



THE UNIVERSITY *of* EDINBURGH

Edinburgh Research Explorer

Electric Cowboy Cacophony

Citation for published version:

Edwards, M, *Electric Cowboy Cacophony*, 2008, Performance.
<<http://people.ace.ed.ac.uk/staff/medward2/ecc/electric-cowboy-cacophony.pdf>>

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Peer reviewed version

Publisher Rights Statement:

©Edwards, M. (Author). (2008). Electric Cowboy Cacophony.

General rights

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact openaccess@ed.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.



Electric Cowboy Cacophony

A Project for Cross-Genre Free Improvisation¹

Michael Edwards

Reader in Music Technology
School of Arts, Culture and Environment
University of Edinburgh
Edinburgh, UK
michael.edwards@ed.ac.uk
<http://uofe.michael-edwards.org>

Abstract: *Electric Cowboy Cacophony* is a quartet of musicians from different countries and with distinct musical backgrounds, ranging from rock to avant-garde classical, from bluegrass to computer music. In the second half of 2008 they met to record and publicly perform free improvisations that exploited both their common and diverse musical histories, re-injecting some of the roots elements that many Free Improvisation practitioners consciously avoid.

Above all the group's trans-national/trans-cultural/trans-aesthetic character defines their sound world. The result could be interpreted as either a cohesive and convincing eclecticism, or a jarring mish-mash of unconnected stylistic oddities. Together with a general discussion of the role of improvisation in Western music, *Electric Cowboy Cacophony's* working methods and musical results are presented: from the point of view of their techniques, technological innovation and interaction, and aesthetic/stylistic coherence.

Keywords: Music, Free Improvisation, Computer Music, Live Electronics, Guitar, Piano, Banjo, Saxophone, Synthesiser, Eclecticism, DVD-Audio, Surround Sound.

Introduction

This paper addresses 1) improvisation in the context of Western classical music and the Free Improvisation movement; 2) the Free Improvisation quartet *Electric Cowboy Cacophony*: its working methods, and its place in the related aesthetic and technological milieu. Whilst not attempting to devalue the historical and current practice of notated composition, a case is made for more widespread inclusion of and respect for improvisation in contemporary musical practice, especially within the avant-garde and academic setting.

¹ This project was supported by a grant from the UK's Arts and Humanities Research Council.

Improvisation in Western Classical Music

Improvisation is “one of the few universals of music in which all cultures share in one way or another” (Nettl, 1974: 4). Despite the decline of improvisation in Western classical music practice, its impact on composed, notated music is undeniable. This may be common knowledge to anyone expert in the field of contemporary music, but perhaps less credence is given to musicologist Ernest Ferand’s view of the development of European sacred composition almost a millennium ago: “the beginnings of polyphonic music in fact can hardly be accounted for except as outgrowths of improvisatory practices” (Ferand, 1961: 5). This is a particularly striking statement given academia’s almost exclusive concentration on notated composition in its usual description of the development of Western classical music, as well as in the face of an almost complete lack of improvisation training in its instrumental pedagogy.

In the Baroque and Classical periods, improvisation was evident in various forms: the improvised embellishment of slow movement section repeats in the Baroque solo sonata; the invention of cadenzas in Classical solo concertos; the extempore playing of introductions and interludes on the church organ throughout. But there can be no doubt of the diminution of these practices as many of today’s classically-trained musicians, for example, turn to notated versions of cadenzas to make up for their lack of improvisation skills.²

On the other hand, over the last fifty years or so there has been a clear increase in the intellectual respect accorded to contemporary improvisation practice in the broader (i.e. not strictly classical) sense. There is still resistance of course, and the nature and origin of this resistance is interesting, as we shall see. But both within academia and Western society at large, music that may once have been dismissed as not legitimate or not worthy of serious attention—free jazz, for example—is now studied and performed at high-profile events and institutions. The hegemony of post-war avant-garde compositional techniques (particularly the parametric serial approach) has given way to a more inclusive and wide-ranging gamut of music-making—in short, from an intellectual perspective we now have a more rhizomatic as opposed to hierarchical set of contemporary music practices.

