

# MULTIMODAL EXPERIMENTS IN THE DESIGN OF A LIVING ARCHIVE

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## ABSTRACT

Designing a ‘living archive’ that will enable new forms of circus performance to be realised is a complex and dynamic challenge. This paper discusses the methods and approaches used by the research team in the design of the Circus Oz Living Archive. Essential to this project has been the design of a responsive methodology that could embrace the diverse areas of knowledge and practice that have led to a design outcome that integrates the affordances of the circus with those of digital technologies.

The term ‘living archive’ has been adopted as a means to articulate the dynamic nature of the archive. This is an archive that will always be evolving, not only because of the on going collection of content, but more importantly because the performance of the archive users will themselves become part of the archive collection.

## INTRODUCTION

This paper presents a discussion of two foundational propositions that have informed a three-year investigation into the design and development of a

‘living archive’ for the performing arts. The live performing arts are an important part of our shared cultural heritage and it is vital that their histories be documented and preserved. Performing arts, particularly circus performance, are recognised as transitory art forms that lack formal systems of documentation and notation (such as music and dance for instance). As such film and video documentation are paramount to the preservation of histories of performance, the development of new repertoire, and the teaching of performance skills. Since the advent of video technologies in the late 1960s, it has been increasingly feasible for performing arts organizations to record their performances and rehearsals. However, until now such video collections, which are maintained by the companies themselves, have been largely inaccessible and inevitably prone to deterioration. The invaluable Circus Oz collection consisting of over 300 videos, which documents in detail the company’s performance history since 1978, is an exemplar, and provides an excellent context in which to experiment with the design of a ‘living archive’ prototype.

By proposing innovative solutions to the question of how to meaningfully utilise the video documentation of a specific performing arts company, this research has sought to explore new modes for engaging with archives and archival documentation in a manner that has relevance for both audiences and performers alike. In this way the project opens the way for a paradigm shift in thinking about the relation of performance to knowing, and the ways in which the tacit knowledge of circus performance can be enhanced through the sharing of these videos via social media protocols and practices. The ‘living archive’ also challenges us to think of new ways to design not only systems but also interfaces that enable tacit and ephemeral knowing to be documented, discovered, and shared.

Apart from physical person-to-person transmission, audio-visual recordings are the main format in which

knowledge of particular circus acts or performances have been recorded and passed between circus performers. The dynamic and subtle nature of the performance skills and tricks, cannot be adequately conveyed through still photographic images, or reviews in newspapers. Video provides the plastic information of a whole sequence of movements, which is essential to this mode of practice and expertise (Polanyi 1966). The language of performance development is one of oral and kinaesthetic knowledge exchange (Sennett 2008); consequently, contemporary circus artists have commonly drawn upon ad hoc private video collections to aid in the development of new repertoire. One of the significant innovations inherent in this project's research was to explore how video can be used to extend the parameters of participants in such events, by allowing performers, as well as expert and lay publics, to view, comment upon, annotate and discuss specific circus acts and routines. The aim is for this vernacular knowledge to be shared, discussed and built upon both within Circus Oz and in dialogue with its 'knowledge community' of peers, scholars and fans.

The concept of the 'living archive' is novel, situated between the relatively fixed standards of description and control employed through the metadata standards and taxonomies of the traditional archive and the supposedly open, porous, informal and carnivalesque world of user generated content and Web 2.0 systems. This project has investigated methods for the integration of these two approaches to archival practice. Wandering between the institutional formality and demands of the traditional archive - where to some extent the artefact as thing is the privileged term - and the rise of personal and vernacular forms of personal curation and archiving that have arisen as a consequence of low cost digital media used for the creation, storage, and dissemination of digital artefacts. In this project this has been achieved by the development of a more or less traditional video archive, derived from the existing audio visual material that Circus Oz has collected, and then experimenting with a variety of social media layers and protocols not only 'over' the video archive, but also 'through' it. This dynamic and functional social media layer allows individuals to 'write into' (in various media forms) as well as 'read' (or view) the videos and user contributed material. The communities of users of the archive vary in their interests, as some may coalesce around specific styles of act (for instance juggling), others around perhaps an individual (a noted performer and the recorded history of their work), while others may simply note and comment upon shows and acts that they have seen as members of the audience. In all cases the project has sought to develop both an interface and a user experience that allows others to record and contribute their own presence to the archive, so that what is typically individual and solitary can become collective and shared. The ability to collate a diversity of contributions, and to computationally curate them via such simple mechanisms as tags and self-descriptions, we hope will make tacit to both the company, and the

