The Burkina Electric Project and Some Thoughts About Electronic Music in Africa

Lukas Ligeti
q@lukasligeti.com
http://www.lukasligeti.com

Keywords

Abstract

This paper is an updated summary of a presentation I gave at the Unyazi Electronic Music Festival in Johannesburg, South Africa in 2005.

Burkina Electric, founded in 2004, is an ensemble featuring two musicians (singer Mai Lingani and guitarist Wende K. Blass) and two dancers (Hugues Zoko and Idrissa Kafando) from Burkina Faso; the German pop music pioneer Pyrolator on electronics (both audio and visual); and myself on electronics and drums. Our objective is to create and perform original music combining the traditions of Burkina Faso with the world of DJ/club/dance electronica. In so doing, we build bridges between African and Western cultures, especially in the domains of pop/youth culture and experimental music. Burkina Electric's debut CD, *Paspanga*, was recently released for the Burkinabè market.

By using elements of Burkinabè traditional music, including rhythms not usually heard in contemporary urban music, plus rhythms of our own creation, we aim to enlarge the vocabulary of "grooves" in the club/dance landscape; the dancers help audiences interpret these unusual rhythmic patterns. Sonorities and structural models of West African music are transferred to electronics and reassembled and processed in various ways. Rather than superimposing drum programming on top of an African traditional structures, we compose music that aims to organically confront and combine Africa and Occident, and tradition and experiment, while maintaining the particular sensibilities of both worlds.

Working on electronic music with African musicians has inspired me to think about the possibilities inherent in this combination. I believe that these areas hold unique potential for each other, along with special challenges, both technical and conceptual/aesthetic. Using my work with Burkina Electric as a point of departure, I provide a brainstorm of my ideas for this line of work.

Performing music and dancing are hard to dissociate from each other in African culture, while the advent of electronic music has, in the West, reduced the kinetic aspects of music performance. I think that the African approach to playing music could infuse new life into live electronic music, especially through the creative use of MIDI controllers. Similarly, the connection between music and language in Africa, as well as analogies between music and visual art, could provide templates to develop in the electronic realm.

Page **1** of 9
http://leoalmanac.org/journal/vol_15/lea_v15_n01-02/LLigeti.asp

Leonardo Electronic Almanac
Vol **15** Issue **01 – 02 January 2007**
Last updated on 23 January 2007
info@leoalmanac.org

The cyclic and additive structure of much African music lends itself well to digital environments, and since African music provides the structural foundation for most international pop, sequencer programs have much African-based thinking embedded in them. This gives food for thought: is most electronic music actually African music? Could one create music software geared more specifically to African musical approaches?

Another area worth examining: African sonic ideals and their similarities to electronic sound processing. And the role of instrument building in Africa, which has created a highly varied landscape of instrumental standards, not unlike the customization of software environments by individual users.

Introduction

In September of 2005, I had the pleasure of participating in the Unyazi Electronic Music Festival in Johannesburg, South Africa, the first festival for (experimental) electronic music to be held in Africa. I gave a solo performance using the Marimba Lumina, a MIDI controller designed by Don Buchla, and spoke at the festival's symposium, reporting on Burkina Electric, a collaborative music project I'm working on, as well as sharing my thoughts on the possibilities, challenges, and promises of electronics and computer technology in the African musical environment. The following is a summary of my Johannesburg presentation.