Whilst this is certainly due in part to compositional challenges to serialism from within the cohort of avant-garde composers active in the post-World War II Darmstadt circle (e.g. from Cage and Ligeti), as well as from the American minimalists (e.g. Reich, Riley, Glass), more explicit links between composition and improvisation were made by composer/performers La Monte Young, Frederic Rzewski, Henri Pousseur and Cornelius Cardew—even the serialist Stockhausen himself, in works such as *Aus den Sieben Tagen* and *Stimmung*. Perhaps more

² An exception can be argued in the case of 1) organists, particularly of the French tradition, where improvisation continues in some quarters to be taught, practised, and valued; and 2) performers such as Nigel Kennedy and Robert Levin who improvise their cadenzas live during performance.

significant here though is the challenge from improvising scholar/composer/musicians such as George Lewis,³ Evan Parker, Peter Brötzmann, Anthony Braxton, Pauline Oliveros, Roscoe Mitchell, Joelle Leandre, Derek Bailey, and Richard Barrett.

Gunther Schuller's Third Stream—a term he invented in 1957 for music that combines classical and jazz techniques (Joyner, 2000: 63)—no doubt also played a role in raising the classical and academic music world's awareness of and respect for jazz and improvisation. But it is arguably the improvised music of George Lewis *et al* which has most increased cultural investment in improvised music. Not coincidentally perhaps, with its prevalent lack of regular beat and tonal centre, and, for want of a better word, its earnestness, this music is often difficult to distinguish sonically from contemporary composition. Free Improvisation musicians may justifiably argue that their music should not have to sound as though it were pre-composed in order for it to be deemed worthy of merit, but in order to be acknowledged both intellectually and financially in the cultural ambit described by classical/modern composition it is certainly no disadvantage. Funding for music in the west is, broadly speaking, provided through one of two means: corporate capital generated through commercial success, or state/private sponsorship. If the latter, then most funding bodies' proclivity is, out of political necessity if not natural inclination, toward the conservative,⁴ i.e. music centred upon classical composition both old (mainly) and new (less so).

The tension between improvised and composed music is clear. Improvisation is confronted by widely-held opinions such as those of the famous avant-garde composer Luciano Berio (1925-2003): “[Improvisations] act on the level of instrumental praxis rather than musical thought...by musical thought I mean above all the discovery of a coherent discourse that unfolds and develops simultaneously on different levels” (Berio, 1998: 85). Clearly, one of the attractions of offline composition is the creation of an internally consistent musical entity, the structure of which is premeditated by a single creator-controller for performance by an individual or body of musicians united towards a fixed goal. But this by no means places the realm of “musical thought” exclusively within the camp of pre-notated composition.

³ Lewis has written passionately and prolifically about the achievements of, amongst others, the improvisation-focussed Association for the Advancement of Creative Musicians (e.g. Lewis, 2004).

⁴ Allow as an example a rather extreme case: Describing the budget cuts and political pressures on the US's National Endowment for the Arts in the 80s and 90s Leung states “In an analogy chillingly reminiscent of the Nazi cultural metaphors, [Pat] Buchanan writes, ‘As with our rivers and lakes, we need to clean up our culture: for it is a well from which we must all drink. Just as a poisoned land will yield up poisonous fruits, so a polluted culture, left to fester and stink, can destroy a nation's soul.’ Let the citizens be warned: ‘We should not subsidize decadence.’” (Leung, 2004: 126)

As a reaction to such views, several improvisers refer to their work as *real-time composition*, in an effort, no doubt, to raise the status of their practice. Though several creditable arguments can be made for using this term, not least of which is that the word composition itself means little more than “putting together” (Parker, 2006: 416), surely an abandonment of the term improvisation supports its detractors more than its practitioners. Protagonists should use the word improvisation with pride, underlining its strengths and seriousness, setting it on a par with what is conventionally referred to as composition, rather than tacitly agreeing with the critics and implying that composition is the more noble activity after all, that improvisation *is* the lesser art.