performers, what otherwise remains scattered, atomistic and implicit.

## LITERATURE AND THEORY

Understanding the context of the organisation, its evolution and the historic and contemporary practices of performance and video was essential for the design of the 'living archive'. The following text outlines some of the key theoretical and practical frameworks that have informed the design research in this project.

Circus is a visual, aural and kinaesthetic artform written on the body of its performers. Circus performances do not generally follow a written script — in Circus Oz, for example, a brief list of act-names based on apparatus (e.g.: 'Tightwire, Hoop-diving, Juggle') will be the only text defining the 'running order' of the show. Furthermore, circus, in contrast to other physical performing art forms such as dance, has not developed a language of written notation defining specific physical gestures and movements that can generate a choreographic 'score' and record for posterity the specific form of a particular performance work. One reason for this is that a coherent language of written notation is more difficult for an artform such as circus which is inherently hybrid and multi-disciplinary in form. Dancers, barring instances of avant-garde experimentation, use a single common apparatus: the floor. The circus, by contrast, is profligate and promiscuous: it uses all manner of apparatus: aerial, manipulative and floor-based. And it is a magpie artform, "eternally opportunistic" (Stoddard 2000, p.1), capable of continually and rapidly absorbing new cultural influences into the forms of its performance.

Historically, circus knowledge was passed on within circus families, and to outsiders who were accepted into families, either through marriage or other means such as extended apprenticeships. Circus was a family business, and is still seen as such in the traditional circus sector (Syred 2011, Cannon 1997). As Mullett has commented: 'The form of teaching was experiential and practical. Families became known for specialising in particular skills, which were built on and improved as they passed from generation to generation' (2005, p 123).

For the international new wave of circuses founded in the 1970s and 80s, among which Circus Oz was an early leading exemplar, circus knowledge could not be gleaned through formal institutional means. Some Circus Oz founders joined traditional circuses (Mullett 2005, pp. 128-131), for the express purpose of learning experientially from the established circus families — not only performance skills but also the tacit knowledge of how to run a circus on the road (put up the Big Top and so on). In other cases, they discovered circus tricks through ad hoc visual means, such as by studying photographs in books, following up by experimenting in rehearsals to find the physical means to build the end-point pictured. The photograph showed the 'what' of

the trick, but only through physical trial and error could the 'how' be arrived at. Cinema, particularly the slapstick performers of the silent movies, as well as television's popular variety shows provided another rich field of inspiration connecting the new circuses to the traditions of vaudeville entertainment. However, in the days before videos, DVDs and Youtube, there was limited capacity to examine such moving images in detail: for example, to view repeatedly, slow down or freeze the image.

Circuses have always been early adopters of technology, and it is not surprising that circus troupes such as Circus Oz immediately saw, in the 1970s, the potential of video as a technology to record, analyse and disseminate their work. Circus Oz have attempted to capture on video complete recordings of as many performances each year as feasible, and have amassed a collection of some 900 tapes in a variety of formats. The Circus Oz video collection has for many years, functioned as a larger version of the private circus performance collections stored and shared by individual performers in the circus community. Its cataloguing and usage has been ad hoc. Performers and directors in Circus Oz would commonly view videos of their current show to analyse and improve their acts as the season or tour progressed. When developing new acts, they would also refer from time to time to videos of older Circus Oz shows for inspiration, or to recycle or combine in a new way previous show ideas. In recent years, as non-linear video editing technologies have become affordable and, indeed, ubiquitous, Circus Oz directors have used video in a more systematic way to shape new performances, digitally recording acts and experimenting on screen with varieties of show running orders, musical and other choices. In this context, the concept of the 'living archive' emerges as a logical progression of these techniques and practices: as a flexible and adaptive way to produce new knowledge from and around this video collection.

