

ENCOUNTERS: SUBDISCIPLINARY DYNAMICS IN AUSTRALIAN MUSIC-MAKING AND RECORDING

Paul Draper
Queensland Conservatorium
Griffith University, AUSTRALIA
p.draper@griffith.edu.au

Abstract: This paper examines the dynamics that music subdisciplines bring to record production and seeks to clarify meaning for the recordings as virtual constructs of subdisciplinary encounters. This is detailed in a three stage investigation and subsequently argues for a collaborative approach to achieving increased understanding of the simultaneous action of several levels of musical reality, towards a trans-subdisciplinary ecology of music-making.

PERCEPTION AND AUTHENTICITY

All in this hall are experiencing the same event. Yet each is hearing it and seeing it from a slightly different angle, through a different screen of memory and desire. If the music is a palace or cathedral in time, it is also a gem of two thousand facets, one for each mind in the hall. Each mind sees its own reflection, dreams its own dream . . . if . . . music is a cosmos, then contained in this room are two thousand parallel worlds. (Eisenberg, 2005; p. 237).

How do musicians publish? When I ask this question of industry colleagues or the non-specialised public, the answer most often repeated is ‘why, through records!’ In the digital age, music publishing is mostly understood in terms of the recording industry, supported by radio, concerts, television and Internet. However, audience perceptions tend to remain focussed on the performer(s) and/or repertoire; while music may be conceived of as a single discipline (albeit, comprising varied genres), this industry is in fact, highly interdisciplinary and commercial success usually requires a team of specialists collaborating to produce coherent products. The record producer may often be charged with the coordination of a large range of commercial and artistic imperatives in order to create and deliver sound recordings which satisfy all of the stakeholders. Thus, the record is often a virtual construction of a musical reality and herein lies the skill of the producer as manager, artist, technologist, visionary and ‘cat herder’.

How do academics publish? In the Australian university sector, ‘publication’ is often synonymous with ‘research’ and this is quantified through the measurement of outputs including books, journal articles, conference presentations and competitive grant successes. University funding and academic status flows accordingly and this presents challenges for faculty musicians to justify their work in terms of narrow definitions of research and priority areas for national granting schemes (ARC, 2004). In music schools we continue to wrestle with the notion of ‘artistic practice as research’, particularly in the light of the recent Research Quality Framework (RQF) Issues Paper (DEST, 2005) where yet more rigorous measurement and accountability structures are set to be deployed similarly to that of the UK’s Research Assessment Exercise (RAE).

Hence in both public and academic arenas there is a disconnect between external perceptions and internal authenticity in music-making. This ‘gap’ is worth exploring further because of the role that recordings now play as significant commercial and cultural artefacts and as representations of new knowledge. If indeed these works are virtual constructions and collaborative recreations – ie, neither representative of the music superstar nor the hero-science researcher – then what are they exactly, and how might such artefacts be better conceived, produced, leveraged and understood?

A Creative Ecology

Queensland Conservatorium Griffith University (QCGU) hosts some 200 concerts per year with many of these recorded and produced by staff and students. Alongside these concerts there are a range of film, popular music, jazz and electroacoustic undertakings that are continually in various states of evolution. Because university systems compartmentalise and segment these teaching and research specialisations, this helps to highlight the fact that creative projects may have multiple authors working as teams but who sometimes achieve successful results *despite each other* (Gillett, 1977) – all of which may trend to ‘throwing mud and see what sticks’. Even with best intentions, excellent concepts can sink without a trace – and to the contrary – despite mayhem, some brilliant gems emerge and prosper.

This unique ecology may serve as a useful lens through which to focus on aspects of musical practice while informing debate and organisational learning at a local level. This paper will therefore examine a particular recording project series recently undertaken at QCGU, aiming to identify and better understand:

- 1) perceived authenticity *vs.* the virtually constructed nature of music CDs;
- 2) the notion of musical ‘subdisciplines’ and their impacts on sound recordings;
- 3) imperatives and drivers for music-making in the Australian university sector;
- 4) how these factors might be harnessed and streamlined into producing cohesive outputs of greater quality, impact and accessibility.

THE PROJECT IN OVERVIEW

... musica practica; the everyday practice of music, as opposed to the theory; music by ear rather than music by the book; the practice through which it lives and breaths, transmitted from generation to generation, and which every generation modifies according to its own needs (Chanan, 1995; p. 13).