I have collaborated with African musicians since 1994, when I founded the group Beta Foly with colleagues in Abidjan, Côte d'Ivoire; an article I wrote about this group, which combined African and "Western" musical concepts in a multitude of ways, including experimental uses of computer technology, was published in *Leonardo Music Journal's* 2000 issue. Among the tracks on Beta Foly's CD, *Lukas Ligeti & Beta Foly* (Intuition Music, Germany, 1997), was a piece called *African Loops*, in preparation for which my German collaborator Pyrolator Kurt Dahlke (an important figure in the history of Germany electronic pop music and my production partner for much of my work in West Africa) and I recorded the group members playing short phrases, and then sampled these fragments. Out of this material, Kurt assembled a composition, teaming up with singer Yero Bobo Bah to create a combination of Guinean folk music and the emerging popular Western musical style of DJ/club/dance "electronica". Fusions of West African music and electronica have recently become popular (well-known names include Issa Bagayogo from Mali; French dj Frédéric Galliano with his Frikyiwa projects; Eccentric Sound System, with Israeli bass player Yossi Fine and musicians from Ghana; Electro Bamako with Frenchman Marc Minelli and Malian singer Mamani Keïta; etc.), but, apart from the hip-hop scene that was starting to emerge at the time (especially in Senegal), I am unaware of any dance electronica/West African fusions preceding *African Loops*.

Burkina Electric started in 2004, when the Austrian non-governmental organization VIDC (Vienna Institute for Development and Cooperation/Moving Cultures) asked me to assemble a project with Burkinabè musicians and electronics, and organized a six-concert tour for the new group. I invited the singer Maï Lingani and the guitarist Wende K. Blass, two of the most open-minded and respected musicians in Burkina Faso and long-time collaborators of mine in Beta Foly and other projects, as well as Pyrolator to join me in forming the new band; the Austrian electronic composer Rupert Huber, known through his duo Tosca with the DJ Richard Dorfmeister, was also involved from the beginning on.

The project's objective is to pursue the direction indicated by *African Loops* and to forge a connection between DJ/club/youth culture in Europe and its equivalents in Burkina Faso. In the winter of 2005/06, we recorded a debut CD; in May 2006, we released this CD, entitled *Paspanga*, for the Burkinabè market (on AtaTak/Seydoni Production) and presented (with support from the Austrian Development Cooperation) the group in concerts in

Page **2** of 9
http://leoalmanac.org/journal/vol_15/lea_v15_n01-02/LLigeti.asp

Leonardo Electronic Almanac
Vol **15** Issue **01 – 02 January 2007**
Last updated on 23 January 2007
info@leoalmanac.org

Ouagadougou and Bobo-Dioulasso as part of the Jazz à Ouaga festival. We hope to release our CD for international distribution in the foreseeable future.

As I embarked on this project, I wanted to address several conceptual questions. Western pop is based on a narrow selection of rhythms, and the availability of machines, theoretically able to play any rhythm, seems to have done little to change that. This may be due to the belief on the part of many producers, audiences, and even artists that rhythms outside of these conventions are not "danceable", but I am convinced that almost any rhythm can be danced to. In 1997, I was in Zimbabwe for a project involving the Valley Tonga, a tribe living in the Lake Kariba area who play a form of funeral music called *Ngoma Buntibe*. My stay was brief and there was no translator at hand, so I was unable to develop any real understanding of this very unusual music which, though part of the tradition of Bantu "one man-one note" horn ensemble music, seemed to me to lack any metric regularity whatsoever. With my level of comprehension, dancing was an impossibility, yet that is exactly what the villagers did: they knew where the beat was, moved synchronously, and knew how to anticipate changes or endings. This experience suggested to me that the danceability of music is not an absolute; it is part of the cultural context. If one "understands" a music well enough to know what the key elements are, what to listen for in order to understand rhythm, meter, tempo, and form, then one has "broken the code" and will be able to dance.

