Making the Archive and Archiving the Making: insights and outcomes from a major research project

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This paper seeks to address some of the problems faced by those archiving an area of musical practice – electroacoustic music and the sonic arts – which is, by definition, involved with technologies which change and develop, and which unsurprisingly is itself in a state of flux and transformation. Drawing on the experience gained from two linked research projects – one looking at the development of the practice, the other seeking to archive it – it is suggested that the two apparently disparate areas of activity can be fruitfully regarded as overlapping in many respects. Both activities involve selection and aesthetic judgement, both strive for an elusive 'completeness' while acknowledging its impossibility, and at a technical level the strategies now emerging for searching and collating information from 'separate' archives look increasingly like the strategies used in some areas of 'real-time' composition and performance practice. It is argued that archivists of material from such a disparate and rapidly developing practice, rather than aiming for spurious 'coverage' of the field, should acknowledge and celebrate their difference from each other, while conforming to simple principles which will allow their archived content to be searched and collated dynamically by individual users, each querying and configuring the material optimally for their own purposes.

1. INTRODUCTION

The instinct to archive and the instinct to make are frequently in an awkward oppositional relationship. This conflict is evident at an individual level in the practice of many artists, irrespective of medium, and becomes particularly so in signifying practices where the technologies of making and the technologies of archiving are similar or identical. Electroacoustic music, the sonic arts, and the still broader fields of 'electronic arts' and 'digital practice' provide particularly fruitful instances of the collision of these two seemingly divergent demands. It is argued that practitioners who are conversant with the technological contiguities which exist between archiving and making, and who are able to operate freely across both activities, are in a privileged and beneficial position with regard to designing solutions for archiving creative practice which are sufficiently supple and extensible that they address the inherently shifting and unpredictable nature of the practices they seek to record.

This paper will present an instance of an intimate relationship between the two areas with the intention of provoking discussion and potentially providing intriguing models of good practice. It will look at the processes and outcome of a three-year research project, supported by the UK's Arts and Humanities Research Board, in which archiving and research in cutting-edge practice were intimately related through the integration of two strands – SARA (the Sonic Arts Research Archive) and ARiADA (Applied Research in the Aesthetics of the Digital Arts).[1] It will look candidly at the successes and failures of the project, and suggest models for extensions of such an integrated approach, some of them since explored in further research at the author's home institution.[2] For the sake of clarity I should establish here that my sense of an archive is an inclusive one, incorporating notions of database and repository, and both virtual and physical collections of objects and materials.

Perhaps the most productive approach might be to consider some of the questions which a research project involving archiving of digital materials might be expected to address. There is nothing immediately very surprising about these – they are the same issues which arise whenever the subject of archiving is discussed. If there is any value in the particular responses to these questions, it might lie in the extent to which these were informed by the active involvement of current practitioners whose work resists the categorisations which make for easy archiving. The questions are:

- What should be archived?
- Who should choose what is archived?
- How should the material of the archive be organised?
- Who should have access to archived material?
- What particular features of current speculative practice need to be addressed to allow the archive's survival?

[1] http://www.ariada.uea.ac.uk/ and http://www.sara.uea.ac.uk/
[2] EPSRC-funded project: 'Interactivity, ubiquitous technology and musical performance', http://www.studios.uea.ac.uk/research/interactivity

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2. WHAT SHOULD BE ARCHIVED?

The SARA project was initially conceived with local limits. UEA's School of Music hosts one of the earliest and most productive UK university-based electroacoustic music studios, and through its links with other institutions in the UK and abroad has built up over thirty years a considerable collection of material, predominantly in the form of open-reel and DAT tapes and CDs, but also including vinyl LPs, video tape, DVDs, paper materials, books, scores, software and hardware. The initial intention was simply to produce a database which co-ordinated all of these objects, with digitised versions of all those for which this was practical, and for which appropriate copyright clearance could be obtained, to be made available online for academic use. The establishment of SARA coincided with the culmination of a bid by Sonic Arts Network for the funding of a National Studio – a project which was to incorporate a substantial archiving element. A 'partnership' arrangement was developed with SAN when it became clear that their bid for a National Studio was not going to be successful. Initially it was hoped that SARA would archive online the entire back catalogue of SAN and EMAS[3] publication (of text and images) – copyrights permitting, in addition to the bulk of their informal collection of recordings, but it rapidly became clear that this was not practical, and that some sort of criteria for selection would need to be developed. The explicit acknowledgement that such criteria might be developed locally for different local collections links it to the issue of who is responsible for selection, and is dealt with further below.

