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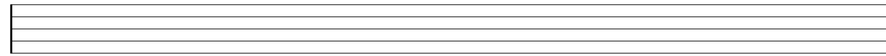

# COLLABORATION AND THE COMPOSER: CASE STUDIES FROM THE END OF THE 20TH CENTURY

Sam Hayden and Luke Windsor

## Introduction

The folk view of composition is often that of an isolated, possibly unhinged genius, struggling alone at the piano or desk. However, in this article we will investigate the collaborative aspects of compositional life, showing how such an individualistic model of the composer is both accurate and inaccurate, and how this paradox is played out in current attempts to valorize collaborative work in composition. Although we intend some of the observations and conclusions from this article to generalize, we are fully aware that such a case-study can only really be illustrative and provocative. Given that this is the case we will finish by attempting to make some general points about the aesthetic and social contradictions which this study has brought to light. Our concern in this article is more prospective than retrospective: although we will refer to some historical data, we aim to reflect mainly on contemporary compositional practice in the West, and particularly the UK.

Composers, according to Kemp's empirical work on musicians' personalities:

> appear to be individualistic […] have a capacity for solitude, and […] are attracted to complex and ambiguous symbolic enterprises.[1]

If Kemp is right, then it is probable that collaboration, whether within music or with other artistic or technical disciplines, may prove even more difficult for composers than for other individuals, although it is worth mentioning that creative and performing artists may share many general personality traits.[2] Kemp's view of the composer fits extremely well with the romantic folk notion of the great composer. However, his work on personality, carried out from the 1970s to 1990s, contrasts starkly with two articles written in the mid-1950s by Nash,[3] in that Kemp's focus on personality tends to downplay the social forces at play within composers' lives. Nash studied some of the 'most successful' American composers and student composers. Although he does find that established and student composers exhibit similar character traits to those found by Kemp,[4] he also stresses[5] that, in 20th-century society at least, the 'musical process' involves a complex of different institutions and roles, and that the composer's individual aesthetic criteria are

[1] Kemp, A. E., *The Musical Temperament: Psychology and Personality of Musicians*. (Oxford: Oxford University Press, 1996), p. 216.
[2] Kemp, *The Musical Temperament: Psychology and Personality of Musicians*.
[3] Nash, D. J., 'Challenge and response in the American composer's career', *Journal of Aesthetics and Art Criticism*, 14 (1955), 116–122; Nash, D. J. 'The socialization of an artist: The American composer', *Social Forces*, 35 (1957), 307–313.
[4] Nash, 'The socialization of an artist: The American composer'.
[5] Nash, 'Challenge and response in the American composer's career'.

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mediated by the actions of other artists, performers, conductors, managers, agents, publishers, academics and critics. Indeed, he argues that the ability of composers to navigate between their own creative decision-making and the power of these others is strongly related to their 'role-versatility': all 23 of his professional composers had other professional roles, with, for example, 22 of them being teacher-lecturers. For Nash, the individuality of the composer is found alongside a willingness (however grudgingly) to interact with others, and he notes that the only area in which the tension this creates is fully balanced by a corresponding reward is when composers collaborate with other artists (the examples he gives are the choreographer, librettist and scene designer), and adds (it is hard to say whether humour is intended) that the most ideal form of collaboration for a composer might be with a dead artist! Nash seems to be telling us that his composers were prepared to collaborate, and were versatile, but that they experienced considerable conflict between their own creative decision-making and the demands of more powerful 'others'.

Another way of shedding light on the professional lives of composers is to analyse the actual collaborations involved in the composition of a piece. Crist[6] provides a detailed critique of the composition and multiple revision of Copland's Third Symphony, showing how many detailed compositional decisions were in fact made on a committee basis, either prior to putting pen to paper, pre-rehearsal, or post-rehearsal. Although Copland's working methods may not be representative, this is an example of how conductors and publishers may directly influence and 'collaborate' with the composer to create a finished 'work'. In a different way, Hankinson and O'Grady[7] detail how a shared aesthetic goal can be a key factor in producing a mutually beneficial collaborative process.