Encounters: Meetings in Australian Music was an Australian symposium devised by the Queensland Conservatorium Research Centre (QCRC, 2005) to explore two centuries of contact between European and indigenous Australian musical cultures. Hosted in April 2005, the symposium represented an extensive investigation of this music in both performance and academic discussion – in a single week, some 80 compositions were performed by around 200 students, staff and visitors in a series of concerts. The project was highly ambitious in that in a short timeframe it aimed to deliver a range of outcomes to audiences and peer groups through concerts, film screenings, lectures and publications (including texts, music CDs, DVD and radio broadcast).

As Head of the Music Technology area I was approached by the QCRC and asked to record a series of concerts in order to profile some of the central works. With a two week lead time, I discussed the project with students and it was agreed to tackle this as a cohesive whole to facilitate generic skills development (Griffith University, 2004) through team work and project management of the recording process. We subsequently committed to nine concerts over a four day period, with flow-on planning for media archival, sound production, and delivery of evaluation music CDs to the QCRC.

Subdisciplinarity

To do so, this required our interaction with the collective application of various QCGU departments and provided the opportunity to reflect on the drivers and approaches brought to the project by these groups, or what I’ll term herein as music *subdisciplines*, ie, composers and performers, researchers and musicologists, concert promoters and stage managers, music technologists and educators. *Encounters* offered up the workings of the

Conservatorium's music-making microcosm in action, could reveal more about how music technologists might better interact with this community and conversely, indicate what impediments there might be for us in producing quality recordings.

Indeed, such impediments as highlighted by this project's compactness and large number of participants illustrate the extreme 'virtual' nature of the recorded interpretations – without collective input or understanding as to aesthetics and intended outcomes, decisions regarding technical set-up through to final album production are left exclusively in the hands of student and staff record producers. The implications may be somewhat obvious for music technologists but I suspect, much less so for colleagues in other subdisciplines who may assume these recordings as meant to represent their own realities and fitness for purpose(s), eg: live concert production and CD commercialisation, musicological analysis and research publication, educational evaluation of performance and musical interpretation, technical sound production values.

In what follows, this ambiguity is examined via an action research methodology modelled upon earlier work (Draper, 2000) which was designed to examine the 'messiness' inherent in collaborative undertakings in music technology. In this case however, I did want to be more explicit about factors external to the recording discipline that might effect the overall process and media outcomes. Therefore, through narrative I will identify and map this methodology to three phases of the record production cycle, and where these models diverge, unpack more about subdisciplinary knowledge 'gaps' via a summary of recording team surveys, staff feedback and personal observation.

1. PRE-PRODUCTION

Any medium of sound reproduction is an apparatus, a network – a whole set of relations, practices, people and technologies . . . embedded in networks that are simultaneously social and technological (Sterne, 2003; p. 225).

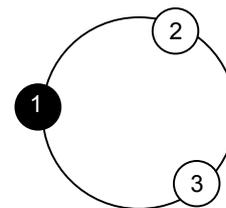
The *Encounters* program was coordinated by a QCRC project manager and the initial recording brief was inferred from two documents: a timetable of events and a broad publicity document (Plush, 2005) outlining symposium aims and biographies of the leading artists. We married this information with what was already known: i) events were to be recorded in three theatres where we were aware of acoustics, AV patching and access considerations; ii) 23 student volunteers were arranged into small recording teams to be supervised as part of multi-year teaching activities; and iii) the QCGU Intranet was to be used to evolve and disseminate the profile of the project.

We continued to receive more detailed information about the performers, composers and interesting instrumentation that would be used. However, these were simply lists which often did not provide any clue as to stage positioning, concert running order or music production contexts. It emerged that *Encounters* was to be a highly improvised and complex operation due to the sheer number of performances and the ongoing negotiations re. various interpersonal/cultural sensitivities. Four of the nine concerts were to be multi-ensemble events where we would be treated to a continually changing array of artists and instruments and where any final concert shape was in a constant state of flux.

To plan for post-production, we wanted to know more about envisioned outcomes and so approached other subdisciplinary managers. Again, this proved to be a developing feast of sometimes rumour, sometimes fact. We did glean that: QCRC intended to produce a booklet as a research publication, perhaps accompanied by selected performances on CD(s); one of the orchestral concerts was to be radio broadcast by the ABC (Australian Broadcasting Corporation) and that the music technology area might interface with this as part of the production team or, in a student work experience opportunity; that some events were to be filmed and therefore there was the tacit expectation that sound recordings could be post-produced for DVD(s) for yet-to-be identified purposes.

Review, Plan, Clarify

Figure 1: Action research cycle, phase 1. A *reflexive phase* examines participants' preconceptions and allows this evidence to inform a growing complexity of thought about the issues and the nature of the problems under scrutiny. The imperatives driving the project are further clarified to expose preliminary positions for context, new knowledge and theory building.



