a way that is fully searchable provides the user with a new way to view dance. The viewer can search through multiple records afforded by computing power that far exceeds what a human can achieve, choose what to view, in what order, for how long, juxtaposing video, audio, text on the screen. By using simple tools (such as the digital scrapbook on *RePlay*) the user can organize material into personalized collections. Consequently, the conventional way of encountering dance through viewing a live performance, or on a single video recording, or through photographic traces and various written accounts of the dance, often distributed across multiple sites and in fragmented archival collections, extended into offering more choices to the viewer. Moreover, a process of dissection or segmentation of the content on *RePlay*, necessary for cataloguing and developing the metadata schema, begins to reveal new dimensions of the dance and in particular the many layers of the dance making process. An ontological shift thus begins to happen in the digital environment in which the dance 'work' no longer exists only as a singular event or product.

In *RePlay*, the uncovering of more records of the making process and the collection of such a diverse range of materials led to the creation of two playful interactive graphic scores that conveyed through data visualizations something of the structural features of the choreography. These were named ‘kitchens’ for offering insight to the ingredients of the choreography and how these are ‘cooked’ to become dance works. Each of two kitchens, created for two choreographies; *Bird Song* (2004) and *In Plain Clothes* (2006) ⁶ drew on Davies’ wide collection of design sketches, rehearsal notes, films of rehearsals and so on. These materials were available only because the archive was built close to the time of the choreographic process. For earlier dance works, these materials were either lost or scattered amongst Davies’ collaborators so were less easy to recover.

Each ‘kitchen’ was designed individually to draw the viewer into the choreographic compositional structures (through color, movement, spatial organization on the screen), the source materials for the dances (journals, sketch books), the working processes of the dancers (through their reflective writing) and design concepts (through sketches of costumes, sound scores, draft lighting designs). Much like the intention in *Synchronous Objects*, the kitchens had a similar educational purpose by being built to enhance the understanding of two abstract dance works. The kitchens are historical digital documents in their own terms, revealing the state of the art at that time in terms of digital data visualization.

In 2013, only four years after it went ‘live’, *RePlay* became unsupported as a digital platform as the software exceeded its useful shelf life⁷. In common with many other digital resources, the content was at risk without continual upkeep. Many digital resources once ‘completed’ can too quickly become ‘zombie’ projects, neither dying nor growing, so are left suspended. Unlike their physical counterpart (such as a physical manuscript) the digital

object, whether digitized material (scans, videos, etc.) or born-digital⁸ items such as digital photographs, are vulnerable without a commitment to translation and ongoing preservation. As an archive, such a temporary existence can threaten to undermine the purpose of the project, to preserve work that was previously vulnerable. *RePlay* had become a historical artefact in its own right, reflecting technological changes over the last decade, revealing its own history of production, and participating in the tension between dance's disappearance and permanence.

Replaying the Archive

The decision to migrate *RePlay* to a new software platform to ensure its longer life revealed how new formats may sustain the content in the collection but pose a threat to the original design and interface. *RePlay* (as was) grew alongside Davies' developing oeuvre, producing a living history of the work she was making. It performed a secondary role in revealing the evolution of digital archives and their affordances for dance in a wider sense, even though this defies the archive's own ontological status as a collection of 'the past'. The new platform reflects the tensions that often operate in the building of digital resources. The original *RePlay* was built through a creative and dialogic process where decisions were made between the whole team about what to include and how to organize material. The aesthetic of Davies' choreographic work informed the aesthetic of *RePlay*, including how the material was organized on the screen, the color palette, fonts and so on.