Before turning to our case studies, which will examine a wide range of collaborative settings, it is useful to outline some theoretical ideas which may be helpful in clarifying this paradoxical aspect to compositional work. Although it may seem that this paradox is only of scholarly interest we would argue that the actions of musicians in the so-called 'serious' tradition tend to reveal a sometimes tacit reliance on the folk view of composer as an individualist manipulator of symbols: it is notable that even in the domain of electroacoustic music, despite the tendency of composers to become expert technicians, such technical skills are often sub-contracted to non-composers, especially in an institutional setting such as IRCAM.[8] Composers may well wish to enter into more collaborative, rather than directive, relationships with performers, for example, or may be urged to collaborate with artists from other media, but to what extent are they prepared to do this by their experiences, and supported in this by their education?

Argyris and Schön distinguish between what they call the *espoused theories* individuals have about how they engage with others (what they think or say they do) and their *theories in use* (what they actually do) and suggest that poor collaboration often arises where the two are significantly different.[9] If one claims, for example, that one wishes to take on board aesthetic ideas from a performer, in addition to technical feedback, and yet acts in a way that is resistant to such a widening of

[6] Crist, E. B., 'Aaron Copland's Third Symphony from sketch to score', *Journal of Musicology*, 18 (2001), 377–405.

[7] Hankinson, A. and O'Grady, D., 'In Re: Collaboration', *Perspectives of New Music*, 19 (1981), 200–211.

[8] Born, G., *Rationalizing Culture. IRCAM, Boulez, and the Institutionalization of the Musical Avant-Garde*. (London: University of California Press, 1995).

[9] Argyris, C. and Schön, D., *Theory in practice: increasing professional effectiveness* (San Francisco: Jossey-Bass, 1974).

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scope, then collaboration is unlikely to be easy, since the performer will be frustrated by what he or she perceives to be a contradictory working context. Similarly, the performer may say that he or she is happy with having only technical input, but may act in a way that reflects a dissatisfaction with such a limited technical role.

If Argyris and Schön stopped here their ideas would not be particularly helpful beyond this descriptive level: however, they go on to argue that such interactions can fall into two types at the level of the individual: *type I* interactions are characterized by individuals having a fixed and defensive view of what their role is, whereas individuals engaging in *type II* behaviour are able to question such ideas about their own role. Type I is often characterized as 'closed-loop' and type II 'open-loop' behaviour. Type I interactions follow the assumptions of both parties: for example, performer and composer tacitly agree that the role of composer is creative and the role of performer is technical. Any problems that arise here can only be solved within this limited scope. A type II interaction allows either party to question such assumptions about the constraints. For example, in a type I interaction a composer might act in such a way as to prevent a performer who has commissioned a piece from having too much creative input, protecting their schematic role as composer, whereas the performer may be excessively prescriptive in defining how a piece should be notated and indeed what is playable, based on their experience. Neither party is open to the possibility here that the best outcome might be achieved if these assumptions are abandoned. In a type II style interaction the composer might be more open to creative solutions which arise from dialogue with a performer, and the performer might feel such contributions are more welcome.

In more general terms, it may be that the traditional separation of performance and composition in Western art music may be a tacit limit on collaborations of this kind: Schön[10] notes that professions (and he includes music within his list) tend to build a repertoire of technical procedures which are only questionable by individuals within that profession. Despite the role-versatility of composers (who are often skilled performers and conductors), they and performers might act as if their technical knowledge is so specialized as to be unquestionable, resulting in defensive and controlling behaviour, rather than a focus on mutually beneficial goals. We would not wish to valorize type II behaviour here in the abstract, as such technical expertise itself may provide valid responses to many situations the composer encounters, but as Schön argues, professional expertise can often be refreshed by an openness to input from non-specialists. Just as performance techniques have long been stimulated and revised to accommodate developments in compositional technique, so might compositional techniques respond to developments in instrumental techniques and technologies.