Additional concerns regarding what is archived relate to the speculative and unstable nature of the practice being archived, and revolve around what aspects of practice are regarded as significant or admissible. The ARiADA research context within which SARA developed clearly established that it was not sufficient merely to archive sound, text and image, and that in many instances the code written by a composer might be the consistently identifiable element of a performance, effectively constituting a 'score', or at least establishing a continuity of identity for a particular set of manifestations of musical activity. And projects such as Jonathan Impett's Metatrumpet (Impett 1994), with its emphasis on the supplementary information about musicianliness which is generated by any performance and can be retrieved and utilised through appropriately placed sensors, strongly suggested that recording the gestural information involved in performance and/or diffusion might be valuable (see below). This in turn suggests that participant observation of the practice and of the interaction between practitioners might be valuable data; indeed studies such as Monson (Monson 1996) provide models for this crucially underconsidered aspect of musical behaviour. Finally, much of the most useful and significant information is not encoded (as such) at all but is, rather, embodied in the experiences and memories and activities of participants and practitioners. The collection of narrative accounts, interviews and other personal materials is also sadly wanting, and particularly easily overlooked in technologised environments.

[3]The Electroacoustic Music Association of Great Britain – Sonic Arts Network's predecessor, founded in 1979.

3. WHO SHOULD CHOOSE WHAT IS ARCHIVED?

In its original conception, the problem of content-selection for SARA simply did not occur. Once the local aim of the archive had been extended to include material from SAN, criteria for selection had to be developed, and a degree of transparency became urgent. Rather than codifying shared criteria for two very divergent types of collection, it was decided that the distributed nature of the collections should be reflected in the decision making. Accordingly, various individuals from SAN began to select from their archive, and two other strategies were agreed on to formalise the 'distribution' of content selection: a series of 'special projects' making available in-depth material on specific areas of electroacoustic music and its associated activity – thus widening the scope of the project even beyond UEA and SAN; and guest 'curatorships' of the SARA site in which visiting composers and other artists brought or suggested content for the site.

Archiving is done by people – individuals who, however well documented and well formed the project they are involved in, will bring to it their own priorities and oversights. Their motivations for involvement may be aesthetic, technological, or more pragmatically career based. As it is in the nature of archiving projects that funding is neither continuous nor inevitable, keeping interested and able participants in the team is difficult. Talented Research Associates will ultimately leave for more attractive careers enabling higher degrees of creative autonomy or academic promise. The archive can benefit from the encouragement of personal engagements and preferences, sustaining and prolonging each individual's commitment to the project. The partiality which results from allowing individuals autonomy to set priorities has two initial effects on the archive content – it leads to an increase in the 'depth' of material at key points,[4] and it incorporates specific

[4]In the case of SARA this led to one researcher, Dr Martin Dixon, developing a strong relationship with the privately held archive of Tim Souster's work, and the representation of much of this material in the public domain for the first time.