Musical Notation

Bruno Nettl makes a convincing argument for no longer viewing notation as the crux of the argument between composition and improvisation, but rather, how carefully thought out the musical idea is. He connects at one extreme the fast, quasi-improvisatory compositions of, for example, Schubert, with, at the other extreme, the more slowly-wrought works of Beethoven (Nettl, 1974: 6).⁵ Nettl argues that “the lines that different cultures might draw between ‘fixed’ composition and improvisation will appear at different points of a continuum” (ibid: 7). The question revolves around how much the performing musician is creatively involved in the presentation of the music. “All performers improvise to some extent” (ibid.: 19), a fact which is patently clear to the budding computer music composer when faced with a machine instead of a human musician: Assuming the composer has prior experience of writing music for acoustic instruments, when subsequently composing for the computer it is virtually impossible not to grasp how much more humans bring to a score than is contained within the notation, i.e. that which is implicit and inculcated through many years of study and performance practice.

In the Western musical context, it is common to find prejudice against musicians who can’t read music. The tension between ‘reading’ white and ‘non-reading’ black jazz musicians (however invalid the literacy or illiteracy attributed to these broad racial groups may be) is documented by Peretti: “Commercial sponsors frequently helped to promote discrimination; for example, in 1945 Chesterfield, based in the South like all tobacco companies, at first refused to sponsor a broadcast featuring a mixed band, on the assumption...that black jazz musicians ‘can’t read’ and were ‘troublemakers’” (Peretti, 1994: 185). That this prejudice still exists, albeit perhaps no longer in the context of a racial divide, should be of concern to all who recognise the value of music from cultures other than the Western classical tradition.

⁵ We should not forget, though, how important improvisation was in establishing the career of Beethoven and how much respect the culture of his time accorded him for his tremendous improvisation skills. For further discussion see Jones, 2008.

Non-reading musicians' achievements have been demeaned then; some even demean themselves for the lack of this simple, secondary skill. For example, the world-renowned drummer Han Bennink:

“I have been improvising my whole life, because I cannot read notes. I have to anticipate the situation...I will be playing the compositions in this orchestra [the Instant Composers Pool] each time totally different, so I play in a frame: improvisation. Because I cannot read notes...I will be doing it my whole life because I'm too stupid to read notes. That's fine” (Bennink, 2009)

To read or not to read is simply not the issue when you consider the musical achievements of Bennink. Music is a sonic art and notation merely a tool. Notation's fetishization as a prerequisite for acceptance into the musical 'guild' is a perversion of Western culture, a manifestation of snobbery and intellectualism even. And the word guild is used consciously here for its mediaeval connotation, its connection to a time when literacy was generally restricted to the clergy and professional classes i.e. to those in power. Without wishing to labour the point, literacy in mediaeval England, for example, was not only used as a means of social control,⁶ it was in some legal situations quite plainly the difference between life and death: The reading or recitation of a verse of the bible (often Psalm 51, otherwise known as the *neck verse*⁷) gave the accused the 'benefit of clergy' and therefore more lenient sentences.

The still current overemphasis on reading in the Western music world is, I would argue, an extension of the mediaeval prejudice favouring the literate classes. Then as now, literacy supports a hierarchical power and binding mechanism, with education a potent tool for influencing minds.⁸ If only officially sanctioned, notated music may be performed, then its power can be harnessed and kept under control. Conversely, spontaneous music making (e.g. improvisation in pop/rock) might represent a threat to the established powers.

Of course, in this rather narrow concentration on musical literacy as an instrument of social control I am overlooking the otherwise benign function of notation as an

⁶ Speaking of mediaeval education Graff writes “England had laws that forbade those bound to a lord of the manor to send their children to school without paying a fine or dues. This prohibition reflects efforts to socially control the masses and restrict freedom of movement for labor force needs” (Graff, 1991: 74).