Lastly, this introduction should provide some context regarding the institutional valorization of collaborative practice in composition. Despite the individualistic nature of compositional practice, and much of the training at tertiary level which corresponds to this model, educational research and practice related to primary and secondary education seem to valorize group work in composition, and collaborative practice is often a criterion for competitive commissions. For example, the British Council overtly places 'great emphasis on collaboration' in an international context, encouraging artistic collabo-

[10] Schön, D. A., *The Reflective Practitioner: How Professionals Think in Action* (London: Maurice Temple Smith, 1983).

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rations involving UK artists working abroad.[11] The organization *Visiting Arts* has a similar agenda in its Creative Collaborations scheme.[12] Some funding bodies such as *Artmusic* have been formed with the primary aim of promoting collaborative work in the arts and appear to self-consciously valorize such work in their mission statement:

> When two or more elements coexist and interact the results are often unpredictable. The product of the collaborative process is always more than the sum of its parts and there emerges another layer in the work which is indefinable and separate. This is the magical quality which draws people to the work time and time again.[13]

In summary, it seems as if the issue of collaboration is a potentially problematic domain for the composer. However motivated to enter into collaborations he or she may be, there may be tacit or explicit resistance to the idea of giving up creative control. Moreover, a focus on collaboration may move the working style away from a tendency to prioritize the output of composition towards a desire to reflect on and improve the processes which come prior to this. Such a move strikes against the traditional view of the composer's concerns, although as we have seen, such a traditional view may not represent the practices which composers have long engaged in. The stated ideology of many composers may still be that the aesthetic quality of the composition as notated, its *potential* for performance, is the main issue. Brian Ferneyhough is unambiguous on this issue, seeing the composer as provider of coherent and interpretable musical structures for performance:

> it is they [composers] who, in the final analysis, are directly charged with providing binding compositional contexts to be interpreted.[14]

In a similar interview, while citing the influence of his teacher Gèrard Grisey, Magnus Lindberg also appears to support the idea that the aesthetics of the composition are of primary concern to contemporary composers. Whether in an electronic or acoustic musical domain the compositional 'output' as abstract sound object is not discussed in relation to the institutional forces that enable its performance:

> [Grisey's] aesthetics are based on an empirical approach to sound; ultimately, music is the 'output', whether acoustically or electronically produced. What one does in the studio is what one does with an orchestra.[15]

However, the practicalities, as Nash[16] pointed out, demand that composers adopt a rather different 'theory in use': one which involves a constant collaboration with the other forces involved in music making, whether administrative, financial, promotional, practical or technical. It is this conflict between what may be an entirely reasonable concern with the written quality of compositions and the processes involved in bringing about and optimizing the sounding quality of performances which our case studies will help us to reflect on.

[11] The British Council, *Support and Funding Overview* <http://www.britcoun.org/home/arts/arts-support-and-funding/arts-support-and-funding-overview.htm> [accessed 12 July 2005]; Hayden's recent commission *Emergence* (2004) for the Oslo Sinfonietta was substantially funded by the British Council, Norway.

[12] Visiting Arts, *Creative Collaborations in Music Awards 2002/2003* <http://www.visitingarts.org.uk/ funding/creativecollaborationsb.html> [accessed 12 July 2005]

[13] Artmusic, *Info* <http://www.artmusic.org.uk/info.php> [accessed 12 July 2005]

[14] Cody, J., *Brian Ferneyhough in conversation with Joshua Cody* <http://www.sospeso.com/ contents/articles/ferneyhough_p1.html> [accessed 12 July 2005]

[15] Noreen, K. and Cody, J., *Magnus Lindberg in conversation with Kirk Noreen and Joshua Cody* <http://www.sospeso.com/contents/articles/lindberg_p1.html> [accessed 12 July 2005]

[16] Nash, 'Challenge and response in the American composer's career'.