Another feature of recent pop music is rhythmic precision. Some years ago, I tried the following: I recorded the drums for a pop song, making my best effort to play as precisely as possible. The track sounded good and the drums appeared solid. I then went to a discotheque and played the track over the sound system: the drumming seemed so "loose" and disorganized that neither I nor anyone else felt the slightest inclination to dance. With the advent of music technology, "live" drummers in dance music have increasingly been replaced by computers, so that by the mid-1990s, virtually no tracks made for a discotheque environment featured a drummer; consequently, the listeners' expectation of precision in micro-timing was so high that a rhythm played by a human seemed too messy to dance to. This is also true in Africa, where most local productions, even in traditional styles, now use drum machines for reasons of expedience but also to give the music a "contemporary edge"; alas, they are often programmed in very blunt ways, both rhythmically and sonically. Furthermore, due not only to fashion trends but also to the desire of DJs to segue seamlessly from one song into the next, the listenership of electronic pop music has become fragmented into cliques and camps. Music using rhythms or tempos deviating even slightly from what has been done before is immediately assigned a new genre-name, which has led to the division of electronica into styles such as techno, house, drum&bass, jungle, two-step, garage, trip-hop, ambient, etc. Fans of one sub-genre often maintain that the other "style" is difficult or uninspiring to dance to (which only reinforces my above assertion about the non-universality of danceability) because the tempo is "wrong", or for another reason.

Given all this, a composer of dance electronica has lots of freedom...as long as he doesn't question what I call the "tyranny of the groove". I hoped for African-electronica fusion as a way to introduce new rhythmic ideas; however, I was disappointed when I heard some such projects from the past years and the way they approached the "transformation" of African traditional elements into DJ/club music for urban audiences in both Africa and the West. In many cases, especially on tracks with a "remix" aesthetic, an African traditional musician or group played essentially as they usually would; on top of that were superimposed automated drum rhythms of the kind used in contemporary disco electronica. This struck me as problematic for a variety of reasons. First, while it's true that the rhythms forming the basis of today's Western pop music derive to a fair extent from African models, they have since taken on a life of their own and cannot simply replace African traditional rhythms. Moreover, the rhythms played by the African musicians contain a great amount of subtlety and irregularities, arising from particularities in phrasing that might vary from village to village, the music's connection with spoken word, personal style, historical reasons, or even imprecision in execution. Whatever the cause, I found it a pity for these

Page **3** of 9
http://leoalmanac.org/journal/vol_15/lea_v15_n01-02/LLigeti.asp

Leonardo Electronic Almanac
Vol **15** Issue **01 – 02 January 2007**
Last updated on 23 January 2007
info@leoalmanac.org

subtleties to be overpowered by machines. I did not want African traditional music to be used at the service of the disco music industry — but I likewise had no intention of subjecting Western concepts to the conventions of African music. Rather, I wanted to create music that was stylistically new, yet recognizably African and recognizably electronica.

Unlike its film industry, Burkinabè music is virtually unknown internationally. The country is a crossroads between Mandé and Voltaic cultures, representing very different musical vocabularies. In Burkina Electric, we use elements of all these traditions and retain some of their particularities. Rather than a complicated setup using many traditional instruments, we use samples of all these sounds, which we treat and reassemble in various ways, expanding the tradition and conflicting with it. While we occasionally play traditional pieces, we compose most of the repertoire ourselves in a collaborative process. Instead of the "normal" rock, funk, and disco rhythms, we use Burkinabè rhythms as well as grooves of our own invention, integrating various African influences. For example, one of Burkina Faso's best-loved rhythms is the Waraba, typical of the Mossi people, the largest Voltaic ethnicity in the country. It is based on a pattern played on the *tchema,* a traditional set of bells, but it is not an "assymetric timeline pattern" like the "claves" from coastal areas; it is a "symmetric timeline pattern", going as follows: |xoxxxx|xoxxxx| (where x is a note on the bell an o a rest). The pattern can be accented in a variety of ways, such as |Xoxxxx|Xoxxxx| or |XoxxXx|xoXxxx|; the resulting tension between binary and ternary, two and three, etc. being typical of many types of African music. When using the Waraba rhythm, we attempt to include variations and fluctuations, including ones that would not be possible without the help of electronics: mixing different sets of tchemas or tunings, creating longer, less repetitive patterns leading to more complex polymetrics, etc. Some of our pieces feature rhythms played by machines, but using sounds and structures such that the machines become an "organic" component of the African rhythmic realm, rather than creating a superimposition of African music and computer grooves. Self-made field recordings also play a large part in our songwriting. One of our songs is based on a sample of a recording I made in a market in Ouagadougou, of a man trying out some tchemas, playing sloppily. When looped, this pattern forms a completely new groove, unlike anything traditional.