⁷ “A Latin verse printed in black-letter (usually the beginning of Psalm 51 *Miserere mei Deus*, ‘Have mercy upon me, O God’) formerly set before a person claiming benefit of clergy, by reading which he might prove his clerical status and hence save his neck. The test was based on the assumption that the ability to read Latin was a clerical prerogative, but the verse was sometimes also memorized by laymen in order to claim benefit of clergy.” (OED 2008)

⁸ “The clergy and nobility required education, increasingly more of it, to perform their clerical and civil tasks: protecting the church, augmenting the faith...” (Graff, 1991: 74).

excellent (though not essential) tool for recording and composing music. Nevertheless, when considering the social context and reception of sanctioned, notated music versus unsanctioned, improvised music it is instructive to consider the view promulgated from the pulpit of the current pope. In a 2007 address, Pope Benedict openly criticised modern forms of music and called for a return to Gregorian chant: “Generic improvisation or the introduction of musical genres which fail to respect the meaning of the liturgy should be avoided” he says (Gledhill, 2007). Clearly he sees improvisation as disrespectful of his authority.

Electric Cowboy Cacophony

“There has to be some degree, not just of unfamiliarity, but incompatibility [with a partner]. Otherwise, what are you improvising for?” (Derek Bailey, 2002)

It is probably worth stating at this point that I am both a reading musician and a writing composer. I began composing contemporary classical and computer music within the sanctioned walls of British and American academia in the late 1980s. But I have been improvising regularly only since 2005, despite some dalliances in the 1990s.

The free improvisation quartet *Electric Cowboy Cacophony* (henceforth ECC) was formed in Marseilles in 2006. I play laptop with MIDI Wind Controller⁹ and saxophones. The other members of the group are US composer and banjoist Paul Elwood; French/Corsican guitarist Jean-Marc Montera; and Austrian pianist Karin Schistek. Elwood’s background as a banjoist is in country and bluegrass music; Montera’s beginnings were in rock; Schistek was classically trained in the conservatoires of Austria. A fruitful musical meeting of such divergent practitioners is only possible in the context of improvisation: traditional notation would almost certainly preclude a democratic music-making that could take advantage of each musician’s particular and individual qualities.

When improvising, a non-hierarchical freedom of approach is common to all these practitioners and was considered essential to the success of the project. With ECC this freedom is expressed simultaneously in the sense of the established Free Improvisation movement (e.g. not having to play within the bounds of a defined style) as well as being ‘permitted’ to audibly reference established aesthetics. This is, then, quite distinct from the rules-based approach of traditional jazz or improvisation as described by composer Roger Reynolds as “more or less profitable wanderings in a well-defined maze where the composer, performer and listener know the rules and references” (Reynolds, 1965: 136). Indeed, this view does not represent the experience of most improvisers today, as George Lewis points out (Lewis, 2006: 431). Rather, as improvising (jazz)

⁹ Somewhat like an electronic clarinet but which only creates digital playing data, not sound.

saxophonist Steve Lacy remarks: “you have all your years of preparation and all your sensibilities and your prepared means but it is a leap into the unknown” (Fischlin, 2004: 145).

Above all, the group’s trans-national/trans-cultural/trans-aesthetic character defines their sound world. The juxtaposition of practitioners from disparate musical and geographical areas was part of the design to confront Bailey’s prerequisite for improvisation head on (Bailey, 2002). It is certainly fair to speak of ECC’s eclecticism, but not of pastiche or style-copy. We seek a balance between a common meeting ground and an unfettered expression of our individual stylistic preferences and backgrounds: Elwood’s bluegrass rooted plucking patterns as heard in the *Shark Piano* (Edwards, 2008) track *beard and pipe*; Schistek’s Second Viennese School inflected harmony in *karibo*; Montera’s heavy, distortion-saturated ‘axe’ in *shark guitar*; my spitting digital signal processing (DSP) in *zank*, or jazz-inflected saxophone in *scales and whales*; not to mention the austere discontinuities of the banjo/sax/piano trio *instant helmut* versus the comparatively easy listening of *any more toto?*.

The common ground in ECC is what we might now call Idiomatic Free Improvisation. Derek Bailey—widely regarded as one of the founding fathers of European Free Improvisation—originally saw his music as “non-idiomatic” (Bailey, 1980), i.e. not in any recognisable style, for example jazz. He later admitted that free improvisation had itself become an idiom (Bailey, 1993), characterised by the avoidance of external stylistic reference, but also by the aforementioned lack of regular beat and tonal centre, amongst other things. ECC’s conscious reference to and integration of pre-established musical aesthetics arises out of the conviction that any orthodoxy is undesirable and prone to lead to stagnation; it also forms an attempt to reinvigorate and move beyond Idiomatic Free Improvisation.