Almost as a by-product, the information-seeking and planning in music technology led us to become more informed about the identities and immediate interrelationships of the project participants or music subdisciplines. These included: the composers and performers who devised the unusual and challenging repertoire to be performed during *Encounters*; QCGU arts administrators who marketed and hosted the concert events; the stage managers and technicians who were charged with delivering the event to the public; the educators who taught and rehearsed across the project; and finally, the QCRC academic researchers and musicologists who conceptualised and drove the overall shape of the program theme as identified by its curator, Vincent Plush (2005):

Encounters is the first extensive investigation of a single issue in Australian music to be explored at the Conservatorium in both performance and *academic discussion*. Quite deliberately, it has no political agenda, but rather adopts a *position of neutrality*, passing no editorial comment on the political correctness nor the *viability of the issues* raised in the music to be performed. After two hundred years, the music is there, ready and available for *fresh assessment*. For better or worse, there is a very considerable amount of it, much of it unknown to us today. *Renewing our acquaintance with it now*, we can move on. (para. 16) [italics, mine]

Mind the Gap (Part 1)

We were not enlightened further about these comments because the information flow was largely one-way, as an extension of staging and concert planning – the single acknowledgement of the recording process was provided through the brief technical note, ‘PowerPoint operated by Leah, filmed by Kai, recorded by mutek’. Were the recordings of the performances intended to inform the discussion? What was meant by ‘viability of the issues’ and ‘fresh assessment’ – for/by whom, in what context, in real-time or at a later date? Reflexivity was harnessed well in the music technology area and likely, within other subdisciplines because each group did appear strongly committed. However, we had no sense of the ‘big picture’, a *trans-subdisciplinarity*, if you will. While the overall imperatives for this project were never clarified, the concert recording specification was:

- Where possible, many concerts were to be recorded with a primary Mid-Side (M-S) pair microphone array located at the same height and distance from the stage. This aimed to provide some consistency, assuming the necessity for a compilation CD set.
- Shotgun microphones were mounted on modified stands with operators to be positioned in front row seating in an attempt to better improvise in concert situations where we might be unprepared for instrumentation, stage location or repertoire.
- Digital audio recording formats were standardised at 48Khz/24bit BWF compliant .wav files to suit native DVD output and in an attempt to maximize quality and efficiency in later mixing, compilation and audio CD mastering.
- Explicit documentation templates and backup schema were put in place to cater for multiple recording teams, co-use of core facilities and a projected 250GB of AV storage requirements.

2. PRODUCTION

Whether perfect, pluperfect, or imperfect, any recording is a distortion of reality, just as a newsreel is a distortion of a news event. (Read & Welch, 1976; p. 239).

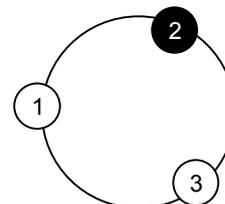
We began recording without the benefit of rehearsal calls, but it quickly became apparent that what we began to engage with was ranked differently to what might be inferred from a simple timetable of events. There were more subtle concert categories driven by subdisciplinary personalities, internal pecking orders and diverging aims:

- 1) *New Horizons*, organised as four, one hour lunchtime concert performances by a large range of student ensembles, all set with our smallest Recital Hall.
- 2) *Orchestral Encounters*, two performances of large scale orchestral works with choir and didgeridoos featuring the work of renowned Australian composer, Peter Sculthorpe, performed in the best of our acoustic spaces – the AU\$25m. state-of-the-art variable acoustic theatre, the QCGU Concert Hall.
- 3) Three special events comprising *A Meeting in Voices* featuring choral arrangements for the well-known Australian ensemble, the Australian Voices; the *William Barton Showcase* featuring the acclaimed didgeridoo instrumentalist and composer (both performed in the Recital Hall). The third event was a complex, large cast music theatre piece entitled *The Jindyworobak Review*, arranged and directed by the *Encounters* curator, Vincent Plush and performed in the Orchestral Hall.

The term *Encounters* took on new meaning as subcultures began to interact and variously clash, negotiate or compromise.

Lights, Mics, Action

Figure 2: Action research cycle, phase 2. An *empirical phase* is based on observation and experiment and where participants are positioned as subjects. It focuses on collaborative constructions of knowledge and presents understandings, presentation of elaborations and artefacts for scrutiny.