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## CASE STUDIES

### Rationale and methodology

Between 2001 and 2005, the first author was an AHRC Fellow in the Creative and Performing Arts, based in the School of Music at the University of Leeds, and more recently, the Department of Music, University of Sussex. During this period, he also worked at the Center for Computer Research in Music and Acoustics (CCRMA, Stanford University) and at the Institut de Recherche et Coordination Acoustique / Musique (IRCAM, Paris). The pieces discussed below are largely a result of working within the constraints of the AHRC fellowship (although some were completed before its start), which explicitly aimed to investigate collaboration and shares its title with this paper. Hence, it is not suggested that this compositional output is in any way representative of contemporary composers, but rather that it is representative of a composer seeking to engage with the generic challenges of collaboration within current institutional and aesthetic contexts. The first author's dual role within this process allows for an engagement with the subjective experience of collaboration, and ensures that the critical evaluation of these experiences does not become too objectified and hence drained of significance. In other words, rather than this research taking the form of a conventional division of labour (*researcher* and *informant*), the first author is literally a *co-researcher* whose subjectivity is an essential and concomitant check on the second author's more general and theoretical suppositions. It is all too easy for research and practice to become disengaged from one another when the latter becomes merely an object to be studied with little engagement with the role practitioners have in the realm of critical, as opposed to creative, endeavour. We would argue that the involvement of the practitioner, not only as a research subject, but also as a co-researcher, enables the research to gain a degree of validity which is otherwise missed.

Hence, the research methods employed here are those of a collaborative qualitative enquiry: the first author provided the second with some detailed notes on the musical collaborations he had been involved in, which provided both factual detail and a degree on self-critical evaluation of each project, with special attention paid to the collaborative experience. The second author then suggested a theoretical framework within which to analyse this protocol, that of Argyris and Schön,[17] and the authors discussed how this and other institutional, historical and theoretical writings might help focus the enquiry, the results of which are summarised in the introduction of this paper. The next stage was to revisit the original protocol in the light of this agreed set of frameworks. Two primary concerns were identified following this re-evaluation: (1) the issue of process- versus outcome-based evaluations of quality, and (2) the identification of different degrees and types of collaboration. The authors noted that within the protocol the first author used two distinct measures of success, one related to whether he considered 'the piece' to be successful in aesthetic terms (outcome-based), and one related to whether the collaboration had been successful in inter-personal terms (process-based). It was agreed between the researchers that there was no one-to-one correspondence between these two measures of success; some pieces were self-judged to be highly satisfying on both measures, some on one, and some on neither. The analyses below will engage with this issue in some detail. As regards the degrees and types

[17] Argyris, C. and Schön, D., *Theory in practice: increasing professional effectiveness*.

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of collaboration, discussion revealed three main categories – *directive*, *interactive* and *collaborative*:

DIRECTIVE: here the notation has the traditional function as instructions for the musicians provided by the composer. The traditional hierarchy of composer and performer(s) is maintained and the composer aims to completely determine the performance through the score. The instrumentation for the pieces in this category tends to be acoustic in nature and made up of conducted ensembles or chamber groups. The collaboration in such situations is limited to pragmatic issues in realisation, as outlined at the end of the introduction.

INTERACTIVE: here the composer is involved more directly in negotiation with musicians and/or technicians. The process is more interactive, discursive and reflective, with more input from collaborators than in the directive category, but ultimately, the composer is still the author. Some aspects of the performance are more 'open' and not determined by a score. The works in this category tend to combine notation, acoustic instruments and electronic media.

COLLABORATIVE: here the development of the music is achieved by a group through a collective decision-making process. There is no singular author or hierarchy of roles. The resulting pieces either (1) have no traditional notation at all, or (2) use notation which does not define the formal macro-structure. In (2), decisions regarding large-scale structure are not determined by a single composer. Rather, they are controlled, for example, through live improvised group decisions, or automated computer algorithms. The pieces which fit this category use electronic and digital media in combination with live or recorded acoustic instruments.

These are by no means exclusive categories but should be seen more as a continuum along which the case studies are to be located. Moreover, some of the projects contain aspects of more than one category. However, in order to ensure that the categories are clearly exemplified, the following analyses will deal with them in a somewhat schematic manner. First, the three categories described above will be explored through three case-studies which show how these three styles work out in practice. Second, the issue of process- versus outcome-based evaluations of quality will be addressed through a second round of analysis of six case-studies and an attempt will be made to explore the relationships (if any) between collaborative style and the composer's evaluations of quality. Finally, and most importantly, these two layers of analysis will be examined in the light of closed- and open-loop learning, in order to show how the first author's experiences might provide a starting point for a more cultural (rather than organizational) critique of the whole notion of collaboration in composition.