Theatre historian Joseph Roach argues for reproduction and recreation of culture as "a process of *surrogation*" (1996, 2; italics in original). The reproduction of archival content could be viewed as a similar process of surrogation, which later Roach equates to "performance" (4). The 'new' *RePlay* has become a surrogate for the first, which was itself a

form of substitution for the live ‘original’ dance thus continuing a chain of erasure even in its efforts to preserve. Roach’s writing focuses primarily on the social processes of memory and forgetting, examined through the way that memories are embodied in and through performances, extending the understanding of performance by making it coterminous with memory and history (1996, 26). The relationship between performance and digital technologies is not his focus. However, just as performance participates in the transfer and continuity of knowledge, the digital surrogates that performances create do something similar. The aim of *RePlay* is to achieve two key aims. The first is to contextualize dance, linking its history with memories of those who made, performed and viewed the dance. The second is to somehow foreground the material properties of dance whilst finding structures that transmit the tactile sensibility and sensuous presence of those materials alongside the complex structures that mobilise dancing bodies in performance.

Digital Dance Archives; A Collection of Many Archives

RePlay is an example of a digital dance preservation project that focuses primarily on a single artist’s output. By contrast, the *Digital Dance Archives* (DDA) portal⁹ provides access to the visual content contained within multiple dance collections (videos, photographs, drawings, sketches and so on). As an ‘archive’ it is thus not a full collection of textual materials and other records that would support an in-depth analysis of a particular choreographer or choreographic work, rather it is “primarily a visual storage and retrieval system for digital content whose analogue storage and organization is maintained elsewhere” (Fensham 2017, 72).

Developed between 2010 and 2011, the project brought together dance researchers, computer scientists and the National Resource Centre for Dance (NRCD) in the UK to digitize a

number of archives managed by NRCD, which is housed at the University of Surrey, create a linked data structure that would provide access to these archives, as well as *RePlay*, and design a tool that would allow users to search by visual similarity. Glitches in the background code led to some surprising results being returned. It was thus primarily effective in providing a compelling and serendipitous tool for discovering hitherto hidden connections between visual content. For example, by tracing the lineage of a particular dance step or body pose, links could be made between different dance genres and traditions. And the colors in a number of geometric forms drawn by dance theorist Rudolf Laban, for example, could generate surprising links to contemporary theatre set designs. The tool helped users to build digital scrapbooks of visual material, enriched by user-generated textual annotations as ways to interpret and develop narratives through the content.

Unlike the focus on a single choreographer in *RePlay*, or the fragmented records stored by major museums and other memory institutions, DDA opens up “a new form of archival memory or social choreography of movement history” (Fensham 2017, 73). However, without additional resources the search tool could not be updated. Consequently, whilst the ‘about’ page on the portal describes how by using simple, icon-based instructions, the four different modes of visual search allow the user to search across the DDA collections to find similar instances of shape, gesture, sequences and color, what actually appears is a frame without a function. As with ghost links or the ‘link rot’ of broken hyperlinks, the lost function underscores the fragility of digital code. However, the primary dance content is preserved and NRCD continues to add new digitized collections drawn from their hard copy archives to the portal, featuring the visual records of dance companies and traditions spanning the last century, predominantly UK-based, as diverse as Extemporary Dance Theatre, Ludmila Mlada, Revived Greek Dance, Kokuma Dance Theatre and Yolande Snaith Theatredance.

Motion Bank

Taking a different approach to the digitalization of dance is *Motion Bank*,¹⁰ an initiative by choreographer William Forsythe that builds on the earlier *Synchronous Objects* website.

Focusing on the production of a series of digital dance scores, the project brought together researchers, leading dance choreographers, designers, educators and computer scientists. The aim was to “explore how digital technology can be uniquely applied to the challenge of documenting, analyzing, notating/annotating and presenting dance” (Forsythe and deLahunta 2011, 12) by archiving a number of choreographers’ conceptual approaches along with video recordings and three-dimensional data documenting the performances and the depictions created by the designers.

Forsythe described *Motion Bank* as “the world’s first library of digital dance scores” (quoted in deLahunta 2017, 130). He did not want the site to become “exclusively focused” on his own work, but that it should become a “medium for knowledge transmission” rather than a “Personal Platform” (quoted in deLahunta 2017, 129). The international

choreographers/dance artists who feature in Motion Bank; Deborah Hay, Jonathan Burrows & Matteo Fargion, Bebe Miller, and Thomas Hauert were invited “on the basis of their distinctive, articulate and diverse approaches to creating dance works” (Forsythe and deLahunta 2011, 12). Each worked with a group of interaction designers, educators, programmers and computer scientists, working with different motion analysis tools including Kinect and Motionbuilder to visualize and animate different aspects of their work.