Mind the Gap (Part 2)

New Horizons – Student Concert Series: The first encounter was with stage crew and events production managers. From their perspective, concert preparation took priority and microphones were regarded as a ‘necessary evil’ that should fit in, somewhere hidden, to be located at the last minute (considerable survey feedback was dedicated to this single topic). This resulted in record producer angst about quality control which might not be delivered without due consideration for microphone placement and sound-check. The musicians themselves were particularly preoccupied with their impending performances, (we assume) given the distinctive Australian repertoire; they too had their own pressing issues about rehearsal, lead time and stagecraft. In every case that we were approached by performers, it was to ask if indeed, they were being recorded and how they might later obtain a copy. Clearly, few musicians had prior knowledge about intended recording outcomes or due process, but all were keen to review their performances.

In the music technology teams the inexperience of younger assistants in confronting situations tended to create confusion and slow things down. At the suggestion of students themselves, the team composition was modified to include a ‘snowball’ effect, ie, two assistants would be present in each concert, one of whom would work in the following concert to buddy with each new assistant as they cycled into the process. Each concert recording brief evolved and became better prepared through tacit ‘shopfloor’ knowledge as teams passed tips forward in this way.

Despite the brief to locate the M-S pair microphones in the same location for each concert – ie, high above the stage but within the sound shell – musicians and instruments would be poorly located, and invariably, too far forward on the stage. When music technology staff were present, negotiations went smoothly; when student producers tried to engage, they were invariably relegated to ‘road-crew’ status. As the concert series progressed and communication proved unreliable, a black line of Duct tape was run across the stage to indicate the point behind which we would prefer the musicians to perform. From that point on all musicians simply herded themselves behind the ‘magic line’!

Orchestral Encounters Concert Series: It eventuated that these concerts were those to be recorded by the ABC for national radio broadcast. Any chance of interaction with us was quashed by a quick, late snub that this was not possible due to ‘union rules’. The QCGU Concert Hall is a difficult-to-rig, but highly desirable acoustic space to record in – an excellent driver for engagement. Given the imperative that we were still to record for QCGU/QCRC purposes, we persevered in adjusting our plan for a separate recording rig in and around the ABC presence.

This required much patience and waiting for when the ABC was not using the space and further, restricted our use of audio ties and microphone placement (again, very vocal survey feedback from honours students here). Via remote TV, we observed and discussed the ABC’s positioning of many expensive Schoeps and Neumann microphones; we continued to adjust and become pleased with the sound from our three pairs of microphones now strategically located in the venue. Finally, we did manage to obtain stereo ABC broadcast feeds and this proved invaluable in terms of comparing our live sound to theirs – we noted the powerful mono centre in their sound production which had apparently been incorporated from the pair of Schoeps omni microphones used stage centre. This approach would be later incorporated into our own post-production.

Special Events Concert Series: *A Meeting in Voices* was a beautiful concert and comparatively easy to record given the reliance on a large vocal ensemble and the suitability of the MS pair microphone configuration and placement. Additionally, the conductor was most accommodating with the recording set-up and even allowed the microphone placement to be forward of his own stage location. The wild card was the ever-moving, dynamic soloist who produced startling and unexpected vocal effects throughout the show. Handheld shotgun microphones largely coped with this, but overall levels varied dramatically and we noted that this concert would likely require significant attention to fader automation and/or dynamics control in post-production.

The William Barton Showcase featured the didgeridoo leading new compositions in a number of ensemble settings, including string, wind, string and brass quartets. The staging changed dramatically from piece to piece and although spot microphones were relocated as quickly as possible, we continued to rely upon improvised handheld shotgun technique. Some consistency was provided by the high M-S pairs together with an Electrovoice RE20 microphone positioned close to the didgeridoo bell, but still, all of this would require considerable aesthetic judgement in producing the timbre of sound and instrumental balance for the final CD product.

We planned and prepared as well as possible for *The Jindyworobak Review*, but for all best intentions, the piece was just too complex. The concert was being filmed and the presence of two DV cameras further complicated the technical process, because like us, the camera operator was improvising without the benefit of adequate rehearsal or program knowledge. Air-conditioning noise was appalling; for artistic effect, the cast performed at the ‘wrong end’ of this room on the floor and this meant poor acoustics and standing waves. Many microphones were guesswork-positioned and so off-axis coloration and phase issues became significant. Clearly this recording would need detailed surgery later, a case for ‘fix it in the mix’, if we ever saw one.

3. POST-PRODUCTION

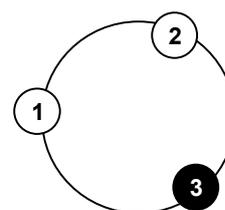
Postmodernism tends to deny the priority of text over performance, elevating the ‘secondary arts’ – opera production compared to composition, for instance. But recording clearly remains a secondary art where it is subservient to a text and to a performance-interpretation. Where there is no original performance, or work . . . the *auteur* freely manipulates what the performers produce, the phonographic art is no longer secondary. (Hamilton, 2003; p. 362).