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expertise which may otherwise have been overlooked.[5] In the case of SARA, the distribution of responsibility for determining content which emerged as part of the organisation of its participants, was later formalised in the introduction of visiting curatorships. SARA's host organisation, the School of Music at the University of East Anglia, also hosts the longest continuously running series of electroacoustic music concerts in the UK, a weekly composition seminar, and frequent workshops and residencies. The integration of the SARA and ARiADA projects with these activities allowed visiting artists, composers and performers to become involved in determining content, identifying areas of weakness or under-representation, and donating of materials.[6]

4. HOW SHOULD THE MATERIAL OF THE ARCHIVE BE ORGANISED? WHO SHOULD HAVE ACCESS TO ARCHIVED MATERIAL?

The organisation of the archive is sufficiently bound up with questions of copyright and ownership that the two can, at the simplest level, be considered together. Early in SARA's development a four-tier conceptual system was devised which linked these issues:

- *Level One*. Searchable database – cost-free online access for all.
- *Level Two*. Digitised material which has been copyright cleared by the host site for academic use, and which is accessible cost-free subject to users registering online their agreement to conform to such use (pop-up window).
- *Level Three*. Physical material or uncleared digital material accessible on-site only by individual application (including legitimate copies of material in Level Four).
- *Level Four*. Physical materials too valuable or restricted for public access.

All data items/objects in the archive are referenced in Level One, and for a user there is no significant experiential separation between Levels One and Two. The structure reflects the inverse relationship between accessibility and copyright control issues. There is also an implicit 'portability' in which Levels One and Two occupy virtual space while Levels Three and Four are site specific. The 'upper' levels may thus in principle reference numerous 'lower'-level physical sites which may be widely geographically dispersed.

[5]A case in point is researcher Matt Rogalsky's knowledge of sound installation work, which led to the invitation of guest curators with additional expertise in this area. It is important to realise that 'content' is often embodied in individuals and their experiences, rather than in existing documents.

[6]Among the many contributors over the three funded years of SARA were Hugh Davies, Nic Collins, Justin Bennett, Ron Kuivila, Adrian Moore, Walter Fabeck, Clive Walley, and Brandon Labelle.

At this point other serious questions arise: What delivery technologies might best be used? What design principles might inform a 'well-organised' archive? How might choices of delivery technology affect the sustainability, extensibility and searchability of the archive?

Perhaps surprisingly, before considering the potentially contentious areas of delivery technologies and design principles, I'd like to consider the effect of funding, as this materially affects the aspirations and determines some of the limits for archiving in a manner which can contribute to the conceptualising of its design and organisation.

Funding will almost inevitably be discontinuous, project based, and antithetical to notions of 'completeness', but this can be made a virtue by planning for the partiality it implies. The partial contribution of each archive can be acknowledged by distributing the 'meta-task' of archiving between multiple participants with differing briefs, differing interests and, in local terms, different archives. This allows for sustainability through distributed 'flickering' contributions to an 'organism' which is not controlled by any one individual or institution. The task of an individual archive maker therefore becomes to optimise the possibility for its 'relationship' with other small archives. The extent to which new search and dynamic delivery technologies, in combination with various types of metadata, afford the possibility of a 'meta-archive', is discussed further below.

What is suggested here is that any realistic solution to archiving a diffuse and widely dispersed practice should itself be diffuse and dispersed, but that adherence to a minimum of principles of design and organisation might significantly enhance the usefulness and longevity of such archives. This needs to be reflected in the choice of delivery technologies. Anything which is platform specific will tend to operate against these principles, and similarly, commercial software solutions are too short lived or too expensive and arduous to maintain for serious consideration. Low or no-cost software, ideally to open-source standards, allows the resolution of such problems, while the distributed nature of support for open source is a strength – online expertise is always freely available at short notice.

As we increasingly make use of the dynamic (i.e. real-time) functions of computers (and we do in our music, so why not elsewhere), we may also have to learn to separate out layers of activity such that we afford computers the possibility of building for us dynamic 'meta-archives' which access all relevant archives simultaneously. The essential principle here is to keep the data layer, the schema layer (the set of relationships particular to an archive) and the presentation layer (how this is made visible on screen) separate. This allows 'crude' search tools to import and order material from

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the data layer, more 'refined' tools[7] to compare and make informed mappings of different schemas which contain that data, and will allow our browsers to present that data dynamically in the manner most appropriate to what is found. What we lose from this, at least currently, is the specificity of a particular 'look', but we gain immensely in searchability and sustainability of data. Should a particular site fail to be maintained, its data layer can simply be incorporated in another appropriate host site, removing the need for repeated data input. This tripartite separation also recognises that many aspects of our taxonomies are historically and culturally quite specific, and by virtue of this second ('schematic') layer being distinct, it allows for differing representations and interpretations of the same data.