But a marriage of various musical styles is nothing new in itself. Jacques Attali writes that “sometimes it [composition] crystallises in a multifaceted time in which rhythms, styles, and codes diverge, interdependencies become more burdensome, and rules dissolve” (Attali, 1985: 147). Within the field of improvisation, John Zorn is known to cut directly from one disparate style to another within a single piece, in various performances and recordings, most notably those associated with his *Cobra* (Zorn, 1984). In Zorn’s case we can sometimes speak of style copy, quotation even. ECC’s aim is to forge an amalgam of contemporary aesthetics by simultaneously presenting or moving seamlessly from one influence to another; to create a collection of pieces which reflects aspects of our multi-faceted contemporary musical culture, yet at the same time remains internally consistent. There is, however, no attempt to create a recognisable idiom out of this approach itself. ECC is open to rules-based or completely free improvisation alike. If rules are used, they will generally be of the group’s design and restricted to such simple things as setting a mood, defining instrumentation, or establishing an opening soloist. The rules, if any at all, will

most probably only be established for a single improvisation in a unique performance or recording. Thus Reynold's description ("where the composer, performer and listener know the rules and references") is not at all applicable.

Live Electronics

One particular strategy which worked well in realising this goal was that of opening an improvisation with a solo, the other musicians entering at will and in accordance with (or perhaps even against, as a reaction to) the established material.¹⁰ This gave the individual the space to develop their language or idea, to make their statement, without the need to fit into an established musical context. In effect then, the others were forced to find common ground (or at least a related reaction) when they entered the music. In my case, a first intervention or mediation was often some laptop processing of the soloist's material. This established a bridge from the soloist to more individual statements of a digital nature.

Though the computer did not play a significant role during the birth of free improvisation in the 1960s and 70s, through general access to cheap hardware/software and the relative ease of sound production on the computer, it is now a significant presence on the Free Improvisation scene. Using computers as real-time performance instruments was a goal from the very beginnings of computer music. Though processor speed and other hardware issues hampered development at least up until the late 1980s, serious and fruitful work can be seen as early as 1970 in Max Matthews' GROOVE System (Dodge, 1985: 327-8). Since the introduction of the Max graphical programming environment in the mid-1980s, low-cost, flexible, MIDI-based control of real-time music systems has been available. The introduction in the late 1990s of DSP algorithms (MSP) to the Max environment and its open-source cousin *Pure Data* (as well as comparable systems, such as *SuperCollider*) resulted in a grassroots revolution in music involving live computer-based electronics. Though by no means the only software available for user-configurable DSP and synthesis-based computer music, Max/MSP has become probably the most ubiquitous computer music software used in live performance; it was also the software environment used in this project.

Personal experience of such systems has shown that computer sound processing techniques can forge sonic melting points of otherwise unrelated musical elements—a particular strength given the nature of the ECC project. Since 2005 I have been developing improvisation software and strategies to allow the laptop to rival acoustic instruments for their physicality and sonic variety (hence the inclusion of the clarinet-like MIDI Wind Controller in my digital performance

¹⁰ The 'opening solo' approach was arrived at as a compromise between Montera's initial reluctance to plan any aspect of the music in advance and, for instance, Schistek's desire to pre-establish at least a mood (she believes this helps clarify and establish musical ideas and aids interaction amongst the players).

system). The use of the computer in the ECC context is, though, as an instrument controlled by a human being, as opposed to an improvising entity in itself (as exemplified by George Lewis in *Voyager* (Lewis, 2000: 33-39)).

The four-channel software developed in Max/MSP uses custom-written external objects coded in C and JavaScript. Amongst other processes, granular synthesis and real-time sampling parameters are governed by the MIDI wind controller connected to the laptop. This combination offers an immediacy and physicality that most laptop music systems lack. Real-time sampling here involves the analysis of up to four incoming signals from my fellow improvisers, finding attack points, and mapping these to an octave of the wind controller every twenty seconds or twelve attacks, whichever is sooner. In this way, sounds are only under the fingers for a short time before being replaced by newer sounds—and it is not easy to know what’s coming next—but as these come from the instruments of the other musicians, they are always related to the current musical and sonic situation.