Following the weekend of the last concert, it was clear that planning and team-work had paid off – all of the concerts had been captured in their entirety, gigabytes of raw multi-track data uploaded, were well documented and backed-up on server drives. We were relieved that we had got this far without major technical incident and so began to plan studio time for the enormous post-production process that lay ahead: to edit, mix, produce and deliver some 11 hours of music as 10 music CDs and two DVDs. Given parallel teaching, learning and project commitments, we allowed for another month to realise evaluation mixes that would be circulated for review and discussion, eg: which tracks might provide best performance outcomes, sonic values and aesthetic relevance that could be then re-worked as research or teaching resources, marketing tools, etc.

As we began to work on the material, simultaneously, two new subdisciplinary fractures opened up along this timeline – the first, in terms of record producers attempting to produce useful outcomes and the second, in terms of musicians attempting to access the recordings. These encounters are detailed sequentially as follows.

Reflect, Interpret, Learn

Figure 3: Action research cycle, phase 3. A *reciprocal phase* documents a co-theorising process that contests and reconstructs earlier data. Collaborator's self-reflection in action is engaged to provide emerging analysis and reflexivity is further systematised in an exploration of all of the actors' viewpoints.



Mind the Gap (Part 3)

I will focus here on the events identified earlier under 'Special Events Concert Series' (p. 6) because each of these offered striking examples of where interpretation on record is halted by the break between producers and collaborators' self-reflection.

A Meeting in Voices required close automation of dynamics and some work on the overall spectral landscape to clean up the Recital Hall acoustic 'muddiness' interfering with vocal balance and sonic clarity. In general, we felt we had a very good match between predictive microphone arrangement and the nature of the repertoire. As a piece for large choir, the final effect was smooth, lush and what we imagined to be a convincing reproduction of the concert, albeit, mastered for living room playback by the limiting of dynamic range and concert hall reverberation balance. Further, the impressive concert finale attracted the attention of an honours student who subsequently employed highly creative mixing and manipulation processes whereby new and original sound sources were incorporated, processed and produced to great effect. All mixes and documentation were forwarded to core participants, but puzzlingly, to date there has been no feedback. We assume no news is good news.

The William Barton Showcase employed an array of microphones to cater for a range of ensembles who would perform with the feature didgeridoo performer and composer. The recordings were then mixed by two different producers – by the student team who were 'in concert' on the night, and by myself who had prior experience in working with this artist. When I later reviewed both CD productions, obviously there were quite different imaginations at work. The student mix was far more ambient and attempted to provide a literal recreation of the concert on the night: the M-S pair provided the main sound source

with a little reinforcement and automation here and there to focus the instruments. Overall, the mix was 'wet', the hall providing the overall colour for the performance with the feature didgeridoo placed somewhere stage right as an ambient effect meshed within the overall musical arrangements. In my own mix, the M-S pair were used sparingly to add a little reverberation while the emphasis was placed on the spot microphones, particularly the RE-20 used for the didgeridoo. This instrument was produced as dry-ish, clear, and centre-of-stage so that the drones, riffs and melodies led the musical arrangements. Both productions 'worked', both were valid interpretations of differing musical realities. Again, CDs have been circulated outside this subdisciplinary discussion, but some four months later, reciprocity is not yet in play.

The Jindyworobak Review was a music theatre piece with a large cast. It eventuated that this was to be featured as a double DVD set and that the audio mix was to be post-produced and compiled along with some two hours of edited video footage. Our raw audio was technically deficient (as identified earlier, p. 6) due to staging demands and overall timeframe. The mix became a lengthy restoration process concerned with simply cleaning up the signal while attempting to automate the actors and singer's levels to support the video cues. All said and done, we were reasonably satisfied in terms of 'before and after' and look forward to hearing more about how colleagues understand this piece viewed through the lossy lens of MP2 video codec, AC3 audio compression and the indispensable Waves *X-Noise* broadband noise reduction tool.

Mind the Gap (Part 4)

Rewind: almost immediately following the last concert, the phone and email began to run hot with requests to obtain copies of recordings. While some requests were from experienced musicians or administrators, there was little empathy for this core post-production phase of the project. In one case, I had an urgent request from a professional performer who wanted two completed concert CDs to take overseas that same week. When I relayed this to a PhD student sound producer, he laughed enormously and immediately understood the tacit 'gap' between these two perceptions of reality. Without prejudice, I carefully presented similar requests in a debriefing session to music technologists and again, was greeted with guffaws, head-shaking, sometimes disdain.