An additional feature, long planned but as yet unimplemented in SARA, which would genuinely contribute to the currency and longevity of the data on the site, would allow users (as the most interested parties) to update their own records, providing they are registered to do so.

5. WHAT PARTICULAR FEATURES OF CURRENT SPECULATIVE PRACTICE NEED TO BE ADDRESSED TO ALLOW THE ARCHIVE'S SURVIVAL?

This question – crucial to a practitioner – allows also a fruitful revisiting of many of the other questions and issues arising above. My approach as director of the SARA project and its progeny has had to be pragmatically driven by the social and economic reality of our situation – with what we actually do and how it gets funded – rather than assuming the availability of ever more resilient technologies at ever reducing cost, or assuming an ever compliant supply of people interested in data input who also happen to be sensitive to the vagaries of a hugely aesthetically varied field of activity. Let's start with that last point – people. In theory, archives are best made by archivists, who have a dispassionate relationship with their data and a methodologically correct approach to its organisation. In reality, of course, the people who are most interested in ensuring that aspects of their practice are stored for prosperity or otherwise distributed are the practitioners themselves, and they bring passion and partiality into the equation, in addition (crucially) to being able to add value to the data. For an archivist, such partiality (preference/bias) may be unforgivable, as is a second type of partiality (incompleteness) which often accompanies it. Few composers – even when given the opportunity – are consistently going to privilege maintaining the currency of information in a database over the practice of composing.

[7]Emerging data mining/semantic search tools.

What composers do have is an instinct as to how to use technology 'against-the-grain' – in ways perhaps not conceived by its designers. Unfortunately, many archive systems work within paradigms of practice and specialism informed by the twentieth or even nineteenth century, assuming the self-containedness of the 'work' created by a single individual, despite all the evidence around us that much of the reality of practice is contingent and collaborative, that much of a work's manifestation is dependent upon how it is delivered (context, not content), that knowledge is diffuse, multi-centred. And our sense of our own worth as composers is informed by an old musicology which reifies the notion of the individual production of discrete objects, particularly of text objects (as a result of which many of us have reluctantly started to produce scores) and which is less able to deal with slippery notions of music as practice – of people doing things, of actions, of behaviours – which as a result are far more endangered than the objects we all start by archiving.

Our technology is also shared with practitioners from other disciplines, other habit-traditions, who bring with them unfamiliar notions of 'post-medium' activity and 'digital practice', aesthetic tendencies which draw upon entirely or considerably different sets of concerns – some of them are nearer to us and easier to comprehend (Sound Art from the art school tradition, Acoustic Ecology with its legs in the environment, ethics and community politics).

This is important because if we're going to archive something as prosaic as (say) electroacoustic music or sonic art, we have to agree what it is. Whether it's determined by (say) an aesthetic approach (spectro-morphology), or lineage (who taught who where), or delivery (through loudspeakers), or by its technical 'support' (tape, CD, etc.) or by its characteristic approach to technologies of making, or to modes of listening (*ecoute reduite*). And immediately we realise we'll never agree – We have too many axes to grind, too much invested in our own histories to fully allow someone else's definition.

And if we're good composers we probably also have an idea that what we're about is more than organising sound. We're speculating about the world – big ideas – and we already have a sense that our world is contiguous with a huge number of other areas of practice, some of which we may even embrace in our own work.

Perhaps some solutions or resolutions lie in the nature and function of the technologies we are using. Because of the technologies we use as composers we are already effectively archivists as well as makers. We store multiple versions, incomplete alternatives, complex families of material with interrelationships which are remarkably similar to those of procreation and mutation. We store vast amounts of material, with a variety of mechanisms for understanding, containing, and navigating it. In making a work we create a vast trail

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of activity which in some way encapsulates all (or many of) the important decisions which led to the final result.