The difficulties of using the laptop in the ECC context were mainly related to the diverse, and from the point of view of the other musicians, unpredictable nature of sounds produced in both its proactive and reactive modes. Though I was always directly in control of the laptop, I sometimes allowed it to act more as an effects processor (reactive) than as an instrument (proactive). The relation between these two extremes is, however, mostly a flexible one, and a path between them is usually navigated in performance.

The very nature of the laptop’s sonic diversity often led to confusion amongst the musicians as to what sound was coming from them and what was coming from the computer. This was especially true when extended and sometimes unpredictable instrumental techniques were employed. The laptop’s sonic diversity also led to some misconceptions as to just what is digitally possible at any given time. This is by no means surprising given that one of the aims in using a computer in the project was to blur the edges between acoustic and electronic sound, to sometimes be dependent on sonic input in order to create output.

The Recording

*Shark Piano*¹¹ is ECC’s first recorded release. It was made at the studios of the Groupe de Recherche et d’Improvisation Musicales, Montevideo, Marseilles, France, 14th-19th July, 2008. Mixing and mastering took place in the author’s home studio in Edinburgh. All tracks were recorded in one take and there were no cuts, splices, or overdubs made to influence or shape the structure of the music. On the contrary, the musical form was made spontaneously in real time, as opposed to being created in post-production (where, for example, parts of one improvisation could be merged with parts of another). Though I am personally not averse to such post-production manipulations—after all, it is the music that

¹¹ See <http://www.sumtone.com/ecc.php> for more details, including mp3s (Edwards, 2008).

ultimately counts, not how it was created—I do feel the nature of a group improvisation of this type demands a form of honesty in the presentation of its recorded form. By honesty I mean that many listeners will approach such a recording as a documentation of the interactions that occurred between the physically and chronologically present performers; that their appreciation of the music will to some extent be influenced by their belief that such interactions and formal developments happened in real and forward-flowing time, without the inaudible digital edit being applied to make up for the musicians' bad judgements or rambling forms. As such, improvisations were selected (or rejected) for the disc on the merit of their complete form. Standard dynamic and tonal balance (EQ) processing were however applied on an instrument-by-instrument basis during mixing, as well as on the whole mix at the mastering stage, as is customary on all recordings except those of the purest audiophile type (hardly conceivable given the inclusion of a computer in the group).

The recordings were mixed by the author first and foremost for five-channel DVD-Audio in order to take advantage of the immersive qualities of surround sound. A particular concern in deciding to record and mix for this medium was to capture the multidimensional spatial qualities of the four-channel laptop output (as heard most clearly on *zank*), as well as to profit in general from surround mixing techniques: these can offer more depth, fidelity, and presence than conventional stereo recordings. However, a separate stereo CD mix of the same material was made and the project was released on dual DVD-Audio and CD discs¹². The decision to include a stereo CD was made because not all DVD players support the DVD-Audio format and, more importantly, most listening situations do not offer a properly configured surround sound audio system. Rather than rely on the automatic surround-to-stereo down-mixes performed by most DVD players, presuming that for now the majority will listen in stereo, it was preferable to create an optimum mix for that format, providing the DVD for the more well-equipped listener, and perhaps for the future, should this technology continue to exist.

Conclusion

The power and creative potential of Western musical notation is undeniable and well documented. On the other hand, the rich traditions of non-Western musical cultures—where form and practice is passed down through various mechanisms both oral and otherwise—as well as the more recent developments in jazz and free improvisation, make it clear that compelling music can be made through less mediated forms of practice. Improvisation enables fruitful musical exchanges between musicians of any provenance. This project would not have been possible had it involved musical notation because Montera does not read music. But this is perhaps the least significant of all reasons for employing improvisation here: The arguably unnotatable rhythmic subtlety, the tempo and metric confluences, and

¹² A more elegant solution would have been to release a hybrid Super Audio CD but costs were prohibitive.