## The directive approach

*Sunk Losses*[18] is a conventionally scored orchestral work, which exemplifies the directive approach. Here, the first author describes his interaction with the musicians:

[18] Hayden, S., *Sunk Losses* for large orchestra (2002). This piece won the 2002 Christoph Delz Foundation Second Competition for an orchestral work. It is only partly coincidental that this work's title reflects an issue from the management psychology literature: the 'sunk costs error' (see, e.g., Arkes, H. R., & Blumer, C., 'The psychology of sunk cost', *Organizational Behavior and Human Decision Processes*, 35, (1985), 124–140).

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> The composition of *Sunk Losses* for the Saarbrücken Radio Symphony Orchestra was (unsurprisingly) completed without talking to any of the performing musicians in advance. I did manage to have some discussions with the conductor, Johannes Schoellhorn, in advance of the rehearsals, mainly regarding issues of bowing, beat patterns and tempi. In consultation with the conductor, I added bowing marks to the whole score and all the string parts myself in order to save valuable rehearsal time […] I presumed that a German radio symphony orchestra might be more used to contemporary music than most orchestras. I also presumed that the concepts of "new-complexity" to which my score has some relation – such as the use of complex rhythmical ratios to guarantee a certain gestural energy and approximation in performance – would be a familiar idea to German musicians.

Elsewhere in the first author's descriptions of this piece it is clear that this piece follows a traditional working out of a conceptual framework through notated musical structures.

> I conceive of the compositional process itself as something fleeting, vulnerable, fragile – and impossible to reconstruct through post-mortem musicological analyses. The irrationality of decision-making is certainly a metaphor for this piece and has a direct connection to the compositional processes that created it. While composing, I used arbitrary permutations of numbers (often prime number sequences) to affect tempo, rhythmic subdivisions, pitch material, register, density and other musical parameters in such a way that random or arbitrary decisions in the small-scale could have massive (and often unforeseen) consequences on the large-scale formal level.

Although present at the rehearsals of the première, in this case this was the first real opportunity the composer had to interact directly with the orchestral musicians. The primary means of communication was through the written score, and through the third-party interventions of the conductor, who had had some limited opportunity to discuss with the composer some extra-notational, but nonetheless pragmatic, issues. Here, the piece is handed over to the musicians almost fully formed, and most of the aesthetic 'work' might be considered 'done' by composer, musicians and conductor (although this becomes a less clear conclusion when considered in terms of open- and closed-loop behaviour later in this paper).

## The interactive approach

*Emergence*[19] is an exemplar of the interactive approach described above. The composition of this piece involved substantial collaboration between the composer (the first author) and music technologist and Max/MSP programmer (Alexander Jensenius), accordion soloist (Frode Haltli), a saxophonist (Rolf-Erik Nystrøm) and a number of studio technicians (especially Cato Langnes). These interactions were mainly based around technical discussions, rather than aesthetic ones. The composer's role was here to write the piece and the other parties provided advice on how the concepts underlying the piece might be realized. So, for example, the interaction with the soloist was here restricted to discussions about timbral and technical properties of the accordion, and although these discussions took the form of a dialogue, with corresponding revisions of the piece in response to the soloist's input, the composer maintained ultimate control over the structure of the piece. Similarly, the dialogue between programmer and composer was limited to the technical dimension, with the programmer advising on possibilities and realizing the composer's aesthetic intentions, rather than instigating musical decisions. Moreover, although this piece was

[19] Hayden, S., *Emergence* for solo accordion, ensemble and live electronics (2003–04).

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written in close collaboration with a number of musicians and technicians, the composer's relationship with the conductor and ensemble was fairly 'traditional', mirroring the directive approach taken for *Sunk Losses*. Hence, this piece fits the interactive paradigm well only in certain aspects.