A series of digital scores emerged through this interdisciplinary design process that are as diverse as the artists themselves and that aim to reveal the particular aesthetic, conceptual

approach and devising methods particular to each artist. A core goal was the development of software that might be used by others to create their own online scores to add to the *Motion Bank* collection (deLahunta 2017, 133). Two tools were developed. The first is an annotation tool PM2 based on the Piecemaker annotation tool developed by David Kern, the other is MoSys, a publishing system developed for the publication of the online scores (deLahunta 2017, 134). *Motion Bank* underscores how many of these digital projects rely on a process of contagion whereby interdisciplinary teams configure new spaces of creative possibility in exploring ways to mediate between recording, translating, visualising and preserving dance content. Preservation of both the dance works and the site became a by-product rather than a principal aim of the project. As deLahunta explained in interview for the RICHES project, in his discussion with the artists, “the word ‘preservation’ never comes up, but from my perspective it is of course preservation because as long as we take care of it and we keep updating the website so that it doesn't disappear” (interviewed by Amalia Sabiescu, 2014).

Forsythe's work has been highly influential, not only in dance practice and research, but in other fields because of his interest in the thinking that underpins dance making, cognition or corporeal knowledge, and his collaborations with experts in other fields, leading to a growing discourse around the notion of ‘choreographic thinking’ (Forsythe 2009; deLahunta, Clarke and Barnard 2012). This in turn has stimulated interest in how digitalization participates in the revealing and transmission of dance knowledge and choreographic systems that were previously concealed within the embodied exchange between choreographer and dancer, hidden behind the walls of the dance rehearsal studio and then made invisible, or at least harder to see once transformed through the multiple stages of choreographic development. What is documented on *Motion Bank* is therefore not only the dance works but the activities and outputs of those who have worked closely with the choreographers, thereby recording a

phenomenon that has emerged through the interface between dance and digital technologies, that of the interaction between excavation, transmission and preservation of dance.

Nonetheless, those without access to funding and expertise have to rely on their own resources to document their work. If the document is a form of evidence, proof that it happened, without those documents being available, accessible and preserved, many dance works and dance practices are under-represented or even entirely absent from the archives.

Conclusion

Dance is evolving in interesting ways in the twenty-first century due in part to the developments in digital and networked media. The projects discussed here are all concerned with how digital technologies can participate in the preservation of dance and the nature of dance and choreographic knowledge (Leach 2014). As Zuniga Shaw, who led the *Synchronous Objects* project argues, these projects act as choreographic resources, not to pin down but to flesh out the dance, to explore its contours (2014, 99). She asks, “can the original resources be repurposed in a subaltern move to simultaneously create a record and assert the ephemeral ground of live art-making, the fiction of all memory and the partiality of any score?” (99). In the projects mentioned here, the resources are designed to explore the connection between embodied artistic practice and digital visualization, and to generate exchange between the artists, technologists and users.

RePlay has been a valuable touchstone for others building digital archives of performance and a key reference point for dancers, teachers, researchers and general audiences.¹¹ It has helped to unsettle our normative historical records in which dance has tended to be absent. However, the aim of *RePlay* was to foreground regeneration rather than capture. In proving its own regenerating capability, the new site for the archive conveys a sense of renewal even

if in its new form, it also reveals a certain loss of what was before, mirroring the continual and perhaps inevitable disappearance of the dance ‘as was’.