This *doxa* (Bourdieu, 1977), the self-evident, unspoken view which implied workflow, process and artistic judgement was intriguing. If this occurs in music technology, then no doubt there are parallels in other music-making areas just as was evidenced by the unspoken assumptions behind the email and telephone requests for instant CDs. If quality record production can benefit from greater subdisciplinary understanding (as the survey data pleaded), so too might all music activities be enhanced by explicit sharing of *doxa*. More importantly, just what opportunities are being lost in such disconnects between subdisciplinary perceptions and authentic practice? I will now turn to these matters in the concluding sections of this paper.

SUMMARY AND DISCUSSION

The technology of electronic forms makes it highly improbable that we will move in any direction but one of even greater intensity and complexity . . . many different levels of participation will, in fact, be merged in the final result, the individualized information concepts which define the nature of identity and authorship will become very much less imposing . . . [and] will permit a climate in which biographical data and chronological assumption can no longer be the cornerstone for judgements about arts as it relates to the environment. In fact, this whole question of individuality in the creative situation – the process through which the creative act results from, absorbs and re-forms individual opinion – will be subjected to a radical reconsideration. (Gould, 2004; p. 125).

Brian Eno (2004) speaks of the transmission loss in a classical sequence between the composer, conductor and ensemble. In the digital age this may not be the case where composer/musician/producer can work directly with sound and this places the creator(s) 'in the identical position of the painter . . . one becomes empirical in a way that the classical composer never was' (p. 129). Yet despite outstanding creativity, subdisciplinary professionalism and excellent technological resources, *Encounters* identifies significant transmission gaps, perhaps even wider than those experienced by the classical composer of yesteryear. If creativity is the process through which new ideas are produced and innovation is the process through which they are implemented (Landry & Bianchini, 1994), *Encounters* scored high on the former where participants' feedback affirmed that everyone would do it again; everyone found the concept and the music remarkable. In terms of innovation however, we apparently achieved far less, summarised here as:

- multiple subdisciplinary managers and competing production drivers;
- lack of authentic subdisciplinary interaction and feedback;
- inaccurate perceptions of inter-subdisciplinary processes and timelines;
- lack of trans-subdisciplinary 'big picture'.

Given the survival imperatives for Australian music making in industry (DFAT, 2004; Ormonde, 2004) and higher education (DEST, 2005), together with a positivist value system already explicit in the break between science and culture (Nicolescu, 1997), yet further subdisciplinary fracturing and/or competitiveness would appear to be unwise.

One of the important areas in which it will be important to develop new metrics to assess quality is in the creative arts . . . [there will be] considerable impact on our performance in research if traditional measures of research intensity and performance are used such as research income per academic staff and traditional publications per academic staff. (Griffith University, 2005; p. 8)

Further – monetary gain, incentive schemes and Key Performance Indicators (KPIs) tend to encourage competitive splits through rewarding and profiling individuals more so than complex teams, ie, smaller sound-bytes, ease of marketing, efficiency of administration. Intellectualism and rhetoric rules; authentic practice is muddy.

Towards Trans-subdisciplinarity

To return to the *Encounters* ecological analogy: just as the audio technician cannot take claim for the musical performances, the musicians may also not consider sound production as their art. Likewise in concert design, scholarly critique, composition, teaching and learning – these subdisciplines (perhaps 'species'?) cannot truthfully locate/resource their work independently or competitively. Population ecology literature identifies that improved conditions are created by 'the elimination of competition by means of mutual aid' (Kropotkin, 1987; p. 73) and that 'superior performance not only does not require competition; it usually seems to require its absence' (Kohn, 1992; p. 21). In terms of the resources required to mount such a project, 'competition also precludes the more efficient use of resources that cooperation allows . . . noncooperation approaches almost always involve duplication of effort' (Ibid; p. 61).

Like examples of success in industrial innovation (Faulkner, 1994), perhaps music-making could be prodded toward a greater capacity for efficient organisation. There has been much post-modern thought which attempts to address this, eg: SWOT analyses, strategic plans and risk aversion tactics are now commonplace; complex products and systems may be managed in the project-based organisation through short term horizontal structures (Hobday, 2000); more recently at QCGU, Soft Systems Methodology (Checkland, 1981) has become popular with researchers involved in collaborative composition. However, it may be superficial and/or premature to assume that all creative

and collaborative processes are 'problems' to be solved by imposing yet another top-down methodology. In the *Encounters* study there were a range of realities at work – the creative process was personal, self-evident, and subdisciplines apparently had their own dynamics which were in themselves, methodologies for problem solving. The collaborative process was a messy business but in one way or another, found its own route to solving the evolving problems that arose as the work developed.