Since we thought that it might be difficult for audiences, accustomed to conventional grooves and thus having certain expectations of the electronica genre, to find their way into our rhythmic world — especially in the West, but perhaps even in Africa — we invited two dancers to join the group, making dance an integral part of the music, actually a conventional idea in Africa. The choreographies of As (Zoko Hugues Zoko) and Vicky (Idrissa Kafando) combine elements of traditional and modern dance, with Maï Lingani dancing as well, and during our first tour in Austria, we found that the dancers were indeed able to draw audiences into the rhythms, "explaining" them through their movements. In the beginning of our shows, audiences were seated, but gradually, people stood up, and by the end, everyone was dancing. To add another layer to our visual presentation, Pyrolator, who is an equal participant in our compositional process and our sound engineer, functions in our concerts less as a musician than as a VJ, using a modification of Joshua Goldberg's "dervish" environment in Jitter (Max/MSP), which he has expanded to include an application for MIDI triggering to manipulate footage we shot in Burkina Faso. I play drums and electronic percussion; we all — including Maï and Wende — oversee the laptop computer that generates the rest of our live sound. To trigger samples and communicate with the computer, both Pyrolator and I mainly use MIDI controllers designed by Don Buchla: Pyrolator a Lightning 2, and I a Marimba Lumina 2.5, which, due to its "mallet-instrument" paradigm, also allows me to play melodically in ways reminiscent of the West African balafon tradition.

Our composing is mainly done at Kurt's Atatak Studio in Düsseldorf, Germany, where we convene for composing and recording sessions. We primarily use Logic Audio and Ableton Live; some of our rhythms are first developed

Page **4** of 9
http://leoalmanac.org/journal/vol_15/lea_v15_n01-02/LLigeti.asp

Leonardo Electronic Almanac
Vol **15** Issue **01 – 02 January 2007**
Last updated on 23 January 2007
info@leoalmanac.org

in Fxpansion Guru. In performance, we employ Live; while the songs seem quite "compositional" on our CD, the use of Live allows us much freedom for improvisation during concerts, changing lengths of sections, recombining elements, and using all manner of sound processing. With two PowerBooks (one for sound, one for video), electronic percussion, drums, guitar, vocals, and two dancers playing occasional little instruments, our setup is simple, lightweight, and rugged. On the whole, Burkina Electric is more a pop project than an experimental one, and our objective lies less in the area of technical or technological innovation than in proposing ways of handling traditional African sounds and structures that are both musically original and relevant to the changes occurring in African societies today, and to the way these changes are perceived in other parts of the world.

One reason why Burkina Electric is such a pleasurable project for me is that, aside from my fascination with electronic music and African music as separate areas, I see huge potential in bringing these worlds closer together, and in the following paragraphs, I will attempt to explain why this is so. I realize I am subjective and prone to oversimplifying and generalizing, for example when I speak of "African music" (by which I mean music from Africa south of the Sahara), really far too multifaceted an area to conceive of as a unit. My generalizations are made mainly for lack of space; all I intend to deliver here is a brainstorm of ideas, leaving specifics and many provocative questions open for the future.

In many African languages, the words for "playing" and "dancing" music are identical; in any case, less of a difference between music and dance tends to be made than in European cultures. Electronic music, made mainly on the computer, has introduced a new degree of detachment between motion and sound into everyday music-making; where there is movement, it is often minimal and cannot be followed by, for example, an audience watching a laptop performer. Many electronic musicians appear not to be troubled by this, as evidenced by the constant decline in popularity of MIDI and MIDI controllers, especially in experimental electronic music. Yet I think that live electronic music performance has huge potential, and Africa should be great terrain for MIDI controllers, used for artistic ends but also for research. Here, playing music is not taught exclusively via the sound, but also via movement patterns executed on instruments. This would make African musicians ideal performers on MIDI controllers, and indicates that traditionally-trained African musicians could find new ways to perform electronic music and, in so doing, possibly come up with ways to render electronic music far more interesting for live audiences.