The video of a Circus Oz performance is a representation capturing more or less well, the tacit knowledge embedded in the creation of that particular performance. All the elements of circus — the skills, the gear, the physical relationships, the gestures and movements, the dialogue, the music, costumes, rigging, the interactions between performers and with the audience — may be there seen and heard. However, each individual viewer of the video, is able in isolation, to interpret and understand the knowledge represented in the video only through the prism of their own prior experience. The 'living archive' concept, in proposing the development of a shared interactive knowledge space around the web of videos, allows for a growing community of users to build upon each other's knowledge. For instance: The performer featured in the video adds notes about how the act developed; the rigger adds an anecdote about a safety incident that occurred 'behind the scenes' while the act was taking place in the ring; a former member of Circus Oz

comments on the resonances between this act and one the company performed a decade earlier (we can view that clip too, of course); an audience member describes memories of their response to the show that night; a circus scholar places the act in a broader cultural context; a circus fan from a different culture situates the Circus Oz act within his or her frame of reference ... and so on.

Across the fields of performance studies and digital technologies, there is a growing number of publications and debates regarding what makes a performance 'live' and the relationship between act, the digital space and documentation (Salter 2010, Dixon 2007). What makes something 'live' is being challenged. Being present in body, does not ensure 'presence' in terms of attention or engagement with what is being performed (Dixon, 2007, 130). Digital technologies challenged notions of time, space and reality; roles and contexts such as performer, performance and original or mediated are challenged through the mediation of cameras and screens (Salter 2010, 116). Is the recording of a performance for the present (an experience or locale for performance) or documentation the future? There is a "strong contradictory thread running through the live arts" (Reason, 2003, 82), a tension between the inherent (and highly valued) ephemerality of live performance, and the desire for a durable, archival record of said performance. Any record of performance, due to its ephemeral nature, can never be the 'authentic' record. The archive is only a memory, a reminder of performances past. The 'real' performance exists in the relationship between the audience and the experience. There can be no completeness, accuracy, or true authority in a performance archive: the video has only 'surface authenticity' the archive has only 'claimed authority' (p87). While much of the archival research regarding digital archives has focussed on the act of capturing 'authentic' records in digital forms, the fact remains that 'acts of contextualization, representation, or use of digital archives receive scant attention' (Hedstrom, 2002, 23). Yet it is in the act of interpreting the knowledge represented in the video through the prism of their own experience — the acts of use and contextualisation — that the record of performance could be said to exist.

The 'living archive' concept responds to and indeed emerges from the particular aesthetic processes and culture of Circus Oz. Circus Oz, across its thirty plus years, despite numerous changes in personnel, has retained a strong and distinctive performance culture. The show is considered to be jointly created by all of those involved: acrobatics, musicians, directors, designers, and technicians. Each has a distinct role to play but has freedom to contribute; in particular the performers are not assigned roles or acts by the directors, nor assigned costumes or props by the designers. On the contrary these decisions are negotiated, contingent and subject to evolution, just as each show meets its audience and evolves in response to

that interaction with the audience. The Circus Oz show, although highly polished and constructed, is in fact always unfinished, in so far as its form is both open to spontaneity and improvisation on any particular night, and also constantly being adjusted. Therefore it seems appropriate that the documented records, the archive for such a cultural organisation, likewise take on these qualities, made possible, like Wikipedia, in the Web2.0 environment where the online presence of the archive is both a location for community access, and a method for archives to define relationships with patrons (Samouelian, 2008, 42). It has been further argued that the future performing arts archive should actively encourage multiple representations and perspectives, and allow for 'creative reuse and reinterpretation to keep the spirit of the performance alive' (Jones et al., 2009, p165).