I therefore suggest here that there is an essential need for basic research into what constitutes such subdisciplinary doxa and how this understanding might facilitate excellence in collaborative music-making. Just as shared intellectual endeavour and interdisciplinary enquiry is leveraged as enhanced, so-called 'Mode 2 knowledge production' (COSEPUP, 2004), revised musical ecologies may encourage a synthesis of diverse contributions from both tacit and explicit forms of know-how, in both academic and commercial contexts, where parallel subdisciplinary stances may authentically engage in the generation and production of music as new knowledge.

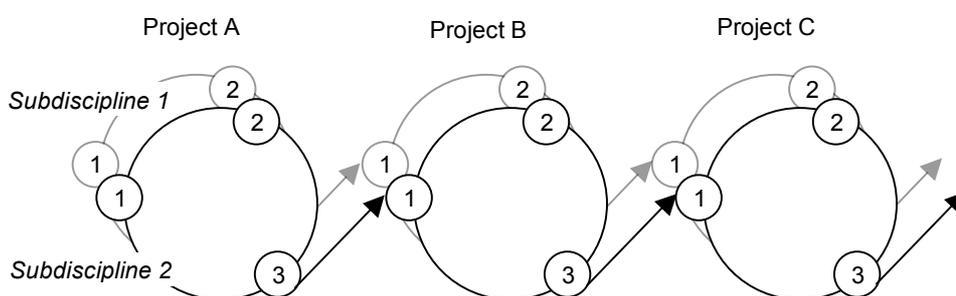


Figure 4: Towards a musicology of production?

CONCLUDING REMARKS

The business of the music conservatoire is often 'upside down' to industry practice. The live concert is conserved as 'the last remaining luxury – the one thing worth paying for – to hear and see living, respiring musicians playing living, inspiring music' (Eisenberg, 2005; p. 235). However, sustainability is increasingly questionable given rising costs, falling income and the limited physical reach of the concert hall. While the best real time art or 'creative practice as research' may be undeniably powerful, the work remains ephemeral and difficult to justify more widely in terms of its intrinsic benefits.

In industry, the process largely begins with the composition and creation of the recording, with subsequent concert tours, radio airplay and film used to promote these works. Audience reach and potential income has been exponentially extended through virtual recreations of the music. Similarly to books (or academic research output) these recordings are imprinted, distributed and consumed by a wide range of audiences and peers, in turn influencing disciplinary practice and social consciousness.

As this paper has revealed, when we attempt to merge these approaches through concert recording and publication, reciprocity, inter-subdisciplinary feedback and collaboration is problematic. Music-making becomes fractured in post-modern times where information overload, long working hours, shifting targets and lack of clarity may be commonplace. However, because such a landscape forces each of us to focus so intently on immediate goals and rewards, perhaps this may be the very vehicle through which we can innovate our way forward – if subdisciplinary doxa is becoming increasingly tied to corporate KPIs then pragmatically, explicit benefit-sharing may be one way to 'herd cats' toward cohesive music-making of greater quality, impact and accessibility.