Likewise remarkable is the connection in Africa between music and language, with the rhythmic and tonal inflections of poetry embedded in many melodies; lyrics are used as mnemonics in learning music. Electronics is an ideal environment for the combination of media; just as with dance, the proximity of music to poetry can open undiscovered artistic avenues, while the fact that similar structures are often explored in African music and visual art could lead to new analogies between electronic sound and visuals, with novel approaches to VJ-ing.

Much African music is cyclic and based on "additive" structures; in many ways, it is "digital" music, having at its heart a web of fast elementary pulse units. This way of thinking is quite close not only to basic ideas of computer architecture, but also, more practically, to how most sequencing software is conceptualized (though much of this software also uses bars and barlines, not a usual way of thinking in Africa). One might ask: Do most commercial sequencer programs actually lend themselves better to African than to European music?

Page **5** of 9
http://leoalmanac.org/journal/vol_15/lea_v15_n01-02/LLigeti.asp

Leonardo Electronic Almanac
Vol **15** Issue **01 – 02 January 2007**
Last updated on 23 January 2007
info@leoalmanac.org

Part of the reason why commercial sequencers have so much in common with African music is that they are made mainly for pop songwriting, which obviously derives to a significant extent from African structural models. So, if this is the case: could most electronic music made today actually be considered African music, no matter where or by whom it is produced? And if not, or perhaps in either case, a great challenge for African musicians and

programmers: how would one conceptualize a sequencing program specifically geared toward an African way of musical thinking? Such a question may seem quite theoretical. Consider, however, that notation in European music first evolved as a mnemonic technique, but that, as soon as it came into use, there began a constant back and forth between changes in musical style and notational technique, with the two areas exerting mutual influence on each other. Therefore, it would seem worthwhile to ask what would happen to concepts of sequencing, and reciprocally to African music, if these two areas entered into a direct dialogue.

Early-model computers, with their "low-level" programming languages, command-line environments, etc., were difficult to use for the "uninitiated", but today's machines use human-interface paradigms that simulate more "conventional" working environments so as to make their use more intuitive. Yet with this adaptation of computers to more conventional paradigms comes the danger that some truly revolutionary methods of working with computers may never be discovered — ways of manipulating data that are possible only in the "virtual" realm, not just because the computer can perform many more operations per second than a human being, but also because it creates a completely different working situation in which some limitations imposed by laws of physics, etc. can be disregarded. It would be interesting to see how African artists, using specifically African approaches to mathematics, geometry, and acoustic and visual pattern recognition, would design human interfaces, and whether completely new paradigms could be found, leading in turn to completely new types of music.

Another interesting difference between African and Western music lies in these respective cultures' sonic ideals. In Europe, musicians and instrument builders have long pursued "clarity" and "purity" of sound; in many African regions, however, an instrument is incomplete without attached objects — spiderwebs, bottle caps, etc. — that create a sympathetically-vibrating "mirlitone" effect. In a way, African instruments already "have their effect pedals built in": sound processing, an essential part of electronic music, has been present in African music for a long time...can this be used to creative ends in electronic music?

Not only are sonic ideals different in Africa and Europe, so is the degree to which instruments are "standardized". Western-style orchestral instruments are largely identical worldwide, but in Africa, instrument construction and tuning varies from village to village. This non-standardization in instrument design is similar to the situation in electronic music, where different artists may be working with similar hardware or software platforms (wood from the same trees; the same traditional tunes), but customize these environments so that no two of them are the same, making it difficult for a musician to use the computer (instrument) of another because they don't know how its components are interconnected, etc. Akin to computer musicians and programmers who often build their own environments, many African musicians build their own instruments; for them, this aspect of electronic music should be a natural fit. Also, seeking inspiration from the extreme variety of African tuning and timbral systems, electronics can help one find new avenues in harmony, timbre, etc. not achievable with conventional Western instruments.