## The collaborative approach

*GRAFT*[20] is more of an ensemble or project than a piece as such, and exemplifies the collaborative end of the continuum; the musicians involved include three composers and two instrumentalists who met during residencies at the Akademie Schloss Solitude, Stuttgart. The first author describes it thus in one of his protocols:

> *GRAFT* would be impossible to repeat with different musicians as no precise instructions or documentation exists; only a way of working that is specific to the musicians involved and that has evolved over time. We have developed our own unique palette of sounds and gestural types. Everyone is dependent on everyone else to produce sound resulting in a truly collaborative situation. The interconnected nature of the electronics creates a result very specific to the group.

Little or no notation is used and it appears that the participants collaborate in a non-hierarchical manner, which, as explained here by the first author, is related to the technical context:

> There was an interesting (non)-hierarchy built into the instrumentation where everyone involved was dependent on everyone else to produce sound. The Nord Modular synth (Urs Liska) only modulated sound going into it, not producing any sound itself. Likewise, the Max/MSP sound spatialization system (Daniel Hjorth) did not produce any sound but assigned speakers and volumes (including silence!) for all the electronic and amplified sounds coming into its inputs. This system had ultimate control of what was finally heard through the PA. The live performers (either Carl Rosman playing contrabass-clarinet, or Glenn Larsson playing percussion, or both) produced all the live instrumental sounds. A software synthesiser triggered by a MIDI keyboard, the computer-based Max/MSP granular synthesiser and live sampling patches (Sam Hayden) incorporated a selection of pre-loaded or live captured samples. These were then either played as improvised gestures or by semi-automated randomised computer algorithms, which were then spatialized and processed by the other electronic and computer music systems.

In such a group, even if one of the composers sought to work more directively, the context mitigates against this.

## Process- and outcome-based self-evaluations

Having clarified the categories of collaboration through examples, it is now possible to try to map these styles of working onto the composer's evaluations of both process and product. At an earlier stage in the research process, the first author rated each of his pieces in this period in terms of musical outcome and collaboration. All of the above examples were regarded as good or excellent (a five-point scale from very poor to excellent was used, with moderate, poor and good as the other choices): the range on this dimension was from moderate to excellent across all the projects. The ratings for collaboration were more varied: *Sunk Losses* was rated 'poor' on this dimension, despite its 'good' rating for the piece itself. Conversely, although *GRAFT* was rated 'excellent' for collaboration, it was only rated 'good' in terms of the musical prod-

[20] Hayden, S., *GRAFT* for contrabass-clarinet, percussion, Nord modular synth, computer 1: Max/MSP granular sythesis patch, software sampler (*GRAFT I*) and Max/MSP live sampling patch (*GRAFT II*), computer 2: Max/MSP 8-channel sound spatialization system (2002–).

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uct. A table showing all the pieces and their ratings for collaboration and musical outcome shows clearly that highly evaluated collaboration does not equate with an excellent musical outcome. Indeed there is no systematic relationship between these two variables (see table 1 below). Moreover, there are pieces which, although explicitly collaborative, were not wholly successful on this dimension (such as *3D-Music* which will be discussed at length later in this paper).

| *Project* | *Evaluation of Collaboration* | *Evaluation of Musical Outcome* | *Ensemble / Musicians involved in Collaboration* |
|---|---|---|---|
| *3D-Music* | moderate | poor | London Sinfonietta / Braunarts |
| *Actio* | moderate | moderate | Canto Battuto |
| *Anthem* | good | good | [rout] |
| *Emergence* | good | excellent | Frode Haltli / Oslo Sinfonietta / NoTAM |
| *GRAFT* | excellent | good | GRAFT |
| *Le Retour à la Raison* | good | good | Miguel Bernat (Ictus) |
| *Relative Autonomy* | very poor | excellent | London Sinfonietta |
| *Retaliation* | moderate | moderate | Stacie Robinson |
| *Sunk Losses* | poor | good | Saarbrücken Radio Symphony Orchestra |
| *System / error* | moderate | good | Trio Transport |

Table 1

However, this does not include an evaluation of the process *per se*: although *Sunk Losses* was not a good collaboration, the process was successful in its own terms, given the traditional context. It is only if one assumes (or claims) that successful collaboration is necessary for a successful process that this becomes so, and this leads neatly onto a discussion of collaboration in these pieces in terms of Argyris and Schön's ideas on effective professional behaviour.