## DATA AND METHODS

There are two important components to this project. The first is an existing video archive that documents thirty-five years of performance history. The second is a desire to rethink existing paradigms of contemporary performance particularly in relation to time, authorship and place, and how this can be transformed through technology. The 'living archive' project emerged from Circus Oz's desire to explore these two aspects, with the proposition being that it would be through the design of a new way of engaging with an archive that new conceptions and experiences of circus performance could emerge. This simple proposition raises many questions and challenges and these have been used to frame the project objectives, the design of the team and the various types of expertise that are required to realise it. It has also required the team to adopt a multi modal research methodology, integrating various approaches as the complexity of the project have evolved.

One of the core ambitions of this project was to explore possible new forms of circus performance. These new forms of performance include the potential use of contemporary digital documentation combined with the archive as a means to create new performances by circus practitioners. It also creates the possibility for users of the archive to create new digital performances by drawing on the contents of the archive and the current thirty-three years of video documentation. Exploring these possibilities has required a critique of what the current practices are and to position these within these potential future forms of performance creation. This aspect of the research has integrated theory, observation and proposition; and has underpinned the design explorations in the various other aspects of the project.

With new models of performance come the possibilities of new types of circus performers; a realisation that lead the research team to question who the performers will and could be within this new context for circus. They could be the audience, the researcher, the person in the

centre of the ring or the circus enthusiast who has never been. As such issues of expertise, history, authority, temporality entertainment or scholarship start to emerge, especially when we frame these possibilities within the context of an archive (Fig.1).

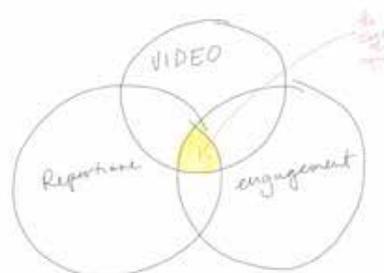


Figure 1 – the intersections between video documentation, repertoire and engagement by all potential constituents

As a consequence of these research ambitions, the project team is comprised of a dynamic mix of expertise. There are circus performers and managers and ringmasters, creative directors, archivists, computer programmers, digital storytellers, interaction designers, historians and cultural theorists. It is a weighty mix of practitioners and academics, from science, humanities, business and the arts working together to think about, to think through, and to hypothesise what a 'living archive' might be and how it might be realised to address the broader concerns about future possibilities for circus performance.

The exploratory nature of the project has required the project team to adopt an iterative and exploratory approach to discovery. At times the methods for realising the research were founded in the cyclic nature of design and develop, and at others they are participatory, with the research team working with members of the greater Circus Oz community to identify potential scenarios for use in practice. Additionally there is the meaning making that emerges through critique and reflection. All of this has been done within an informed framework of innovation and contribution to the various fields that are invested in and essential to the project.

The performative nature of the research context and the research partner has engendered a culture of performance within the research and an acknowledgement of the embodied nature of discovery and exploration. In this way, the phenomenon of multimodal and performed knowledge production (Merleau-Ponty 1996) has guided the design of the series of workshops and prototype developments throughout the project.

Early workshops were focussed on active engagement with the circus community and involved an

experimental performance strategy on the part of the researchers. For example – a series of workshops were held in a relaxed ‘event’ context, with researchers wearing white lab coats, we introduced the project and early prototypes to the circus community in an environment closely connected with their experience of the shared history embedded in the archive content. The aim of this strategy was to encourage shared experience of the larger cultural context of the archive, as well as to collect data and to assist us in the early development of the archive prototypes (Fig. 2).



Figure 2 – Early workshops were ‘performative’ in nature

Later workshops involved deeper and more prolonged engagement with select ‘champions’ who provided invaluable data regarding current and future use of the archive (Fig 3). The workshop participants either feature in the archive (either on screen in the videos, or closely involved in the performance production). As such, they have a deep knowledge of the various contexts surrounding the video content, and could begin to ‘seed’ the archive with both objective and subjective information drawn from their experiences.