perhaps above all, the unplannable serendipities of instant musical exchange between live performers irrefutably confirm the value of improvisation, free or otherwise. The use of the computer adds its own complexities, as the various and virtually unlimited variables of its processes go well beyond the usual notational parameters of pitch, duration, dynamic etc. To attempt notation and reproduction of such would require a radically overhauled or extended notational system and would probably result in losing more than is gained (attempts of course have been made, but they are usually of a basic and incomplete nature and, more problematically, often dependent on short-lived technology). Just as recording equipment has made bypassing traditional notation the norm for most popular musicians, perhaps the developing use of the computer as a musical instrument will further highlight the deficiencies of common notation to the point where it massively decreases in significance, or at least radically changes. But ultimately, notation is no more than a tool; let it be used as such and with the purpose of creating music, not towards validating one group of musicians whilst disenfranchising another.

References

- Attali, Jacques, *Noise: The Political Economy of Music* (Minneapolis: University of Minnesota Press, 1985).
- Bailey, Derek, *Improvisation: Its Nature and Practice* (Cambridge MA: Da Capo Press, 1980).
- , *Improvisation: Its Nature and Practice*, 2nd Edition (Cambridge MA: Da Capo Press, 1993).
- , *Jazziz* (Gainesville: March 2002).
- Bennink, Han (speaker), interview recorded by Mary Oliver, April 2009.
- Berio, Luciano, *Two Interviews*, (London: Marion Boyars, 1998).
- Dodge, Charles and Thomas Jerse, *Computer Music* (New York: Schirmer Books, 1985).
- Edwards (producer), Electric Cowboy Cacophony (musical group), *Shark Piano* (Tübingen: sumtone, 2008), CD/DVD-Audio.
- Ferand, Ernest, *Improvisation in Nine Centuries of Western Music* (Cologne: Arno Volk Verlag, 1961).
- Fischlin, Daniel and Ajay Heble, ed., *The Other Side of Nowhere* (Middletown: Wesleyan University Press, 2004).
- Gledhill, Ruth, 'Pope tells Catholics to put faith into legislation', *Times Online* 13th March 2007, <http://www.timesonline.co.uk/tol/news/world/article1511305.ece> (accessed 18th June 2009).
- Graff, Harvey, *The Legacies of Literacy* (Bloomington: University of Indiana Press, 1991).
- Jones, Timothy, *Beethoven: The 'Moonlight' and other Sonatas, Op. 27 and Op. 31* (Cambridge: Cambridge University Press, 2008).
- Joyner, David, 'Traditions, Institutions, and American Popular Tradition', *Contemporary Music Review*, Vol. 19:1 (2000).

Leung, Simon and Zoya Kocur, ed., *Theory in Contemporary Art since 1985* (Hoboken: Wiley, 2004).

Lewis, George, 'Too Many Notes: Computers, Complexity and Culture in Voyager', *Leonardo Music Journal*, Vol. 10 (2000).

———, 'Gittin' To Know Y'all: Improvised Music, Interculturalism, and the Racial Imagination', *Critical Studies in Improvisation / Études critiques en improvisation*, Vol 1, No 1 (2004)
<http://journal.lib.uoguelph.ca/index.php/csieci/article/view/6/14> (accessed 23rd June 2009).

———, 'Improvisation and the Orchestra', *Contemporary Music Review*, Vol. 25 Nos. 5-6 (2006).

Nettl, Bruno, 'Thoughts on Improvisation: a Comparative Approach', *The Musical Quarterly*, Vol. LX No. 1 (1974).

OED Online, September 2008, Oxford University Press.,
<http://dictionary.oed.com/cgi/entry/00322302> (accessed 18th June 2009).

Parker, Evan, *Contemporary Music Review*, Vol 25:5 (2006).

Peretti, Burton W., *The Creation of Jazz: Music, Race, and Culture in Urban America*, (Champaign: University of Illinois Press, 1994), 185.

Reynolds, Roger, 'Indeterminacy: Some Considerations', *Perspectives of New Music*, Vol. 4 No. 1 (1965).

Zorn, John, *Cobra* (unpublished, 1984).