A further consideration may tie together some of the ideas mentioned above and raise issues for possible discussion. In Africa, most music has a specific function in society: ritual and/or religious, dance/entertainment, political, etc. Also, beyond the connection of music and spoken word, there is the fact that, in Africa, most music is part of a given local style or musical language; all these circumstances keep music socially and

Page **6** of 9
http://leoalmanac.org/journal/vol_15/lea_v15_n01-02/LLigeti.asp

Leonardo Electronic Almanac
Vol **15** Issue **01 – 02 January 2007**
Last updated on 23 January 2007
info@leoalmanac.org

aesthetically "grounded". Neither the African nor the Western situation (the latter probably more encouraging towards experimentation, but also more prone to causing artistic isolation) is perfect, but both societies would do well to study each other more and perhaps internalize a little bit of the other's approach. Electronics are useful in this pursuit, as a means of information exchange (consider the huge potential the internet holds for Africa), as a research tool, and as a common platform within which musicians of different traditions can collaborate on

projects and bring in their various approaches, sharing them in an environment where their various contributions can work together (which is what we do in Burkina Electric).

South Africa is in a unique position in the clash and the fusion of African and non-African cultures; it is the country where traditional African and Western-style cultures, infrastructure, and institutions coexist in closest contact, making it the quintessential ground zero for experimentation in this field. Due to initiatives such as Unyazi in South Africa and other parts of the continent, I hope that experimentation and individualism will find more encouragement in the African musical fabric, and that infrastructural problems will be overcome (major telecommunications companies, customs regulations, etc. pose impediments here). Many in the West may see the "authenticity" of African music as being threatened by technology and the "outside" influences that necessarily come along with it, but I don't think African musicians are much concerned by this, as their music, fulfilling social functions, must evolve along with ever-changing lifestyles and dynamics of their societies. I hope Unyazi and other, similar initiatives will continue and blossom, and am curious to see what kinds of musical results we will see five or 10 years from now.

'Ligdi' is a song from Burkina Electric's debut CD, 'Paspanga', released in 2006 in Burkina Faso. It uses the waraba, a traditional rhythm of the Mossi people.
Click on URL to hear: http://leoalmanac.org/journal/Vol_15/lea_v15_n01-02/av/LLigeti.mp3
(Mp3, 9.13Mb, 6:38sec)

Page **7** of 9
http://leoalmanac.org/journal/vol_15/lea_v15_n01-02/LLigeti.asp

Leonardo Electronic Almanac
Vol **15** Issue **01 – 02 January 2007**
Last updated on 23 January 2007
info@leoalmanac.org

Author Biography

Lukas Ligeti was born in Vienna, Austria, and studied composition and jazz drums at the University for Music and Performing Arts in Vienna. From 1994 until 1996, he worked at the Center for Computer Research in Music and Acoustics at Stanford University. He has lived in New York City since 1998. He has received composition commissions from Ensemble Modern, the Kronos Quartet, Vienna Festwochen, Bang on a Can, Colin Currie and Hakan Hardenberger, Goethe Institute, American Composers Forum, etc.; his music has also been performed by the Vienna Radio Symphony Orchestra, Orchestre National de Lyon, London Sinfonietta, Amadinda Percussion Group, and many others. As a drummer, he has performed and/or recorded with improvising musicians such as John Zorn, Henry Kaiser, Raoul Björkenheim, Borah Bergman, John Tchicai, Gary Lucas, Jim O'Rourke, Jonas Hellborg, etc., and he frequently performs solo on electronic percussion. He co-founded the ensemble Beta Foly in Abidjan, Côte d'Ivoire for experimentation and exchange between African and Western musicians and has also worked with traditional musicians in Egypt (with Nubian musicians at the Cairo Opera), Zimbabwe, and Burkina Faso. In 2000, he composed an extended work for musicians of various Caribbean traditions resident in Miami, and in 2006, he was composer-in-residence at the University of the Witwatersrand in Johannesburg, South Africa.