Figure 3 – Later workshops involved deeper engagement with ‘champions’ in the community.

Acknowledging the various conceptions of research and rigour or relevance to each of the fields in this project; whilst also communicating the progress in ways that are relevant to the various research partners and funding agencies has been important to the project. In an attempt

to build bridges across points of difference and assist the team to be transparent and respectful, social media and other associated digital collaboration and communication devices were used to make all information open to the team and where appropriate to the public (Vaughan 2011). Additionally a series of digital prototype services were implemented to facilitate access to the videos. Using a technique of embedded, exploratory prototypes (Heyer et al., 2010), we have continually iterated on the design and development of the ‘living archive’ in close collaboration with research partners. The prototype application has been constantly accessible by project members, to provide ongoing feedback. We have continued to iterate on the prototype as new ideas and design directions are developed, and the dynamic nature of the prototype encourages ongoing experimentation and discovery. The prototypes was designed to enable a variety of forms of user generated content to be ‘attached’ to individual episodes and sequences to facilitate the collection and collation of a variety of formal and informal knowledge, in order to investigate what happens, and what emerges, when such performance specific practices are enabled.

This mix of methods, approaches and participants creates a complex space of potential confusion and confrontation. Conscious of this the team adopted an open and diverse approach to the project methodology and methods. The research process is documented in a project wiki and blog that all project stakeholders have access to (<http://www.circusarchive.net/>).

Table 1 summaries the diversity of methods used within the project often synchronously over the life of the project in the design and development of the ‘living archive’.

Issue	Method	Application
Current theory in circus performance and digital technologies	Literature review, professional networks within the field	Critique of living archive development and discussions for future use by other companies
Evolving understanding of digital archives	Literature review, project reviews	Design of archive and critique of developments
Database management and big data challenges	Literature review and trial and error	Design of database infrastructure
Interface design and the creation of digital screen based performance	Literature review, project reviews, scenario and prototype development	Design of interface and user experiences of the living archives
Engagement strategies with Circus Oz company	Workshops and presentation with members of	Design and development of the prototype through numerous

members	community Workshop 1 – introducing idea of project Workshop 2 – release of alpha prototype for trial and use Workshop 3 – release of beta prototype and community data collection	iterations
Integrating the ‘living archive’ into the life of the company	On going informal workshops and meetings with key people within the organisation	Design of on going use, hand over of prototype and scenarios of use issues

Table 1 – a diversity of methods used in designing the ‘living archive’

## DISCUSSION

Burdick et al (2012) argue that it is essential that we rethink the static nature of archives as knowledge entities. Stating that ‘(a)ccumulation is no longer enough to ensure the survival of the cultural patrimony. Objects that sit in storage... disappear into the ever-expanding heap of cultural remains, entering a limbo that in no essential way differs from being lost’ (p.48). For them animating the archive is essential for the future and that this requires a ‘user centred approach to the construction of archives that implies a multiplicity of use-scenarios’ (2012, p.48). In this research the project has adopted the term ‘living archive’ as a means for articulating and experimenting with how to animate the archive.

The ‘living archive’ project has provided an interesting and challenging context for us to explore both methods of, and the implications for, designing environments that enable multi-modal approaches for creating knowledge, and for experiencing information within a digital environment that is a collection or collation of documentation of a challenging kinaesthetic knowledge form. Across the design field, in theory and practice, there is an increasing awareness of the importance of designing *for* people and in relation to their particular needs and practices. Within this discourse terms such as situated knowing (Suchman 1987), tacit knowing, and practice are used as a means for articulating the messy and diverse nature of knowledge and practice in practice (Dourish 2001, Fallman 2008).