## Organisational psychology for the composer: collaboration in theory and practice

Argyris and Schön focus primarily on the ways in which professionals might improve their effectiveness, rather than upon collaboration *per se*. However, they are concerned with effective working practices, and *effective* collaboration with colleagues (and even customers or end-users) is very much part of their interest.[21] Schön's term 'The Reflective Practitioner'[22] has become a catchword in management training, but this should not detract from his serious intent: here it is relevant in that it may be that what composers claim to be doing, or to value, may not always reflect their practice. What we would argue, is that reflection on practice is an essential part of professional life, and we will show this through identification of some of the espoused theories of musicians as evidenced in the first authors work, then by contrasting this with the actual practices (or theories in use) that may or may not coincide with these ideals. Following this, we will turn to the possibility that certain patterns of behaviour in relation to collaboration may be unproductive, in that they are examples of closed-loop, rather than open-loop, learning styles.

[21] Argyris, C. and Schön, D., *Theory in practice*.
[22] Schön, D. A., *The Reflective Practitioner*.

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In many of the projects listed in table 1, the extent to which collaboration took place, or was successful, is relatively unimportant to the outcome. However, it is clear that despite this, there are many instances in which the first author felt that a directive mode would be better replaced by a more collaborative one. Is it the case here, that there is a mismatch between espoused theory and theory in use? What is clear, is that a composer is not free to impose a collaborative model on his co-workers, and may have to fall back on more directive styles of working to fit with the expectations of professional musicians. However strongly the collaborative model is valued, it can only operate when all parties are prepared to enter into collaboration. Moreover, there might be many reasons a composer might adopt a more collaborative approach: institutional pressure, personal preference, or practical benefits, amongst others.

One project from this set in particular exemplifies the valorisation of collaboration as an ideology, yet the actual extent to which useful collaboration took place within the project is open to question. *3D-Music*[23] is the most self-consciously collaborative of the projects considered here. It is an interactive computer-based musical environment combining graphics and sound, whose 'performance' takes place on the internet. This project involved a six-month period of extremely close collaboration involving a composer (the first author), a computer graphics artist (Eduardo Carrillo), performing musicians (London Sinfonietta), a conductor (Martyn Brabbins), a computer programmer (Adam Hoyle), a multi-media arts company (Braunarts: Gabi Braun – artistic facilitator, and Terry Braun – executive producer) and the sound engineers of Sound Intermedia (Ian Dearden and David Sheppard). In the opinion of the composer:

> … the collaboration process that created *3D-Music* was of limited success because the creative situation of the work itself demanded a rethinking of roles that the individuals involved were not prepared to do beyond a certain point. Those involved in the project (including the composer) seemed unable to move beyond their preconceptions and conceptual boundaries coming from their own disciplines and aesthetics about what the nature of the piece should be. In creating a computer-based composition with no fixed duration, continuity or singular narrative structure, I had to rethink the idea of a composition as a fixed form, which was a potentially radical challenge to my artistic practice.

It is clear from these reflections of the first author that despite the external stimulus for collaboration provided by the institutional context, and the readiness of all parties to espouse collaboration as a working method in these and other circumstances, the limitation here was in terms of the readiness of those involved to move away from a set of working practices that focus on outcome rather than process, and that valorise single-discipline values. Whereas the collaboration in *GRAFT* is reflected upon in glowing terms by the first author, and there is a clear artistic decision to forego directive working methods, this does not seem to be the case here:

> The final result showed a possible tension between my somewhat avant-garde approach to composition and the more commercial aesthetics of the visuals. Importing concepts from the computer games industry, the Braunarts organisation favoured a clear cause-and-effect idea of interactivity mapping sounds and the image-based interface directly in a one-to-one relation. I was interested in a more abstract relationship between music and visuals where causality is not so obvious.

[23] *3D-Music* < www.braunarts.com/3dmusic> [accessed 12 July 2005]

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The grounds for working collaboratively it seems may be many, but in this case it was felt that such collaboration drew at least one of those involved away from aesthetically comfortable territory.