An archive is in this respect no different from a composition. Far from being a benign, neutral, ordered space it is a manifestation of the activity which led to its formation, and which sustains it. It incorporates preferences, misunderstandings, misreadings, changes of direction.

If this is true, then perhaps we should move more consciously towards an acknowledgement of such *overlaps*. As an example of simple compositional and archive functions overlapping, the notion of the sound font might be instructive. Several of my research students work with complex and in some cases evolving algorithmic structures which align themselves with particular sounds in local sound font databases, then evaluate the result, deciding, perhaps, that a particular combination is too boring, or another fit for a particular section of musical activity. Increasingly such algorithms now look outside their local databases, scanning the Web for appropriate material to incorporate dynamically into the performance in question. Currently emerging metadata standards, such as MPEG7 (Martinez 2004) – which, among other things, describes the spectral content of a sound over time – make this an increasingly fruitful pursuit.

Perhaps here – in simple form – is a model for how the various sonic art or electroacoustic music archives which exist may become related in the future. Increasingly our access to Web-based material makes use of complex search techniques which incorporate mechanisms for evaluation, either through use of metadata, or through analysis of traces of previous related searches. Notions of a 'semantic web' or of 'data mining' depend on these dynamic functions becoming quicker and more reliable. Their importance for us is that our current 'problem' of archives conceived as individual, self-contained entities hosted at different physical sites by different individuals or institutions with different approaches can be fruitfully reconceived as a distributed community of activity, with the advantage that the local or particular knowledge (and idiosyncratic approach) of each node becomes a strength rather than a weakness. The partiality (in both senses) of each local site becomes its guarantee of attention – and trustworthiness – these both being qualities which are difficult to legislate for in distributed and networked activity.

I suggested earlier that some aspects of composing and archiving already overlap – that there are useful contiguities between how we organise and access material within the timeframe of an artwork, and within the framework of an archive. Indeed sampling technologies have drawn our attention to the intertextuality (that process by which we construct the meaning of a 'text' with reference to other 'texts') of our experience in a peculiarly immediate and palpable way. But beyond the fuzzy boundaries of the extended notion of 'text', which already present us with conceptual challenges when archiving, there are areas of practice which force us to confront more fundamental questions about what we are archiving.

A recent EPSRC-funded project in UEA's School of Music, alluded to earlier, brings some of these into focus. 'Interactivity, ubiquitous technology and musical performance' investigates precisely those areas of activity which usually go unnoticed in performances of music in highly technologised environments, documenting rehearsals on video, involving observers in detailed ethno-methodologically informed note-taking of those details of communication and organisation which are essential to negotiating multi-participant performance. Jonathan Impett, the director of this particular research project, is the developer of the metatrumpet referred to earlier. This an ordinary acoustic trumpet attached to twenty-seven different sensors, all of which stream data about the 'how' of performing on a micro-temporal level, this usually being used to algorithmically and spectrally expand the trumpet's sonic environment. But of course it also presents a unique data record of the activities and adjustments of a professional trumpeter in real time, enabling levels of analysis and interpretation of the practice which have not hitherto been possible. Coincidentally, some of the performance events analysed by the project are in themselves pushing at boundaries between archiving and practice. As concerts are increasingly webcast, simultaneous broadcast and streaming to archive become a possibility, and aesthetic questions about how something will be represented as archived content begin to exert a direct influence on performance decisions. This is the stage at which what was initially conceived as an archive with a conventional secondary delivery function begins to be rethought as a primary mode of delivery – as a necessary extension of performance in a networked environment. It is a point at which making an archive and the archiving of making become genuinely indistinguishable.

REFERENCES

Impett, J. 1994. A meta-trumpet(-er). In *Proc. of the 1994 Int. Computer Music Conf*. San Francisco: ICMA.

Martinez, J. M. (ed.), 2004. MPEG-7 Overview. http://www.chiariglione.org/mpeg/standards/mpeg-7/mpeg-7.htm

Monson, I. 1996. *Saying Something: Jazz Improvisation and Interaction*. Chicago: University of Chicago Press.