As argued by Boehner et al (2005) there is an increasing interest in and awareness of, the socially situated, culturally informed, affective nature of human interaction within digital contexts. For them, there is a lack of recognition and understanding within the human

computer interaction literature (and practice) of ‘everyday action as situated in social and cultural contexts’ (p. 59) and that it is these contexts that give them meaning. In response to this they propose that an ‘interactional approach’ to the design of affective digital systems and artefacts, and that affectivity is essential if we are to enable people to engage with the system and the content in a meaningful way. This interactional approach is contrasted with an “informational” one, where meaning resides within the technological system, and all communication is mediated through a rational model. In an interactional approach, meaning is constructed through interaction, and is subsequently closely bound with the situations and people involved in those interactions. In this way, the focus on affect emphasises that it is the whole person as a social, cultural and biological entity that informs the multiple ways that we engage with digital artefacts, and the multiple levels of meaning (Dourish 2001) that arise in those engagements

This increased focus on situated and emotive aspects of design as argued Suchman (1987), Dourish (2001) and Norman (2002) and then expanded on by Boehner et al (2005), has enabled an important shift in how we design digital artefacts and also how we understand their social role in everyday life. This realisation does in itself hark back to Schon’s (1983) emphasis on the dialogic nature of designing, and the ongoing ‘back talk’ that exists between designer, material and the process of making. Yet it takes it further by elevating the iterative conversation from being between the maker and the made, to being one between the maker, the made and the subsequent user. In the ‘living archive’ project the ambition is to extend this cycle of dialogue into an ongoing process of cultural production through the archive. The ‘madness’ of the design outcome in this context is never complete, the dialogue of the ‘living archive’ is ongoing, with each new user adding to the archive and the potential narratives that the living archive allows and creates.

Designing for such a dynamic and generative engagement between the various elements of the archive has required the project to explore possibilities for the ways in which people will seek out information within the archive and create new narratives within it. This has included allowing for the various layers of expertise and familiarity that a user may have. From the knowledgeable researcher or performer, to the lay enthusiast or the novice, each will have varying familiarity and expertise in relation to the content and the technology of the digital archive. As Schon (1983) highlights, ‘Knowing is ordinarily tacit, implicit in our patterns of action and in our feel for the stuff with which we are dealing. It seems right to say that our knowing is in our action’ (p.49). It is this mix between the tacit and the implicit that will enable people to engage with the archive and the patterns of use are both hypothetical in the pre-design of the system architecture

and in the patterns that subsequently emerge through the use of the architecture of the archive.

Design is often framed as being a propositional activity, one where designers must engage with the uncertainties of the unknown in order to 'shape a situation' (Schon 1983 p. 78). The notion of 'if' is one shaping possibilities and this can be framed by ideas such as:

- what can or might happen if, or
- what should or must happen if.

The move between can or might, and should or must, is a significant one is still open to the unknown the other embedded in certainty. In the design of a complex system such as a living archive both 'if' situations must be worked with – one frames an act of discovery in exploring the archive and creating the desired multifarious outcomes of engagement, the other refers to the technological infrastructure that makes the poetry of discovery possible.

## TWO PROPOSITIONS

The following are two examples of the initial propositions that framed the research and have been developed by the research team in their attempt to start to scope some of the 'if' situations that frame the design of the archive.

### ONE: ENABLING MULTIMODAL FORMS OF ANNOTATION ENCOURAGES DIALOGICAL KNOWLEDGE

The archival project proposed a research problem about how the multimodal collection and collation of information, from a diverse range of sources, might express, and form, knowledge. One of the ways we believed it would be investigated and achieved was through the ability to dissolve traditional hierarchies between artefacts, commentary and knowledge claims through the use of social media and Web 2 paradigms (O'Reilly, 2005).

Traditional approaches to knowledge construction, dissemination or documentation, particularly in creative practice, have wittingly or otherwise emphasised either the artefacts produced, or the accompanying 'explanatory' documentation. Similarly, from a traditional research perspective, the written text, usually essayist in form, has been privileged. In each model an epistemological economy is constructed where one or other of the terms is reified at the expense of the other, so that one is always secondary, subservient, and some sort of minor mirror to its master. This is a dichotomous model of the text *then* the artefact, or the artefact *then* the text.