Citation reference for this Leonardo Electronic Almanac Essay

MLA Style
Ligeti, Lukas. "The Burkina Electric Project and Some Thoughts About Electronic Music in Africa." "Unyazi" Special Issue, Leonardo Electronic Almanac Vol. 15, No. 1 - 2 (2007). 1 Jan. 2007
<http://leoalmanac.org/journal/vol_15/lea_v15_n01-02/lligeti.asp>.

APA Style
Ligeti, Lukas. (Jan. 2007) "The Burkina Electric Project and Some Thoughts About Electronic Music in Africa," "Unyazi" Special Issue, Leonardo Electronic Almanac Vol 15, No. 1 - 2 (2007). Retrieved 1 Jan. 2007 from <http://leoalmanac.org/journal/vol_15/lea_v15_n01-02/lligeti.asp>.

Page **8** of 9
http://leoalmanac.org/journal/vol_15/lea_v15_n01-02/LLigeti.asp

Leonardo Electronic Almanac
Vol **15** Issue **01 – 02 January 2007**
Last updated on 23 January 2007
info@leoalmanac.org

" . . . the highbrow hot spot of cyberspace . . . a digital bible
for the lowdown on the [hi-tech] art scene." —Wired

Leonardo Electronic Almanac (ISSN: 1071 4391)

Nisar Keshvani, Editor-in-Chief

Established in 1993, Leonardo Electronic Almanac is, jointly produced by Leonardo, the International Society for the Arts, Sciences and Technology (ISAST), and published by MIT Press, is an electronic journal dedicated to providing a forum for those who are interested in the realm where art, science and technology converge. For over a decade, LEA has thrived as an *international peer reviewed electronic journal* and web archive covering the interaction of the arts, sciences, and technology. LEA emphasizes rapid publication of recent work and critical discussion on topics of current excitement with a slant on shorter, less academic texts. Many contributors are younger scholars, artists, scientists, educators and developers of new technological resources in the media arts.

LEA Unyazi Special

Supplement to Leonardo Music Journal 16 (2005) - Noises Off: Sound Beyond Music

- :: Introduction — Unyazi — *Jürgen Bräuninger*
- :: Pauline Oliveros in the Arms of Reynols: A Collaboration — *Pauline Oliveros*
- :: The Burkina Electric Project and Some Thoughts about Electronic Music in Africa — *Lukas Ligeti*
- :: The Borders of Identity, A Personal Perspective — *Dr. Rodrigo Sigal*
- :: Music Technology at Stellenbosch University — *Theo Herbst*
- :: The Anxiety of the Client: Dilemmas of the Database as a Compositional Tool — *Matthew Ostrowski*

LEAD – Wild Nature and Digital Life Chat Transcripts
Moderated by **Marcus Bastos** and **Ryan Griffis**
Supplement to LEA Vol 14 No 07 08 (November 2006)

- :: Jeremy Hight & Peter Hasdell — *1 February 2007*
- :: Sue Thomas & Giselle Beiguelman — *29 January 2007*
- :: Jennifer Willet — *17 January 2007*
- :: Dene Grigar & Tara Rodgers — *17 January 2007*
- :: Brett Stalbaum & Kathryn Yusoff — *3 January 2007*

art / science / technology

http://leoalmanac.org   lea@mitpress.mit.edu

Page **9** of 9
http://leoalmanac.org/journal/vol_15/lea_v15_n01-02/LLigeti.asp

Leonardo Electronic Almanac
Vol **15** Issue **01 – 02 January 2007**
Last updated on 23 January 2007
info@leoalmanac.org