Despite the positive self-evaluation of *Sunk Losses* in terms of its outcome, and our view above that this project did not in itself *require* a collaborative approach from musicians or composer, it is worth examining whether the way in which composers and orchestral or ensemble instrumentalists (and their conductors) tend to interact might not benefit from some open-loop style learning. A closed-loop approach, which assumes fixed roles for composer and musicians must be directive, is not the only possibility here. Indeed the ability to question this assumption might be a key to improving not only the musical outcomes, but also the efficiency and quality of the process itself. The knowledge that instrumentalists can bring to the performance of a new work tends only to be shared with the composer during brief rehearsals, if at all, which offers little opportunity for useful revision of the score. In this piece, the schematic assumptions of the composer and orchestra led to a rather unproductive impasse: as discussed above the composer assumed the musicians would interpret the notation in a certain way (going beyond the notation), whereas the musicians expected the notation to more conventionally specify the performance.

How to break such deadlock is not easy to see, but it is clear that in an orchestral setting it is far from easy to question such assumptions, and the prospect for more interactive modes of engagement is rather bleak unless composer and musicians are prepared to fully engage with the assumptions of the other party, and to question their own. *GRAFT* provided a rather easier context within which to explore different working methods in a more open and reflective manner, and it is perhaps no surprise that this collaboration met two of the criteria identified in our introduction: close personal relationships between the participants and a shared aesthetic mission.

## Conclusions

This investigation has to some extent uncovered the conflict between an idealized liberal notion of the individual and subjective compositional act and the institutional, cultural and economic forces needed to realize its production in performance – a tension that can come to the foreground in a collaborative artistic situation. These case studies and their critical evaluation are the experience of one composer so the generalizability of these findings is necessarily tentative. The main observation is that we have found no obvious deterministic relationship between the success of the collaboration (as *process*) and the success of the work created (as *product*). An unsuccessful *process* does not imply an unsuccessful *product* just as a successful *process* does not imply a successful *product*.

The most successful artistic collaborations described here occurred when the creative *process* arose from within the group and was not a predetermined ideology. A successful collaboration was not guaranteed by having good personal connections among those involved, but this was no disadvantage. A shared aesthetic goal seemed important: incompatible aesthetics can impede successful collaboration by promoting conflicts in working methods and artistic aims. However, an artistic collaboration did not have to be democratic to be successful, and neither did a more collective and non-hierarchical way of working guarantee success.

It is difficult to conceive of a musical practice that is not in some sense collaborative: collaboration and interdisciplinary artistic situations are not synonymous. There is as much collaboration involved in creating an

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artistic work within an apparently singular artistic discipline involving 'traditional' technologies, as there is in a self-consciously multi-media work involving personnel from different artistic disciplines and state-of-the-art technologies. Technology certainly has a role in challenging the pre-existing hierarchical roles of composer as aesthetician and producer of interpretable structures, and performers and studio engineers as technicians who help the composer to realize their aesthetic vision. However, the use of more advanced technology did not increase the probability of producing a successful and 'boundary-breaking' collaborative work in the creation of the pieces discussed here, not least because software is not neutral and can impose pre-existing aesthetic assumptions onto the artistic process. We would argue that 'cutting-edge' technologies do not necessarily produce 'cutting-edge' works of art, and critical ideas about the contextual *use* of technology in artistic production are more crucial to a successful artistic outcome.

Lastly, the roles of participants are often predetermined by their 'separate' artistic disciplines and can be a real hindrance to the success of the collaborative artistic situation. The fashionable rhetoric of the 'innovative', 'boundary-breaking' and 'cross-disciplinary' may well be contradicted in practice when pre-existing roles are reified and inflexible. It is by no means just 'the composer' who suffers from such institutionalized categories and expectations. The valorization of 'collaboration' within current arts funding bodies must be questioned when ethical assumptions as to what collaboration *should* mean become imposed conditions of artistic production and funding (e.g., the idea that collaborative or interdisciplinary work requires at least two people from different disciplines). The pre-existing cultural boundaries that define artistic disciplines may well create incompatible differences between *espoused theories* and *theories in use* in artistic collaborations, which can become problematic for both the artistic *process* and *product*.

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