The 'living archive', has experimented with the development of a dialogical model of performance *and* video *and* audio commentary *and* textual annotation *and*

photographic annotation of the available performances are present there is no privilege or priority between each mode (Fig. 4). As a consequence a plurality of knowledges are recognised and legitimated in the archive and the ambition of the system is for this rich mix of elements to live through use in the archive, thereby, enabling new knowledge about the circus, performance, audience, and experience to be manifest in the archive.

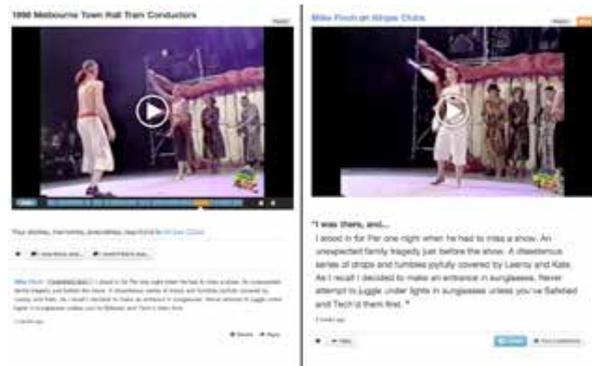


Figure 4 – Two interfaces to the same 'act': the 'living archive' attempts a dialogical model of annotation without privileging one mode over the other.

These experiments into various modes of annotation have taken place throughout the development of the various digital prototypes of the archive. The digital artefacts, and the responses to them, have served as reflective objects for the project team to further explore the limits of this proposition. By building the proposition directly into the prototypes, the project partners have come to their own understanding of the proposition through their *experience* of the archive. Embedding the proposition into the artefact has encouraged the appropriation of the archive by the Circus Oz community, acknowledging that "designing for appropriation requires recognizing that users *already* interact with technology [...] with an awareness of the larger social and cultural embeddedness of the activity" (Sengers et al., 2005, p.57)

### TWO: TACIT KNOWLEDGE IS EXPRESSED BETWEEN, NOT IN, THINGS

Archives are, like libraries, repositories. Places where things reside for the primary purpose of allowing access. However, while libraries contain things that already have much to say and be (books), archives are in many ways, repositories for things that gain meaning through external contexts to. Archives may be a collection of things related to an institution (for instance the National Archives of Australia), an individual (the Eisenhower Archives), or are an array of objects that have in common their shared 'objectness', (a national film archive for example), but a key quality of the archive is the integrity of the objects that constitutes its collection quite apart from their interpretation. Indeed, this is one of the distinctions between an archive, and a museum, where the former emphasises the integrity of

the collection while the latter, clearly performs an interpretive role. This is a world of things. Yet there is a difference, portraying a certain tension between the intimate, inward looking and almost private nature of the archive and the shared, extroverted and public museum (after all, it is hard to imagine a museum that is never open to the public, but quite easy to imagine a closed archive) that is contested within the ‘living archive’ as the archive, which are recordings of circus performance, are ‘opened’ to not only public access and exhibition but are explicitly invited to be interpreted, interrogated, named, commented upon, holus-bolus by any who so choose. This invitation, which is both allowing the archive to look out, but also through its capacity to capture these annotations, comments, and viewings also looks in, as this material, in turn, builds the archive.