The *Digital Dance Archives* project brings together several collections and by prioritizing visual content, enables the user to make links between dance content represented through photographic stills, video, drawings, posters and other visual documents. *Motion Bank* extends the exploration with computing technology much further, by layering information about the dance making and structuring process in the construction of several digital dance scores. As Bleeker and deLahunta note about digital dance projects that have emerged in recent years:

Even though many of them work with ‘captured’ dance and provide means to store this and make it accessible, many of them explicitly resist the idea of merely looking back to the past. (2017, 12)

By focusing on three well-funded digital dance projects I am bringing yet further attention to projects that cannot fully represent an environment that is rich with experimentation, but which are nonetheless influential on how this sector of activity has grown. The labor and costs involved in creating digital resources are an inevitable barrier for some in the dance sector, as is the lack of a robust infrastructure for linking data, and for licensing digital content, so that more dance can be discovered, accessed and reused. Dance theorist Harmony Bench discusses how the reconfiguration of the archive through digitalization, as not only a store of documents but as a new mode of knowledge production, has “redirected the archive’s social, political and historical purposes and achievements, prioritizing circulation over preservation” (Bench 2017, 156), marking a “shift from the archive as a state-sponsored

repository for and producer of histories to the archive as a market-authorized site of circulation for cultural memories” (157). Projects that have emerged since the millennium have fuelled this developing discourse, informed by memory studies, digital curation, digital humanities and data management practices, and which is centred on the practices of collecting, archiving and safekeeping dance.

Much of the writing in recent years that has considered the impact of digital technologies on dance has focused on the way dance transforms (or not) through digitization, on the way dance changes its ontological nature (or not) through being created with or through digital technologies, and on the different ways in which dance is transmitted, shared and preserved through digital means. The digital preservation of dance requires a systematic and standardized approach. Done well, it stimulates the imagination so that viewers (or ‘users’) find new ways to respond to and analyze dance. Unlike the analogue archive, which may well contain stable objects, the digital archive requires mediation and can be as transformative and transitory as the content it seeks to preserve. The digital dance document thus operates as a continuum of practice; more than a static object, more than an inanimate left-over, and more than merely the residue or ‘after’ of the dance.

Endnotes

¹ The Renewal, Innovation and Change: Heritage and European Society (RICHERS) project was funded by the European Union FP7 programme; grant no. 612789. See <http://www.riches-project.eu>. (Accessed 16 September 2017)

² I received ethical approval from Coventry University Ethics Committee for conducting these interviews, which were carried out by the author and project research assistant, Amalia Sabiescu.

³ Respondents who did not wish to reveal their names are referred to as Respondent 1 and 2 (dates of these interviews are given in the reference list).

⁴ The term ‘choreographic objects’ appears first in William Forsythe’s 2009 essay of the same title, in which he reflects on projects he has initiated that have utilized digital technologies for inscribing, recording and transmitting his dance practice.

⁵ More single artist and company archives are in development, for example *The Digital Pina Bausch Archive*: <http://www.pinabausch.org/en/archive/the-digital-archive> or are repositories collecting together several archives, for example *Numeridanse.tv*: <http://numeridanse.tv/en/>. (Accessed 25 July 2017). In addition, a useful analysis of a number of American “Artist-Driven” dance archives is provided by Rosemary Candelario (2018).

⁶ See: <http://www.siobhandavies.com/thekitchen/birdsong/> and <http://www.siobhandavies.com/thekitchen/inplainclothes/> on Siobhan Davies RePlay. Accessed 18 September 2017. <https://www.siobhandaviesreplay.com/>.

⁷ The year that *RePlay* went live also marked the end of Davies making dance works for the theatre and proscenium arch stage. It was as if preserving her past work had released her to do something new.

⁸ ‘Born-digital’ usually refers to those materials that originate in a digital form as opposed to analogue materials that are digitized and therefore become digital through digital reformatting.

⁹ The Digital Dance Archives project was funded by the UK Arts and Humanities Research Council (AHRC) Digital Equipment and Database Enhancement for Impact scheme.

¹⁰ See Motion Bank website. Accessed April 20, 2019. <http://motionbank.org/>.

¹¹ *RePlay* has been cited by teachers, researchers and archivists since its launch. It has been a core reference point for the Routledge Performance. Archive. Accessed April 19, 2019. (<http://www.routledgeperformancearchive.com>), Rambert Dance Company’s archive project and the Walker Art Center, Minneapolis, USA.

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(6601 excluding Abstract etc.)