REFERENCES

- ARC (Australian Research Council). (2004). *Priority areas for ARC funding*. Canberra: Australian Government. [Online]. Available: http://www.arc.gov.au/grant_programs/priority_areas.htm [15 August 2005].
- Bourdieu P. (1977). *Outline of a theory of practice* (Trans. R. Nice). New York: Cambridge University Press (pp. 164–71).
- Chanan, M. (1995). *Repeated takes: A short history of recording and its effects on music*. London: Verso.
- Checkland, P. (1981). *Systems thinking, systems practice*. London: John Wiley & Sons.
- COSEPUP (Committee on Science, Engineering and Public Policy). (2004). *Facilitating interdisciplinary research*. Washington DC: The National Academies Press. [Online]. Available: <http://www.nap.edu/books/0309094356/html> [1 July 2005].
- DEST (Department of Science, Education and Training). (2005). *Research Quality Framework: Assessing the quality and impact of research in Australia Issues Paper*. Canberra: Australian Government. [Online]. Available: http://www.dest.gov.au/sectors/research_sector/publications_resources/profiles/research_quality_framework_issues_paper.htm[28 August 2005].
- DFAT (Department of Foreign Affairs and Trade). (2004). *Australian–United States Free Trade Agreement. Guide to the Agreement*. Canberra: Australian Government. [Online]. Available: http://www.dfat.gov.au/trade/negotiations/us_fta/guide/ [28 August 2005].
- Draper, P. (2000). *New learning: The challenge of flexible delivery in higher education*. Doctor of Education thesis. Brisbane: Queensland University of Technology. [Online]. Available: <http://www29.gu.edu.au/staff/draper/edd/> [20 August 2005].
- Eisenburg, E. (2005). *The recording angel* (2nd Ed.). London: Yale University Press.
- Eno, B. (2004). The studio as a compositional tool. In C. Cox & D. Warner (Eds.), *Audio culture: Readings in modern music* (pp. 127–130). New York: The Continuum International Publishing Group Inc.
- Faulkner, W. (1994). Conceptualising knowledge used in innovation: A second look at the science-technology distinction and industrial innovation. *Science, Technology, & Human Values*, 19 (4), 425–458.
- Gillett, C. (1977). The producer as artist. In H. W. Hitchcock (Ed.), *The phonograph and our musical life*, ISAM Monograph No.14, New York: City University (pp. 51–6).
- Griffith University. (2005). *Research quality framework: response to the issues paper*. Canberra: Australian Government, Department of Education, Science and Training. [Online]. Available: <http://www.dest.gov.au/NR/rdonlyres/E667344F-0509-4B59-B56A-11C0A572CB6D/5631/RQF010004.pdf> [14 August 2005].
- Griffith University. (2004). *The context for graduate skills development*. [Online]. Available: http://www.gu.edu.au/centre/gihe/griffith_graduate/skills.htm [July 2005].
- Gould, G. (2004). The prospects of recording. In C. Cox & D. Warner (Eds.), *Audio culture: Readings in modern music* (pp. 115–126). New York: The Continuum International Publishing Group Inc.
- Hamilton, A. (2003). The art of recording and the aesthetics of perfection. *British Journal of Aesthetics*, Vol. 43 (4), October 2003.
- Hobday, M. (2000). The project-based organization: An ideal form for managing complex products and systems? *Research Policy*, Vol. 20 (7–8), pp. 871–893.

- Kohn, A. (1992). *No contest: The case against competition*. Boston: Houghton Mifflin.
- Kropotkin, P. (1987). *Mutual aid: A factor of evolution*. London: Freedom Press.
- Landry, C. & Bianchini, F. (1994). *The creative city (working paper 1: key themes and issues)*. London: Comedia.
- Niculescu, B. (1997). The transdisciplinary evolution of the University condition for sustainable development. Talk at the International Congress, *Universities' Responsibilities to Society*, International Association of Universities, Chulalongkorn University, Bangkok, Thailand, November 12–14. [Online]. Available: <http://nicol.club.fr/ciret/bulletin/b12/b12c8.htm> [1 May 2005]
- Ormonde, C. (2004). Free trade agreement may cost Australian information users \$88 million a year. *InCite*, September 2004. Deakin, Australia: Australian Library and Information Association (ALIA). (2004). [Online]. Available: <http://alia.org.au/publishing/incite/2004/09/fta.html> [20 August 2005].
- Plush, V. (2005). *About Encounters: A foreword from curator, Vincent Plush*. Brisbane: Griffith University. [Online]. Available: http://www.griffith.edu.au/centre/qcrc/encounters/content_encounters.html/ [12 August 2005].
- QCRC (Queensland Conservatorium Research Centre). (2005). *Encounters: Meetings in Australian music*. Brisbane: Griffith University. [Online]. Available: <http://www.griffith.edu.au/centre/qcrc/encounters/> [12 August 2005].
- Read, O. & Welch, W. L. (1976). *From tin foil to stereo: Evolution of the phonograph* (2nd Ed.). Indianapolis, IN: H. W. Sams.
- Sterne, J. (2003). *The audible past: Cultural origins of sound reproduction*. Durham & London: Duke University Press.

© Copyright Paul Draper [2005].

About the Author

Dr Paul Draper

Head of Music Technology, Queensland Conservatorium Griffith University
Project leader, IMERSD (Intermedia, Music Education & Research Design)
PO Box 3428, 16 Russell Street South Bank, Brisbane Qld 4101. AUSTRALIA
Tel +61 (07) 3875 6263 Mob: +61 0402 154703 Fax +61 (0)7 3875 6282
Email: p.draper@griffith.edu.au

Paul Draper designed and developed the recording, computing and e-learning infrastructure at Queensland Conservatorium Griffith University's Brisbane South Bank campus. He has written and developed key undergraduate and postgraduate programs for music technology, multimedia and popular music and is the recipient of numerous research grants and awards in his discipline. He been centrally involved in student professional development, industry /community linkage programs and the expansion of postgraduate research training. His current projects focus on practice-led research utilising the recently-launched QCGU IMERSD facility: a 5.1 surround-sound, film post-production and multimedia authoring studio for industry collaboration.