The ‘living archive’ in the context of performance is an explicit effort to solicit and then farm the informal knowledge that is distributed amongst those who wish to contribute to the archive via everyday social media practices of annotation and engagement. This knowledge, which includes knowing the ‘how’ of circus performance, is informal, anecdotal, oral and shared. It is an embodied knowing but also relational, as, for instance, knowing how to juggle lies in the relation between juggler and ball, and does not reside in one, or the other. So with the ‘living archive’ knowledge about performance does not ‘lie’ in the video recordings, but between these and all that will accrete around them, which includes relations to other similar acts, iterations of the same act, relations to other acts by the same performer (all relations internal to the records of performance), as well as the commentary and appropriation of this by other performers, for repertoire, learning, and as a record (relations external to the records of performance) (Fig. 5). Such activities make explicit what is implicit, and so help to make visible and tangible what is tacit and otherwise internal. In this way the ‘living archive’ is animated to be outside of the boundaries of one place and a limited selection of visitors at a particular place and time (Burdick et al 2012). Designing the components of a digital archive that allows for this desired rich layer of discourse and interconnections has been one of the key challenges. From the back-end file storage and access, to meta-data schemas, interface design, and modes for the creation of individual narratives within the archive have all been part of this rich process. The walls of the archive have become porous and the affordances of digital technologies have enabled the archive to perform in new ways, through a broader community of performers or users.

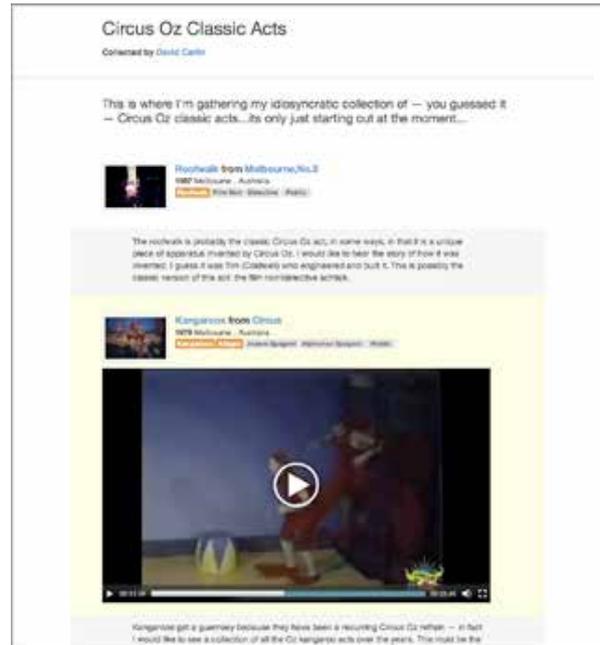


Figure 5 – The ability for users to build relational collections and add personal commentary through the archive makes tacit knowledge more tangible and allows for a rich layer of discourse.

This porosity would not have been possible without the team also designing means for designing with the circus community at the heart of the archive. For a team of designers the possibilities for rethinking the nature of an archive and the possibilities for new kinds of performance within it, is in many ways theoretical. For the performers and the company whose history and creative practice is at the heart of the substance of the archive it is personal and collective – my/our performance and our history. Having adopted a co-design approach to the project, the team have worked closely with members of Circus Oz community in designing an archive that has integrity for them, and which enables them to consider and explore new notions of performance from their perspective.

Doing this has involved undertaking numerous workshops at small scale, ongoing project meetings on a regular basis, and then three full-scale workshops with the broader Circus Oz community (Vaughan 2011). In each of these events the research team have experimented with designing experiences that both enable dissemination of project ideas and developments, whilst also being inclusive and participatory where the various members of the community have been able to contribute to the design in a manner that has relevance to them – be it technological, cultural or personal histories and identity.

## CONCLUSION

It has been through this collaborative design approach that the research team have sought to transform a once storage bound video library into a dynamic resource that

is in a constant state of evolution and adaptability depending on the intention of each user. We have also aimed to create an archive that is a creative environment of knowledge creation and exchange, that is integrated into the greater life of the organisation on a day-to-day basis, beyond the limitations of place and time.

The term 'living archive' has been adopted as a means to articulate the dynamic nature of the archive. This is an archive that will always be evolving not only because of the on going collection of content, but more importantly because of the performance of the archive users will themselves become part of the archive collection. To experience this 'living archive' please venture to: <http://archive.circusoz.com>.

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